

Appendix 4

Environmental Assessment Report (EAR)

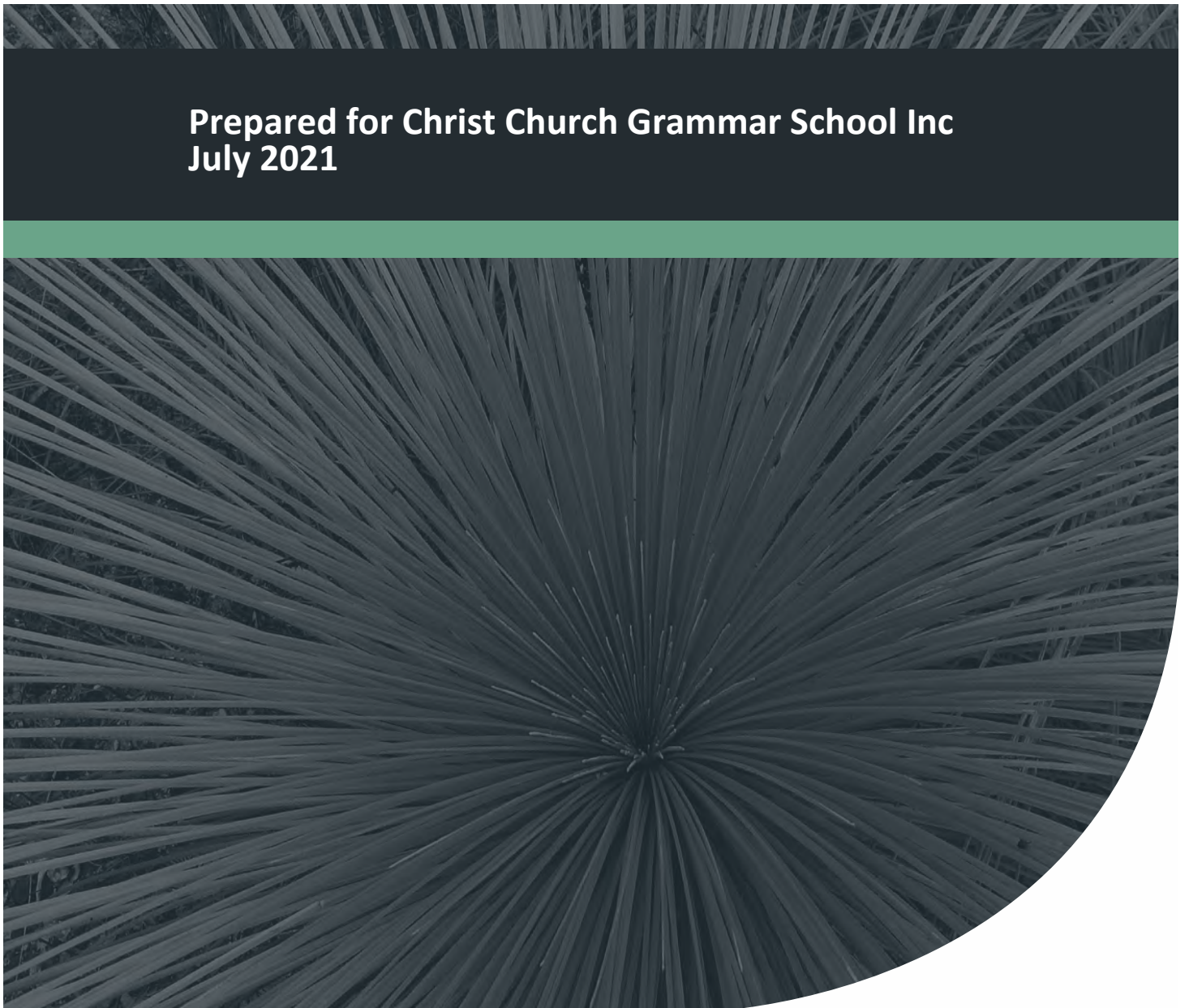
Environmental Assessment Report

Lot 2 McClemans Road, Mount Claremont

Scheme Amendment

Project No: EP21-045

**Prepared for Christ Church Grammar School Inc
July 2021**



Environmental Assessment Report

Lot 2 McClemons Road, Mount Claremont Scheme Amendment



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Executive Summary

Christ Church Grammar School (CCGS) is proposing the rezoning of the CCGS Mount Claremont Playing Fields (CCGS playing fields) to facilitate redevelopment in the form of residential development and public open space. A Local Planning Scheme amendment proposes the rezoning of Lot 2 McClemons Road Mount Claremont, Town of Cambridge, (herein referred to as 'the site') to facilitate this redevelopment. The proposal will deliver a residential development outcome in a landscape setting including a landscape transition on the eastern (McClemons Road) and southern (Fortview Road) borders of the site to existing development. A key outcome will be the retention of the existing tree canopy throughout the site to facilitate landscape setting and transition to surrounding residential development and Bold Park.

The site is currently zoned 'Urban' under the Metropolitan Region Scheme and 'Parks and Recreation' under the Town of Cambridge *Local Planning Scheme No. 1* (LPS No.1). Emerge Associates was engaged to support the local planning scheme amendment process with this Environmental Assessment Report.

The site is approximately 8.1 hectares (ha) in size and is bounded by McClemons Road to the east, Fortview Road to the south and regional open space to the north and west.

The relevant environmental attributes and values of the site are summarised as follows:

- The site is generally presented on two levels, each containing areas of level playing fields. The site's northern portion's elevation is sloping from 30 m Australian Height Datum (m AHD) to 32 m AHD, and the southern portion's elevation is ranging from 26 m AHD in the south western portion to 24 m AHD in the south eastern portion. The two levels of playing fields are separated by an 8 m embankment to the east of the centre of the site and a 4 m embankment to the west of the centre.
- The site is not known to contain any restricted landforms or unique geological features.
- The site is classified as having no known risk of Acid Sulfate Soils (ASS) occurring within 3 m of natural soil surface across the site.
- Earliest historical aerial images available from 1953 show that the site was mainly undisturbed and comprised of native vegetation likely to have been small to medium size shrubs.
- By 1961 an access road to the site was present and the site was predominantly cleared of vegetation.
- By 1965 the CCGS playing fields were fully established within the site including the pavilion in the center.
- A total of three plant communities were recorded within the site.
- Plant community **EgAcMs** occurs within the north western portion of the site. Plant community **Eg** occurs within the western portion of the site and consists primarily of canopy from trees located outside of the site. The remainder of the site supports **parkland cleared** vegetation which comprises non-native trees and shrubs over a predominantly turf understorey.
- Plant community **EgAcMs** was determined to be in 'good' condition, plant community **Eg** in 'degraded' condition and **parkland cleared** in 'completely degraded' condition.

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- The structure and composition of plant community **Eg** and the majority of the **EgAcMs** plant community within the site represent the Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain TEC (tuart woodland TEC).
- Plant community **EgAcMs** in the north western portion of the site has the potential to support threatened and priority flora species.
- A total of 109 trees were recorded in the site, comprising three local native species, 16 non-native species and stags (dead trees), most trees were assigned a 'high' or 'moderate' retention value.
- Bush Forever site 315 (Swanbourne Bushland, Swanbourne/City Beach) lies to the north and west adjacent to the site.
- Three fauna habitats were identified within the site namely woodland, scattered native and non-native trees and shrubs and turf and bare ground.
- Due to the site's historical degradation caused by the clearing of most native vegetation, the fauna habitat values within the site have been severely compromised.
- No threatened or priority fauna species were recorded within the site during site-specific investigations.
- During the tree assessment survey, seven (7) black cockatoo habitat trees were recorded within the site, but none were determined to contain hollows suitable for black cockatoos. Trees within the site also provide suitable foraging and potential roosting habitat for black cockatoos.
- The current water table at the northern portion of the site is between 30 m and 32 m below surface level with the base of the aquifer 68 m below surface level. The southern portion of the site has a water table of between 24 m and 25 m below surface level, whilst the base of the aquifer is 60 m below the surface level.
- No wetlands occur within or in close vicinity of the site.
- No Registered Aboriginal Heritage Sites or Other Heritage Places have been identified within the site.
- A Bushfire Management Plan (BMP) has been prepared by Emerge to support the scheme amendment. The BMP concludes that the areas of future development within the site are likely to be subject to a 'low' or 'moderate' bushfire hazard.
- The BMP considers that the bushfire hazards within and adjacent to the site and the associated bushfire risk is readily manageable through standard management responses and compliance with acceptable solutions.

The proposed scheme amendment will not result in development that would significantly impact environmental attributes or values, or nearby land uses, and any potential impacts can be managed through the subsequent structure planning and subdivision stages of the planning process. This is considered further in **Section 4** and **Section 5** of this report, but overall:

- Acid Sulfate Soils: As the site is classed as having no known risk of ASS occurring anywhere within the site, ASS is not considered to be an issue requiring further detailed consideration.
- Native Vegetation: The majority of vegetation within the site will be retained in public open space areas including the 0.62 ha of native vegetation within the site's north corner and western boundary comprising the tuart woodland TEC.

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- **Fauna:** The site mainly supports low value fauna habitat; however, the majority of potential foraging habitat and habitat trees for black cockatoos will be retained within public open space areas.
- **Hydrology:** The current hydrological functions of the site will be managed through the application of the Better Urban Water Management Framework (implemented through the standard planning process). This will be detailed in the Local Water Management Strategy (LWMS) prepared to support the proposed Precinct Structure Plan for the site.
- **Bushfire risks:** A bushfire hazard level assessment has been undertaken as part of the Bushfire Management Plan (BMP) (Emerge Associates 2021a) prepared to support the scheme amendment. The BMP has not identified any bushfire hazards that would render the site unsuitable for urban development. Further detailed bushfire risk assessments will be required to support structure planning and subdivision or development stages in accordance with *State Planning Policy 3.7*, the Guidelines and AS 3959 based on the proposed layout and bushfire hazards, existing or proposed.

In conclusion, there are no significant environmental issues or constraints within the site to the extent that it would preclude the site being rezoned to 'Development' under LPS No. 1. The identified environmental values will be appropriately protected through the future planning processes, including structure planning and subdivision/development applications.

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Appendices

Appendix A

Technical Memorandum: Flora, vegetation and Fauna Assessment

Appendix B

Technical Memorandum: Tree Assessment

Appendix C

Preliminary concept plan

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List of Abbreviations

Table A1: Abbreviations – General terms

General terms	
AHIS	Aboriginal Heritage Inquiry System
ANEF	Australian Noise Exposure Forecast
ASS	Acid Sulfate Soil
BSA	Bassendean Soil Association
CBD	Central Business District
DBH	Diameter at Breast Height
EAR	Environmental Assessment Report
ESA	Environmentally Sensitive Area
ha	Hectares
IBRA	Interim Biogeographic Regionalisation of Australia
m AHD	Metres Australian Height Datum
MNES	Matters of National Environmental Significance
PEC	Priority Ecological Community
PDWSA	Public Drinking Water Source Area
TEC	Threatened Ecological Community

Table A2: Abbreviations – Legislation and policies

Legislation and policies	
AH Act	<i>Aboriginal Heritage Act 1972</i>
BAM Act	<i>Biosecurity and Agriculture Management Act 2007</i>
BC Act	<i>Biodiversity Conservation Act 2016</i>
EP Act	<i>Environmental Protection Act 1986</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>

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Table A3: Abbreviations – Organisations

Organisations	
DBCA	Department of Biodiversity Conservation and Attractions
DoW	Department of Water (now known as Department of Water and Environmental Regulation)
DPLH	Department of Planning, Lands and Heritage
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
ToC	Town of Cambridge
WAPC	Western Australian Planning Commission

Table A4: Abbreviations – Planning and building terms

Planning and building terms	
LPS	Local Planning Scheme
PSP	Precinct Structure Plan
MRS	Metropolitan Region Scheme

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1. Introduction

Christ Church Grammar School (CCGS) is proposing the rezoning of the CCGS Mount Claremont Playing Fields (CCGS playing fields) to facilitate redevelopment in the form of residential development and public open space. CCGS playing fields comprises Lot 2 McClemons Road Mount Claremont (herein referred to as 'the site'). The site is located approximately 9 kilometres (km) west of the Perth Central Business District within the Town of Cambridge (ToC). The site is zoned 'Urban' under the Metropolitan Region Scheme (MRS) and 'Parks and recreation' under the ToC *Local Planning Scheme No. 1* (LPS No.1). This Environmental Assessment Report (EAR) has been prepared to support the scheme amendment for the site.

The site is approximately 8.1 hectares (ha) in size and is bounded by McClemons Road to the east, Fortview Road to the south and remnant vegetation associated with Bold Park to the north and west. The location of the site is shown in **Figure 1**.

1.1. Purpose of report

Emerge Associates (Emerge) was engaged to support the local planning scheme amendment process with this Environmental Assessment Report.

This EAR provides a synthesis of information regarding the environmental values and attributes of the site, gathered from a range of information sources, such as local and regional reports, databases, mapping and site-specific investigations.

Emerge has undertaken site-specific surveys to prepare the following documents for the site, which have informed this EAR:

- Flora, Vegetation and Fauna Technical Memorandum (attached as **Appendix A**).
- Tree Assessment Technical Memorandum (attached as **Appendix B**).

The outcomes of these site-specific investigations, as well as the comprehensive desktop review of available information, has provided context for the following within the site:

- Landforms, topography and soils.
- Flora and vegetation.
- Terrestrial fauna.
- Surface and groundwater hydrology.
- Aboriginal and non-indigenous heritage.
- Historical and existing land uses within and surrounding the site.

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2. Existing Environment

2.1. Landform and soils

2.1.1. Topography

The site is generally presented on two levels, each containing areas of level playing fields. The site's northern portion's elevation is sloping from 30 m Australian Height Datum (m AHD) to 32 m AHD, and the southern portion's elevation is ranging from 26 m AHD in the south west to 24 m AHD in the south east (DoW 2008). The two levels of CCGS playing fields are separated by an 8 m embankment to the east of the centre of the site and a 4 m embankment to the west of the centre (MNG 2021).

A steep embankment going up to 46 m AHD exist within the north western corner of the site, with high ground on the northern boundary of the site up to 36 m AHD. The south eastern portion of the playing field (24 m AHD) sits below adjacent McClemons Road and Fortview Road intersection at 30 m AHD. The topography of the site is shown in **Figure 2**.

2.1.2. Landform, soils and geology

Landform and soils influence vegetation types at regional and local scales. The site occurs on the Swan Coastal Plain, which is the geomorphic unit that characterises much of the Perth metropolitan area.

Examinations of broad scale soil mapping places the site within Bassendean soil association (BSA) (Churchward and McArthur 1980). The BSA comprises sand plains with low dunes and occasional swamps, iron or humus podzols and area of complex steep dunes.

The site is not known to contain any restricted landforms or unique geological features.

2.1.3. Acid Sulfate Soils

Acid Sulfate Soils (ASS) is the name commonly given to naturally occurring soils and sediment containing iron sulphide (iron pyrite) materials. In their natural state, ASS are generally present in waterlogged and/or anoxic conditions and do not present any risk to the environment. However, when oxidised, ASS can pose issues through the production of sulphuric acid, which can present a range of risks for the surrounding environment, infrastructure and human health.

The Department of Water and Environmental Regulation (DWER) provides broad-scale mapping indicating areas of potential ASS risk (DWER 2021). A review of the DWER mapping indicates that the entire site is classified as having no known risk of ASS occurring anywhere within the site.

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2.2. Biodiversity and natural assets

2.2.1. Flora and vegetation

Emerge has prepared a flora, vegetation and fauna assessment of the site, presented in a Technical Memorandum, provided in **Appendix A**. Furthermore a tree assessment was undertaken and the results presented in the Technical Memorandum provided in **Appendix B**. This section provides a summary of the key outcomes of the assessments.

2.2.1.1. Historical context

Earliest historical aerial images available from 1953 show that the site was mainly undisturbed and comprised of native vegetation likely to have been small to medium size shrubs. The north western portion was likely cleared of vegetation with the strip of cleared land connecting to the Cottesloe Golf Course to the south of the site as shown in **Plate 1**. By 1961 an access road to the site was present and the site was predominantly cleared of vegetation, this is shown in **Plate 2**. By 1965 the CCGS playing fields were fully established within the site including the pavilion in the center, see **Plate 3**. Some scattered shrubs are visible in the site surrounding the CCGS playing fields, whilst the north western corner of the site was retained un-cleared and vegetation left to regrow. Since circa 1970, tree planting occurred surrounding the boundary of the site and intersecting the site across the middle from north to south and west to east along the central embankment, as shown in **Plate 4**. Other than this planting and subsequent growth, the site has undergone no major changes since 1970.



Plate 1: Historical aerial imagery, 1953

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Plate 2: Historical aerial imagery, 1961



Plate 3: Historical aerial imagery, 1965

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Plate 4: Historical aerial imagery, 1970

2.2.1.2. Regional context

Native vegetation is described and mapped at different scales in order to illustrate patterns in its distribution. At a continental scale the *Interim Biogeographic Regionalisation of Australia* (IBRA) divides the Swan Coastal Plain into two floristic subregions (Environment Australia 2000). The site is contained within the 'SWA02' or Perth subregion, which is characterised as mainly containing *Banksia* low woodland on leached sands with *Melaleuca* swamps where ill-drained; and woodland of *Eucalyptus gomphocephala* (tuart), *E. marginata* (jarrah) and *Corymbia calophylla* (marri) on less leached soils (Beard 1990). This subregion is recognised as a biodiversity hotspot and contains a wide variety of endemic flora and vegetation types.

Variations in native vegetation within the site can be further classified based on regional vegetation associations. Heddle *et al.* (1980) mapping shows the site as comprising the 'Cottesloe -central and South' complex, which is described as mosaic of woodland of *Eucalyptus gomphocephala* and open forest *Eucalyptus gomphocephala* - *Eucalyptus marginata* - *Corymbia calophylla*; closed heath on the limestone outcrops. This complex was determined to have 32.16% remaining on the Swan Coastal Plain as of 2019, of which 10.01% is under formal protection (Government of Western Australia 2019).

Additionally portions of the site mapped as comprising the 'Karrakatta- Central and South' complex, which is described as open forest of *Eucalyptus gomphocephala* - *Eucalyptus marginata* - *Corymbia calophylla*. This complex was determined to have 23.49% remaining on the Swan Coastal Plain, of which 4.61% is under formal protection. However, site investigations found that the associated vegetation on the site is not representative of this complex due to its degraded condition as discussed further in **section 2.2.1.5**.

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The EPA's *Environmental Guidance for Planning and Development Studies* (EPA 2008) states that the loss of biodiversity caused by habitat fragmentation is significantly greater once a habitat type falls below 30% of its original extent. The Guidance also references the biodiversity conservation national objective and target of retaining 30% of the original extent of each vegetation complex, and the states' minimum target of 10% for constrained urban areas such as the Swan Coastal Plain.

The percentage remaining of the 'Cottesloe -central and South' complex is above the 30% retention objective and the 10% minimum retention target for the Swan Coastal Plain.

2.2.1.3. Site specific investigations

An ecologist from Emerge visited the site on 18 May 2021 to conduct the flora, vegetation and fauna assessment (Emerge Associates 2021b). The suitability of habitat within the site for conservation significant flora species and plant communities was assessed. The site was traversed on foot and the composition of vegetation was recorded. Furthermore, a representative flora species list was compiled that focussed on native species and include a limited selection of non-native species present. The vegetation condition was mapped across the site using the Keighery (1994) scale.

2.2.1.4. Plant communities

Based on the findings from the survey, three plant communities were recorded within the site, as described below in **Table 1** and shown in **Figure 3**, with representative photographs of each community provided in **Plate 5** to **Plate 7**.

Table 1: Description and extent of plant communities identified within the site

Plant community	Description	Area (ha)
Eg	Open forest of <i>Eucalyptus gomphocephala</i> (tuart) over non-native grasses and weeds.	0.13
EgAcMs	Woodland of scattered <i>Eucalyptus gomphocephala</i> and planted <i>Eucalyptus</i> species, over shrubland of <i>Acacia cyclops</i> , <i>Acanthocarpus preissii</i> , <i>Melaleuca systema</i> and scattered <i>Olearia axillaris</i> or grassland comprised of non-native species.	0.57
Parkland cleared	Scattered planted trees including <i>Agonis flexuosa</i> and <i>Eucalyptus camaldulensis</i> with occasional native trees such as <i>Eucalyptus gomphocephala</i> over non-native turf.	7.40

Plant community **EgAcMs** occurs within the north western portion of the site. Plant community **Eg** occurs within the western portion of the site and consists primarily of canopy from trees located outside of the site. The remainder of the site supports **parkland cleared** vegetation which comprises non-native trees and shrubs over a predominantly turf understorey.

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*Plate 5: Plant community **Eg** in 'degraded' condition*



*Plate 6: Plant community **EgAcMs** in 'good' condition*

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Plate 7: Plant community **parkland cleared** in 'completely degraded' condition

2.2.1.5. Vegetation condition

Emerge (2021) determined the condition of vegetation within the site using the methods from Keighery (1994).

Plant community **EgAcMs** comprises the most intact native vegetation, covering 7.04% of the site, in the north western portion of the site. This vegetation community was determined to be in 'good' condition as it comprises a canopy layer of predominantly native species over an understorey of native and non-native species. The native species diversity and cover was moderate to low and evidence of disturbance was present in form of bare ground and weeds. Additionally, the **EgAcMs** vegetation is contiguous with native vegetation adjacent to the site associated with Bold Park.

Plant community **Eg**, comprised on a canopy layer of native trees over non-native undertstorey covering 1.6% of the site, was identified as being in 'degraded' condition as the vegetation structure has been severely impacted by disturbance.

Parkland cleared, by far the most dominant vegetation community (covering 91.4% of the site) given the current land use of the site as playing fields, was mapped as being in 'completely degraded' condition as it is highly disturbed and dominated by non-native species.

The extent of vegetation by condition category is detailed in **Table 2** and shown in **Figure 4**.

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Table 2: Extent of vegetation condition categories within the site

Condition category (Keighery 1994)	Size (ha)
Pristine	0
Excellent	0
Very good	0
Very good – good	0
Good	0.57
Good – degraded	0
Degraded	0.13
Completely degraded	7.40

2.2.1.6. Threatened and Priority Ecological Communities.

Threatened Ecological Communities (TECs) are ecological communities that are recognised as rare or under threat and therefore warrant special protection.

Selected TECs are afforded statutory protection at a Commonwealth level under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). TECs listed under the EPBC Act are categorised as either ‘critically endangered’, ‘endangered’ or ‘vulnerable’.

Within Western Australia, state-listed TECs are statutorily protected through the *Biodiversity Conservation Act 2016* (BC Act). While no TECs are currently listed for protection under the BC Act, they will likely be listed at a future date, and then require Ministerial authorisation where a proposed development is likely to disturbed or modify an identified TEC.

An ecological community under consideration for listing as a TEC in Western Australia, but which does not yet meet survey criteria or has not been adequately defined, or which is rare but not currently threatened, is referred to as a ‘Priority Ecological Community’ (PEC). Whilst PECs are not afforded statutory protection in Western Australia, they are considered during the approval process.

A search was conducted for TEC and PEC that may occur or have been recorded within a 10 km radius of the site using NatureMap (DBCA 2021) and the *Protected Matters search Tool* (DAWE 2021).

The database search result identified 39 flora species and two vegetation communities of conservation significance within 10 km of the site.

Areas of native vegetation potentially representing a TEC were assessed against key diagnostic characteristics and thresholds relating to size and vegetation condition provided in the following document:

- *Approved Conservation Advice (incorporating listing advice) for the tuart (Eucalyptus gomphocephala) woodlands and forests of the Swan Coastal Plain TEC criteria* (adopted from (DoEE 2019))

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The structure and composition of plant community **Eg** and the majority of the **EgAcMs** plant community within the site represent the Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain TEC (tuart woodland TEC) as outlined in **Table 3** and shown in **Figure 3**. The tuart woodland TEC is listed as 'critically endangered' under the EPBC Act and is also listed as a PEC (P3) in WA. This TEC/PEC occurs within the western portion of the site and extends over 0.62 ha. The patches of the tuart woodland TEC within the site are part of a larger area of tuart woodland TEC that exists outside of the site to the west and north.

Table 3: Assessment of site conditions against the tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain TEC criteria (adopted from (DoEE 2019))

Criteria	Requirements for meeting criteria	Site implications
1. Must meet key diagnostic characteristics	<ul style="list-style-type: none"> • Located in appropriate bioregion and landform. • At least 2 living established <i>E. gomphocephala</i> trees with DBH\geq 15cm present in canopy layer and with <60 m between the outer edges of canopies[^] • Vegetation structure is a woodland, forest, open forest, open woodland, or mallee (various forms). 	<ul style="list-style-type: none"> • Site is located in appropriate bioregion and landform. • The areas of EgAcMs and Eg vegetation each contain more than two living established <i>E. gomphocephala</i> (tuart) trees with DBH\geq 15cm present in canopy layer and with <60 m between the outer edges of canopies. • Vegetation within the EgAcMs patch comprises a woodland structure. The vegetation within the Eg patch contains an open forest structure. • The central southern portion of parkland cleared vegetation contains more than two living established <i>E. gomphocephala</i> (tuart) trees with DBH\geq 15cm present in canopy layer and with <60 m between the outer edges of canopies.
2. Must meet size threshold	<ul style="list-style-type: none"> • A patch must be larger than 0.5 ha[#] 	<ul style="list-style-type: none"> • The EgAcMs patch within the site is > 0.5 ha. • The EgAcMs vegetation is connected to tuart trees outside of the site to the north which would comprise part of the patch. • The Eg vegetation within the site is less than 0.5 ha and does not independently meet this criterion. However, the Eg vegetation is contiguous with adjacent tuart trees outside of the site and the overall combined patch size is > 0.5 ha.
3. Must meet condition thresholds	<ul style="list-style-type: none"> • Patches >5 ha: no condition threshold • Patches \geq0.5 – <2 ha: 'very high' or 'high' condition[†] • Patches \geq2 – \leq5 ha: 'very high', 'high' or 'moderate' condition[†] 	<ul style="list-style-type: none"> • Both the EgAcMs and Eg patches are over 5 ha and are not subject to condition thresholds (including the adjacent tuart trees outside of the site).

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Criteria	Requirements for meeting criteria	Site implications
4. Must incorporate surrounding context	<ul style="list-style-type: none"> • Breaks (e.g. tracks, cleared areas) < 30 m do not separate vegetation into separate patches • The site should be thoroughly sampled in the appropriate season. • Survey timing should be appropriate. • Surrounding environment should be considered (e.g. connectivity, conservation values, fauna habitat) 	<ul style="list-style-type: none"> • Breaks such as tracks exist within the patch but do not separate the patch. • The survey timing was sufficient to determine that the patch represents the TEC. • The majority of the patch lies outside of the site. • Areas of managed turf and gardens were excluded from the TEC patch as per the conservation advice.
Result	The site supports 0.62 ha of the tuart (<i>Eucalyptus gomphocephala</i>) woodlands and forests of the Swan Coastal Plain TEC.	

^Includes dead trees. Where species of dead tree is unclear it is assumed to be *E. gomphocephala* if its canopy is within 60 m of an identified *E. gomphocephala* tree. #Note that a patch comprises a 30 m buffer around the canopy of each *E. gomphocephala* canopy tree, may extend beyond a lot boundary and may include areas of bare ground, waterbodies and hardscape. †Using the condition scale provided in (DoEE 2019).

The remainder of the site is not identified as being suitable habitat for any other TECS or PECS.

2.2.1.7. Weeds

The term 'weed' can refer to any plant that requires some form of action to reduce its effect on the economy, the environment, human health and amenity. Many non-native flora species and some native species are considered to be weeds. A particularly invasive or detrimental weed species may be listed as a 'declared pest' pursuant to the state *Biosecurity and Agriculture Management Act 2007* (BAM Act), indicating that it warrants special management to limit its spread. At a National level, the Australian government has compiled a list of 32 Weeds of National Significance (WoNS) (DoEE 2019c).

Due to the site's historical disturbance and current land use, the weed cover within the site was widespread. Plant community **parkland cleared** mapped as in 'completely degraded' condition in particular was determined to have a weed cover of greater than 70%.

2.2.1.8. Significant flora

Certain flora species that are considered to be rare or under threat warrant special protection under Commonwealth and/or State legislation. At a Commonwealth level, flora species may be listed as 'threatened' pursuant to the EPBC Act. At a State level, plant species may also be classed as 'threatened' under the BC Act. Species which are potentially rare or threatened; meet the criteria for near threatened; or have recently been removed from the threatened species list are classed as 'priority' flora species. However, priority flora species are not afforded statutory protection.

Plant community **EgAcMs** in the north western portion of the site has the potential to support threatened and priority flora species. A targeted survey during the appropriate season would be required to confirm whether any threatened species of priority flora species occur. This survey will be undertaken at the detailed planning stage and influence the design if necessary.

The remainder of the site does not support suitable habitat for threatened or priority flora.

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2.2.1.9. Trees

A total of 109 trees were recorded in the site, comprising three local native species, 16 non-native species (i.e. native to other parts of Australia or other countries) and stags (dead trees). A summary of the trees recorded within the site is provided in Table 2 of **Appendix B**.

Most of the trees were assigned a 'high' or 'moderate' retention value. A summary of the retention values of trees within the site is provided in **Table 4**. The retention value assigned to the trees is shown in **Figure 6**.

Table 4: Retention value of trees within site

Retention value	Number of individuals
High [^]	45
Moderate	48
Low	16
Total	109

[^]includes seven trees which qualify as black cockatoo habitat trees (without hollows).

2.2.2. Bush Forever

The Government of Western Australia's Bush Forever Policy (Government of WA 2000) is a strategic plan for conserving regionally significant bushland within the Swan Coastal Plain portion of the Perth Metropolitan Region. The objective of Bush Forever is to protect comprehensive representations of all original vegetation complexes by targeting a minimum of 10% of each for protection (Government of WA 2000). Bush Forever sites are representative of regional ecosystems and habitat and have a key role in the conservation of Perth's biodiversity.

Bush Forever site 315 (Swanbourne Bushland, Swanbourne/City Beach) lies to the north and west, adjacent to the site, this is shown in **Figure 2**. Additionally, Bush Forever site 312 is located approximately 0.18 km to the north of the site.

2.2.3. Ecological linkages

Ecological linkages are linear landscape elements that allow the movement of fauna, flora and genetic material between areas of remnant habitat. The Perth Biodiversity Project, supported by the Western Australia Local Government Association (WALGA), have identified and mapped regional ecological linkages within the Perth Metropolitan Region (WALGA and PBP 2004).

There are no mapped ecological linkages on the site.

2.2.4. Environmentally Sensitive Areas

'Environmentally sensitive areas' (ESAs) are prescribed under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* and have been identified to protect native vegetation values

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of areas surrounding values such as significant wetlands, threatened flora, threatened communities and *Bush Forever* sites.

There are no ESAs present with the site; however, there are two ESAs adjacent to the north and west of the site associated with Bush Forever site 315.

2.2.5.Fauna

2.2.5.1. Site specific surveys and investigations

An ecologist from Emerge visited the site on 18 May 2021 and undertook a fauna field survey. During the survey transects were traversed across the site, during the day, and the characteristics of fauna habitat and presence of fauna species was recorded. Furthermore, microhabitats such as logs, rocks and leaf litter were investigated and secondary evidence of species presence such as tracks, scats, skeletal remains, foraging evidence or calls were also noted. The Flora, Vegetation and fauna Assessment Technical Memorandum is attached in **Appendix A**. The survey was furthermore supported by a tree assessment conducted within the site to identify potential black cockatoo breeding trees, with the report attached as **Appendix B**.

2.2.5.2. Fauna habitat

Due to the site's historical degradation caused by the clearing of most native vegetation, the fauna habitat values within the site have been severely compromised.

Overall the native vegetation within the north western corner of the site provides the most value to native fauna. This area supports a range of habitat types and is contiguous to other patches of vegetation to the north and west of the site. The remainder of the site provides low value fauna habitat due to a lack of remnant native understorey vegetation. Notwithstanding this, the native and non-native trees within the site provide suitable habitat for bird species.

Three fauna habitats were identified within the site outlined in **Table 5** below and shown in **Figure 5**.

Table 5: Fauna habitats identified within the site

Fauna habitat	Description	Area (ha)
Woodland	Woodland of scattered <i>Eucalyptus gomphocephala</i> and planted <i>Eucalyptus</i> species, over shrubland of <i>Acacia cyclops</i> , <i>Acanthocarpus preissii</i> , <i>Melaleuca systema</i> and scattered <i>Olearia axillaris</i> or grassland comprised of non-native species.	0.57
Scattered native and non-native trees and shrubs	Scattered native and planted non-native trees and shrubs.	1.11
Turf and bare ground	Predominantly turf and bare ground.	6.42

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2.2.5.3. Vertebrate species of conservation significance

Certain fauna species that are considered to be rare or under threat warrant protection under state and/or federal legislation. At a federal level, fauna species may be listed as 'threatened' pursuant to the EPBC Act. At a state level, fauna species can be classed as 'threatened' under the BC Act. In addition to this, DBCA maintains a list of priority fauna species which, while not considered threatened under the BC Act and therefore not protected directly, elicit some concern over their long-term survival and hence, are considered during state approval processes.

No threatened or priority fauna species were recorded within the site during site-specific investigations.

The fauna assessment (**Appendix A**) and tree assessment (**Appendix B**) confirmed seven black cockatoo habitat trees within the site, none of which contain suitable hollows for breeding. Consequently, black cockatoo breeding could not occur and no survey for breeding is required. The site provides foraging and roosting habitat that could be used by black cockatoos; however, Emerge does not recommend completing additional 'targeted' black cockatoo assessments as it is unlikely that further information would be obtained on black cockatoo habitat values within the site. The locations of the habitat trees are shown in **Figure 6**.

A total of 97 fauna species of conservation significance have the potential to occur within 10 km of the site. Fauna species that may potentially occur within the site, predominantly in the woodland habitat (plant community **EgAcMs**), are likely to be birds that may only use the site intermittently if at all, including black cockatoo species due to potential foraging habitat present at the site, albeit this is minimal.

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2.3. Hydrology

2.3.1. Groundwater

Information on the regional groundwater resources obtained from the Department of Water (DoW) Water Register (DoW 2015) indicates that the site is underlain by a multi-layered aquifer system comprised of the following resources:

- Perth - Superficial Swan (unconfined).
- Perth - Yarragadee North (confined).

A review of the regional groundwater contours shown in the *Perth Groundwater Map* (DWER 2021) indicates that the current water table at the northern portion of the site is between 30 m and 32 m below surface level with the base of the aquifer 68 m below surface level. The southern portion of the site has a water table of between 24 m and 25 m below surface level, whilst the base of the aquifer is 60 m below the surface level.

2.3.2. Surface water

The *Hydrography Linear* dataset (DWER 2020) does not show any waterways, drains or flow paths within the site.

A stormwater drainage network runs beneath McClemons Road and Fortview Road, along the eastern and southern sides of the site boundary, collecting runoff from the road. As the site sits within the low-point of the wider catchment area, a small portion of the overland flow from McClemons Road reserve discharges to the site. Runoff collected in the pit and pipe network along Fortview Road is conveyed towards the end of the cul-de-sac and discharges to the adjacent bush land area via bubble-up pits.

2.3.3. Wetlands

Wetlands include “areas of seasonally, intermittently or permanently waterlogged soils or inundated land, whether natural or otherwise, fresh and saline, e.g. waterlogged soils, ponds, billabongs, lakes, swamps, tidal flats, estuaries, rivers and their tributaries” (Wetlands Advisory Committee 1977). Wetlands can further be recognised by the presence of vegetation associated with waterlogging or the presence of hydric soils such as peat, peaty sand or carbonate mud (Hill *et al.* 1996).

Wetlands of national or international significance may be afforded special protection under Commonwealth or international agreements. The following lists of important wetlands were checked as part of this assessment:

- *Ramsar List of Wetlands of International Importance* (DBCA 2017)
- *A Directory of Important Wetlands in Australia* (DBCA 2018a).

No Ramsar or listed ‘important wetlands’ are located within the site.

The Department of Biodiversity Conservation and Attractions (DBCA) maintains the *Geomorphic Wetlands of the Swan Coastal Plain* dataset (DBCA 2018b), which categorises geomorphic wetland features into specific management categories to guide land use and conservation.

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A review of the dataset indicated that no wetland features occur within or near the site.

2.3.4. Public Drinking Water Source Areas

Public Drinking Water Source Areas (PDWSAs) are proclaimed by DWER to protect identified drinking water sources, including surface water and groundwater sources (DoW 2009). They are proclaimed under the *Metropolitan Water Supply, Sewerage and Drainage Act 1909* or the *Country Areas Water Supply Act 1947* as Water Reserves, Catchment Areas or Underground Water Pollution Control Areas. PDWSAs supply drinking water to local populations and can be vulnerable to contamination from a range of land uses. Once an area is identified as a PDWSA, consideration needs to be given to the intended land uses and associated activities within the area, to ensure that they are appropriate in meeting the PDWSA's water protection quality objectives.

Publicly available PDWSA mapping (DoW 2015) indicates that the site is not located within or adjacent to any declared PDWSA.

2.4. Heritage

2.4.1. Indigenous heritage

The Aboriginal Heritage Inquiry System (AHIS) is maintained pursuant to Section 38 of the *Aboriginal Heritage Act 1972* by the Department of Planning, Lands and Heritage (DPLH) and contains information on Registered Aboriginal Heritage Sites and Other Heritage Places throughout Western Australia.

In accordance with the *Aboriginal Heritage Due Diligence Guidelines* (DAA 2013), a search of the AHIS online database was undertaken. No Registered Aboriginal Heritage Sites or Other Heritage Places have been identified within the site. A registered Aboriginal heritage site adjacent to the west and north of the site, Bold Park (ID 20178), is associated as a historical, mythological and a camp hunting place.

2.4.2. Non-Indigenous heritage

A desktop search of the Australian Heritage Database (Department of the Environment 2019), the State Heritage Office database (Heritage Council 2019) indicated there are no registered heritage sites located within, or in proximity to the site.

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2.5. Bushfire

Portions in the north and west of the site are within a 'bushfire prone area' as shown on the state-wide *Map of Bush Fire Prone Areas* prepared by the Office of Bushfire Risk Management (OBRM 2019), see **Plate 8**. Strategic planning proposals, including scheme amendments, require a bushfire hazard level assessment under the *Guidelines for Planning in Bushfire Prone Areas Version 1.3* (the Guidelines) (WAPC and DFES 2017).

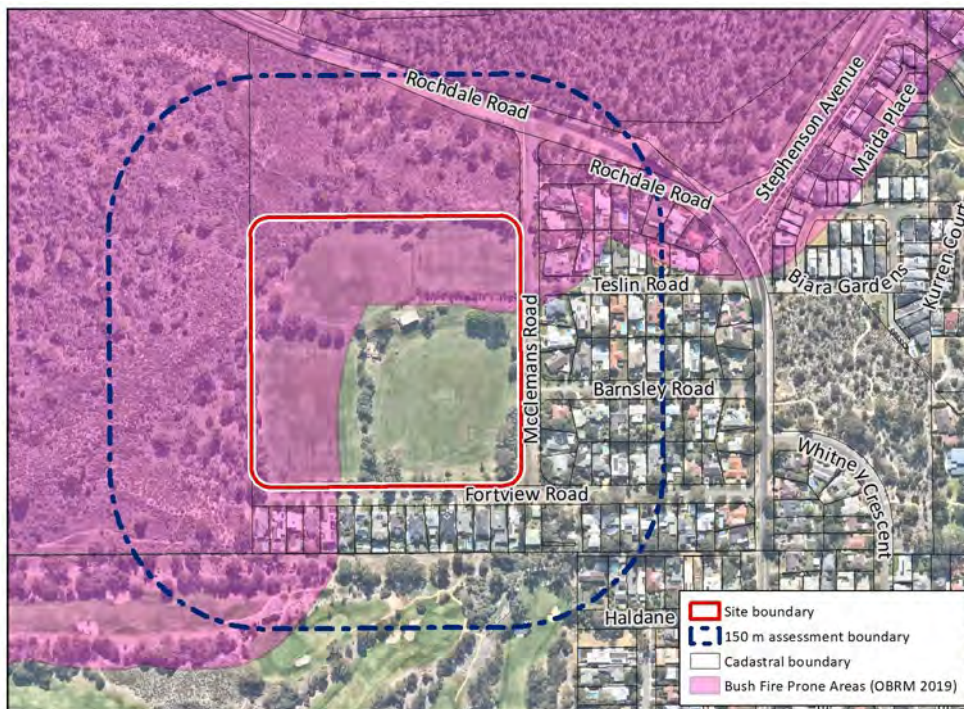


Plate 8: Bushfire prone areas

A Bushfire Management Plan (BMP) has been prepared by Emerge to support the LPS amendment. The BMP includes an assessment of vegetation within and surrounding the site to determine applicable bushfire hazards, in accordance with *Australian Standard 3959:2018 Construction of buildings in bushfire-prone areas* (AS 3959), and an assessment of the bushfire protection criteria outlined in the Guidelines. All areas within the site and surrounding 150 m have been assessed for the presence of bushfire prone vegetation to determine the associated bushfire hazard rating levels and bushfire risk.

The majority of the on-site vegetation is proposed to be retained within Public Open Space (POS) areas due to its environmental value. Vegetation in the north-west of the site and along the western boundary of the site was identified as forest and shrubland and deemed an 'extreme' bushfire hazard as this vegetation will not be modified as part of any future subdivision and will therefore remain a bushfire risk to the site. Additionally, as required under the Guidelines, any areas within 100 m of 'extreme' hazards are deemed as a 'moderate' bushfire hazard to reflect the potential increased risk. Whilst the site has been predominantly historically cleared and vegetation within the site is characterised as 'low threat' vegetation associated with irrigated and managed turf and gardens, the vegetation within some portions of the site remains a 'moderate' bushfire hazard according to the Guidelines. Other surrounding vegetation to the east and south, identified within 150 m of the site,

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associated with residential properties, gardens and non-vegetated areas received 'low' bushfire hazard ratings.

The BMP concludes that the areas of future development within the site are likely to be subject to a 'low' or 'moderate' bushfire hazard.

The BMP considers that the bushfire hazards within and adjacent to the site and the associated bushfire risk is readily manageable through standard management responses and compliance with acceptable solutions outlined in the Guidelines. Therefore, the BMP has determined that the LPS amendment is consistent with the aim and objectives of *State Planning Policy 3.7* (WAPC 2015) and associated guidelines.

2.6. Other land use considerations

2.6.1. Historic and existing land uses

As discussed in **Section 2.2.1.1**, the site was predominantly cleared by 1961. Between 1965 and 1970 the site has been in use as playing fields with the majority of the site cleared. The north western corner was left undisturbed to date based on historical aerial photography (Landgate 2021). The site has had no other significant known land uses to this date.

2.6.2. Potential site contamination

A review of the DWER *Contaminated Sites Database* indicates that the site is not registered as a contaminated site pursuant to the *Contaminated Sites Act 2003*.

2.6.3. Surrounding land uses

The site is generally located within a developed area bound by residential development to the east and south, remnant native vegetation associated with Bush Forever site 315 to the north and west of the site. Cottesloe Golf Course is located approximately 0.12 km to the south of the site. The site is bound by two major roads, Rochdale Road 0.15 km to the north and east, and West Coast Highway 0.5 km to the west.

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3. Planning framework and proposal

3.1. Proposed Local Planning Scheme Amendment

This EAR has been prepared to provide the proponent with an assessment of the environmental factors identified within the site, to support a local planning scheme amendment. The proposed scheme amendment will seek to rezone the site from 'Parks and Recreation' to 'Development' under the current ToC *Local Planning Scheme No.1*.

Once the scheme amendment request has been received by the responsible authority, it will be referred to the EPA under Section 48A of the EP Act, prior to being initiated. The EPA will then decide on whether the proposed scheme amendment requires formal assessment. The EPA may also provide informal advice on the proposed scheme amendment without formally assessing the scheme or determine that the proposed amendment is not capable of being environmentally acceptable. The environmental factors and objectives considered by the EPA are discussed further in **section 4**.

3.2. Future planning approvals process

3.2.1. Precinct Structure plan

It is anticipated that, once the scheme amendment is approved, there will be a requirement for a Precinct Structure Plan (PSP) to be prepared for the site to provide a framework for the provision of future land use, subdivision, and development within the site. The PSP will assist in the coordination and provision of utility networks, transport networks, public open space, urban water management, development standards and other infrastructure development. A preliminary concept plan that has sought to retain the majority of the native vegetation and existing trees within the site is provided in **Appendix C**. The preliminary concept identifies the following potential land uses within the site:

- Development of 71 residential Lots comprising an area of approximately 3.5 ha.
- Public open space comprising an area of approximately 2.9 ha, encompassing areas for active recreation and drainage.
- Landscaped green spaces to act as buffers between old and new residential areas along McClemons Road and Fortview Road.
- An integrated local road network with two crossovers to the site from McClemons Road and one from Fortview Road.

The environmental features of the site will be assessed and managed appropriately through the PSP preparation and design process.

3.2.2. Subdivision and development

Following approval of a PSP, the area within the PSP will be subdivided and developed for urban land uses. The subdivision application process will need to address the requirements of any relevant local scheme provisions or other requirements included within the approved PSP. Once issued, subdivision approval/s would include a range of conditions, some of which may relate to environmental matters, which will need to be implemented as part of the subdivision and development process, before titles

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for subdivided Lots are issued. Other components of development may be progressed through development approval, for example forward bulk earthworks or other non-subdivision works.

It is anticipated that all environmental impacts associated with implementation of urban subdivision and development works across the site will be considered by the EPA, under Section 48A of the EP Act, during its review of the ToC LPS No. 1 amendment.

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3.3. Future environmental approvals

3.3.1.State process

The clearing of any native vegetation to enable approved subdivision works to proceed is exempt from the need for a Native Vegetation Clearing Permit pursuant to Part V of the EP Act. Any clearing of native vegetation not related to subdivision works will require a permit. However, it is not anticipated that any native vegetation will need to be cleared to enable the redevelopment of the site.

3.3.2.Federal process

The site contains habitat trees for black cockatoo species which are listed as Matters of National Environmental Significance (MNES) in accordance with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Additionally, the tuart woodland TEC within portions of the site is listed as 'critically endangered' and qualifies as a MNES under the EPBC Act. Any proposed action which is considered likely to result in a 'significant impact' upon a MNES should be referred to the Department of Agriculture, Water and the Environment for determination as to whether the action requires an EPBC Act approval.

Due the limited extent of black cockatoo foraging habitat, the absence of any trees with suitable black cockatoo breeding hollows on the site and it not being necessary to clear native vegetation within the tuart woodland TEC, future development is highly unlikely to significantly impact any MNES.

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4. Environmental Factors Considered by the EPA

The EPA identifies a number of environmental principles, factors and objectives within the *Statement of Environmental Principles, Factors and Objectives* (EPA 2020a) which are used to guide the determination of significant environmental impacts and whether impacts can be appropriately mitigated or managed. An assessment of the proposed scheme amendment (and subsequent development of the site) against the relevant environmental factors has been provided in **Table 6**, as well as consideration of whether the objective for each factor is likely to be met.

Overall, the consideration of the EPA factors and objectives indicates that the proposed scheme amendment has the potential to result in development outcomes that support the EPA's objectives and provide opportunities for improvements in urban water management.

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Table 6: Summary of EPA environmental factors and objectives relevant to the proposed future land use

Environmental factor	EPA objective	Can the proposed future development meet the EPA objective?
Flora and vegetation	To protect flora and vegetation so that biological diversity and ecological integrity are maintained.	<p>The vast majority of the site is comprised of planted and non-native vegetation over turf. Although vegetation communities in the north western and western portion of the site represent the tuart woodland TEC, it is the proponent's intention, subject to the approval of future development plans, to retain the entirety of this vegetation. Urban development will predominantly be focused on the areas that have been historically cleared and comprise the present CCGS playing fields.</p> <p>As part of future construction, a Construction and Environment Management Plan (CEMP) will be prepared to guide the management of the environmental values during work. The CEMP will include measures to ensure that weeds and dieback are not brought into the site, including the washing down of vehicles and bringing in clean fill and mulch.</p> <p>As the rezoning of the site to 'Development' will not give rise to significant clearing of native vegetation, this objective can be met.</p>
Landforms	To maintain the variety and integrity of distinctive physical landforms so that environmental values are protected.	<p>The site is not known to contain any restricted landforms or unique geological features.</p> <p>This objective can be met.</p>
Terrestrial environmental quality	To maintain the quality of land and soils so that environmental values are protected.	<p>This objective relates to managing potential contaminants and pathways leading to soil quality being impacted, as well as erosion, ASS and salinity.</p> <p>The regional ASS risk mapping indicates that there is no known risk of ASS occurring anywhere within the site. Additionally, there are no contaminated sites identified within the site, nor are there any historic land uses which are likely to cause contamination within the site.</p> <p>Furthermore, any risk of land degradation can be mitigated through controls applied during clearing and construction such as dust suppression, mulching, erosion control etc.</p> <p>This objective can be met.</p>

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Environmental factor	EPA objective	Can the proposed future development meet the EPA objective?
Terrestrial fauna	To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.	<p>The vast majority of the site supports turf and bare ground which provides low habitat value for native fauna. The woodland habitat provides the highest relative value. This habitat extends only over a small portion of the site (7%) and is part of a contiguous patch of remnant vegetation adjacent to the north and west of the site. The remainder of the site supports scattered native and non-native trees and shrubs on predominantly turf and bare ground providing low habitat value.</p> <p>A total of seven potential black cockatoo habitat trees were recorded within the site with none containing hollows suitable for breeding. Additionally, native and non-native trees within the site provide potential foraging and roosting habitat for black cockatoo species.</p> <p>It is the proponent's intention, subject to the approval of future development plans, to retain all of the high value vegetation associated with the woodland fauna habitat. Future development will predominantly be focused on areas of turf and bare ground, with existing trees retained within public open space (POS) areas where possible. The creation of POS areas will likely provide additional fauna habitat subject to future landscaping designs.</p> <p>As the rezoning of the site to 'Development' will not give rise to the significant clearing of conservation significant fauna habitat, this objective can be met.</p>
Inland waters	To maintain the hydrological regimes of groundwater and surface water so that environmental values are protected.	<p>No natural surface water features or wetlands have been identified within or adjacent to the site. Groundwater and surface water (generated as runoff from the proposed roads) will be managed in accordance with the endorsed <i>Better Urban Water Management Framework</i>, (including Water Sensitive Urban Design principles).</p> <p>A primary objective in the stormwater management strategy is to maintain or improve pre-development hydrology. Within lots, the small rainfall event (first 15mm) is to be retained and treated within the lot or as close to the source as possible. It is expected the high permeability of the sandy soil beneath the site will have the capacity to infiltrate the first 15 mm of rain within the lots. Furthermore, if additional storage is required within lots this could potentially be achieved by the use of soakwells which will allow runoff to infiltrate into the underlying soils and ultimately to groundwater. This infiltration of runoff through the underlying soil will provide treatment through absorption of nutrients to sand particles. Other lot scale storage systems may also be considered and will be outlined in future Local Water Management Strategies and Urban Water Management Plans.</p> <p>The use of fertilisers associated with the turf ovals currently within the site provide a source of nutrient loads to the underlying groundwater system and downstream environment and it is highly likely that the proposed residential development will result in a significant reduction in fertilisers ultimately reducing the total nutrient loading to groundwater.</p> <p>The adoption of Water Sensitive Urban Design principles and Urban Water Management Plans for any future development means that the existing hydrological regimes at the site can be either maintained or improved upon; therefore, this objective can be met.</p>
Air quality	To maintain air quality and minimise emissions so that environmental values are protected.	As the rezoning of the site to 'Development' will not give rise to significant air pollution emissions, therefore this objective can be met.

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Environmental factor	EPA objective	Can the proposed future development meet the EPA objective?
Greenhouse Gas Emissions	To reduce net greenhouse gas emissions in order to minimise the risk of environmental harm associated with climate change.	<p>The proposed urban development of the site will progress in accordance with the requirements of <i>State Planning Policy 7.0 Design of the Built Environment</i> (DPLH 2019), which promotes well-designed homes that minimise energy use and in turn the greenhouse gas emissions associated with fossil fuel powered electricity generation.</p> <p>The proposed urban development does not involve the clearing of vegetation that currently acts as a carbon sink, and the associated earthwork will not disturb soils that have sequestered carbon dioxide.</p> <p>The proposed future development presents a range of opportunities to reduce greenhouse gas emissions, when compared to traditional housing designs and structure plan layouts; therefore, this objective can be met.</p>
Social Surroundings	To protect social surroundings from significant harm.	<p>This objective is relevant to aesthetic, cultural, economic and/or social values which may be impacted by the proposed land use. The site is located within an urban context and the proposed land use is therefore consistent with the surroundings. There are no significant cultural heritage sites within or adjacent to the site that would be impacted.</p> <p>Although the site currently comprises open space, it is in private ownership meaning that access can be constrained. The proposed urban development of the site will incorporate areas of public open space which will be accessible at all times and appropriately maintained. As part of the detailed design of the urban form, landscaping treatments will be determined to align with the existing landscape and complement the future urban development.</p> <p>The proposed future development is unlikely to be subject to any noise from surrounding land uses as no major road is situated in close proximity to the site.</p> <p>On this basis, the future redevelopment of the site for urban land uses will not significantly impact the social surrounding; therefore, this objective can be met.</p>
Human health	To protect human health from significant harm.	<p>The proposed urban redevelopment of the site presents the opportunity to provide active areas of public open space containing play spaces and exercise equipment, which will provide healthy life style opportunities to existing local and future residents.</p> <p>The only potential risk to human health arising from residential development is the introduction of increased numbers of motor vehicles on the roads within and surrounding the development. The design of the future road network will be compliant with the requirement of the Western Australian government's Liveable Neighbourhoods Policy (WAPC 2009) and supported by Traffic Impact Assessments; meaning that any risks will be managed to acceptable levels.</p> <p>Through the provision of open space and the appropriate management of motor vehicle movement this objective can be met.</p>

5. Environmental Assessment and Future Environmental Management Framework

Table 7 below summarises the environmental values that have been considered for the site and outlines the values that will require further specific consideration as part of the future development of the site, as well as an outline of the future management considerations.

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Table 7: Summary of environmental value, consideration of potential impacts and future management requirements

Environmental Value	Relevant Consideration and potential for impact	Applicable Legislation/ policy and/or guidelines	Management considerations/requirements for future development
Acid Sulfate Soils (ASS)	A review of the DWER mapping indicates that the entire site is classified as having no known risk of ASS occurring anywhere within the site.	<ul style="list-style-type: none"> • <i>Environmental Protection Act 1986</i> • <i>Acid Sulfate Soils Planning Guidelines</i> (WAPC 2008a) • <i>Identification and investigations of acid sulfate soils and acidic landscapes</i> (DEC 2013) • <i>SPP2 Environment and Natural Resources Policy (2003)</i> 	ASS is not considered to pose a constraint to the proposed urban development of the site. Nevertheless, any future ASS considerations can be identified and suitably managed as part of the future construction in accordance with the WAPC's <i>Acid Sulfate Soils Planning Guidelines</i> (2008).
Flora and vegetation	<p>Native vegetation located within the site is mapped in varying condition ranging from 'good' in the north western corner of the site to 'completely degraded' in the remainder of the site.</p> <p>No threatened or priority flora species were recorded within the site. Vegetation in the north western corner and western boundary of the site comprises part of the tuart woodland TEC and PEC that is contiguous with the surrounding vegetation of the site.</p>	<ul style="list-style-type: none"> • <i>Environmental Protection and Biodiversity Conservation Act 1999</i> • <i>Environmental Protection Act 1986</i> • <i>Biodiversity Conservation Act 2016</i> • <i>SPP2 Environment and Natural Resources Policy (2003)</i> 	<p>Trees assigned a medium and high retention value are to be retained where possible, see Figure 6, this will be determined as part of the future detailed planning of the proposed public open space areas and the consideration of engineering constraints.</p> <p>It is considered that future development is highly unlikely to significantly impact any MNES. As such, it is not anticipated that a referral pursuant to the EPBC Act will be required.</p> <p>As part of future construction, a CEMP will be prepared, which will identify areas within the site that may be retained as future development progresses.</p>
Terrestrial Fauna	<p>No threatened or priority fauna species were recorded within the site during site-specific investigations.</p> <p>During the tree assessment survey, seven black cockatoo (listed as 'threatened' pursuant to the EPBC Act) habitat trees were recorded within the site, but none were determined to contain hollows suitable for black cockatoos. Trees within the site also provide suitable foraging and potential roosting habitat for black cockatoos.</p>	<ul style="list-style-type: none"> • <i>Environmental Protection and Biodiversity Conservation Act 1999</i> • <i>Environmental Protection Act 1986</i> • <i>Biodiversity Conservation Act 2016</i> • <i>SPP2 Environment and Natural Resources Policy (2003)</i> 	<p>Where possible, trees will be retained as part of construction, with tree retention opportunities identified as part of the detailed design phase. Where trees are to be retained, these will be detailed within the CEMP.</p> <p>Native plant species will be preferred for the planting of the proposed public open space areas and green spaces, which will provide native fauna habitat.</p> <p>It is considered that future development is highly unlikely to significantly impact any MNES. As such, it is not anticipated that a referral pursuant to the EPBC Act will be required.</p>

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Lot 2 McClemons Road, Mount Claremont Scheme Amendment



Environmental Value	Relevant Consideration and potential for impact	Applicable Legislation/ policy and/or guidelines	Management considerations/requirements for future development
Groundwater	The current water table at the northern portion of the site is between 30 m and 32 m below surface level with the base of the aquifer 68 m below surface level. The southern portion of the site has a water table of between 24 m and 25 m below surface level, whilst the base of the aquifer is 60 m below the surface level.	<ul style="list-style-type: none"> • <i>State Planning Policy 2.3 Jandakot Groundwater Protection (WAPC 2017)</i> • <i>State Planning Policy 2.7 Public Drinking Water Source Policy (WAPC 2003)</i> • <i>State Planning Policy 2.9 Water Resources (WAPC 2006)</i> • <i>Better Urban Water Management Framework (WAPC 2008b)</i> • <i>Water quality protection note 36 – Protection public drinking water source areas (DoW 2009)</i> 	<p>It is unlikely that provision of appropriate separation distance between surface levels and groundwater will require further consideration within the site.</p> <p>Groundwater and surface water runoff will be managed in accordance with the endorsed <i>Better Urban Water Management Framework (BUWMF)</i> and will aid the Local Water Management Strategy for the site.</p> <p>All future stages of planning are to be consistent with the BUWMF including Urban Water Management Plans.</p>
Surface water	The <i>Hydrography Linear</i> dataset does not show any waterways, drains or flow paths within the site.	<ul style="list-style-type: none"> • <i>State Planning Policy 2.9 Water Resources (WAPC 2006)</i> • <i>Better Urban Water Management Framework (WAPC 2008b)</i> 	<p>Surface water runoff will be managed in accordance with the <i>Better Urban Water Management Framework</i>, which includes maintenance of the post-development environment in accordance with the pre-development environment. This will ensure that the proposed urban development does not impact on surrounding environmental values.</p> <p>The location of surface water treatment areas can be determined as part of the detailed design of the urban development; however, they will comprise drainage basins or swales located within road reserves and areas of public open space.</p>
Aboriginal Heritage	No Registered Aboriginal Heritage Sites were identified within the site.	<i>Aboriginal Heritage Act 1972</i>	Under the AH Act, all Aboriginal sites are protected whether they are known or not. As part of ground disturbing activities, if Aboriginal artefacts or sites (not previously identified) are uncovered, works will cease, and a suitably qualified expert will survey the potential site. Based on the outcome of the survey, additional consent pursuant to the AH Act may be required to manage and disturb the site.

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Environmental Value	Relevant Consideration and potential for impact	Applicable Legislation/ policy and/or guidelines	Management considerations/requirements for future development
Bushfire	The site is located within an identified 'bushfire prone area' (OBRM 2019). Therefore, the bushfire risk for the proposed scheme amendment was assessed through a bushfire management plan to demonstrate that the proposed land use can comply with the aim of SPP 3.7, and the bushfire compliance criteria as outlined in the Guidelines.	<ul style="list-style-type: none"> • <i>State Planning Policy 3.7 Planning in Bushfire Prone Areas</i> (WAPC 2015) <i>Guidelines for Planning in Bushfire Prone Areas Version 1.3</i> (the Guidelines) (WAPC and DFES 2017) 	Further bushfire management plans will be prepared to support the future planning stages e.g. LSP and subdivision.
Surrounding land uses	The site is located at the edge of a developed area with urban residential development to the east and south. Located adjacent to the north and west of the site are approximately 28 ha of remnant native vegetation associated with Bold Park and Bush Forever site 315; this remnant native vegetation will not be impacted through the LPS amendment or future subdivision for residential development.	<i>Environmental Protection (Noise) Regulations 1997</i>	Construction dust and noise management can be addressed through the preparation of a CEMP.

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Lot 2 McClemans Road, Mount Claremont Scheme Amendment



6. Implementation Framework

A summary of how the proposed development responds to the environmental values and attributes discussed in **section 2** has been provided in **Table 8**. This table also outlines the proposed future management required as part of the construction process.

Table 8: Environmental management framework implementation table

Factor	Scheme amendment	Design phase
Native vegetation	Assessment of flora and vegetation values.	Application for a Native Vegetation Clearing Permit in accordance with Part V of the EP Act for any pre-subdivision works that require development approval. Reconsideration of requirement for an EPBC Act referral. Consideration of a combination of potential mitigation measures during the detailed design stage including revegetation of temporarily cleared areas and retention of medium or high tree retention value where possible.
Native fauna	Assessment of fauna values.	Preparation of the CEMP to minimise impacts to fauna potentially occurring within the site, particular black cockatoo species.
Hydrology	Review existing surface and groundwater data published by DWER.	Consideration of the <i>Better Urban Water Management</i> framework (including Water Sensitive Urban Design principles) as part of construction, through the preparation of a CEMP.
Surrounding land uses	Identification of sensitive land uses	Inclusion of measures for dust suppression within the CEMP.

Environmental Assessment Report

Lot 2 McClemons Road, Mount Claremont Scheme Amendment



7. Summary and Conclusions

This EAR has been prepared on behalf of CCGS to support a scheme amendment to rezone the site to 'Development'. Based on an assessment against the EPA's *Statement of Principles, Factors and Objectives*, the proposed scheme amendment will not result in a change in land use that would significantly impact environmental attributes or values, or nearby land uses. The considerations of the EPA factors and objectives indicate that the proposed scheme amendment is likely to result in development that will provide opportunities to improve the site's vegetation condition and associated fauna habitats.

The proposed urban development of the CCGS playing fields will be suitably assessed and managed through the following management framework, in accordance with relevant federal, state and local government legislation policies, guidelines and best management practices:

- **Native Vegetation:** The development of the site will proceed in accordance with the conditions of approved subdivisions, meaning that clearing of native vegetation will be exempt from the need for a Native Vegetation Clearing Permit pursuant to Part V of the EP Act. However, any clearing of vegetation that is not part of the subdivision approval will require a clearing permit. Any trees identified for retention during the detailed design process will be appropriately managed during the construction stages. Additionally, it is unlikely that any vegetation within the site will require a referral to the Department of Agriculture, Water and the Environment pursuant to the EPBC Act as any vegetation associated with the tuart woodland TEC will be retained and no other plant community within the site meets any MNES criteria.
- **Native Fauna:** The majority of the site is comprised of 'low' quality fauna habitat. Potential black cockatoo habitat trees and foraging habitat will be predominantly retained where possible and suitably protected and managed during stages of construction.
- **Hydrology:** While there are no natural surface water features or wetlands within the site, stormwater and groundwater management requirements (i.e. detention of run-off) will need to occur in accordance with the *Better Urban Water Management Framework*, to ensure that the hydrological regime of the site and surrounding area is not adversely impacted. It is expected that urban development within the site will have positive impacts on groundwater and stormwater quality taking into consideration the previous land use of the site.
- **Bushfire:** A bushfire hazard level assessment has been undertaken as part of the Bushfire Management Plan (BMP) prepared to support the scheme amendment. The BMP has not identified any bushfire hazards that would render the site unsuitable for urban development, based on implementing appropriate separation from nearby bushfire hazards. Further detailed bushfire risk assessments and BMPs will be required to support structure planning, subdivision or development stages.

Overall, the environmental attributes and values of the site can be accommodated through the future detailed design stages, with the proposed scheme amendment compliant with the management objective for each of the EPA's environmental factors.

Environmental Assessment Report

Lot 2 McClemons Road, Mount Claremont Scheme Amendment



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Figures



Figure 1: Site Location

Figure 2: Environmental Features

Figure 3: Plant Communities

Figure 4: Vegetation Condition

Figure 5: Fauna Habitat

Figure 6: Preliminary Concept Plan



Figure 1: Site Location

Project: Environmental Assessment Report
 Lot 2 McClemons Road, Mount Claremont
Client: Christ Church Grammar School

Plan Number: EP21-045(04)-F26
Drawn: GAR
Date: 12/07/2021
Checked: PPS
Approved: ALB
Date: 14/07/2021



0 2,700 5,400
 Metres
 Scale: 1:3,000@A4
 GDA 1994 MGA Zone 50





Figure 2: Environmental Features

Project: Environmental Assessment Report
 Lot 2 McClemons Road, Mount Claremont

Client: Christ Church Grammar School

Plan Number: EP21-045(04)--F27
Drawn: GAR
Date: 12/07/2021
Checked: PPS
Approved: ALB
Date: 14/07/2021



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 Metres
 Scale: 1:3,000@A4
 GDA 1994 MGA Zone 50

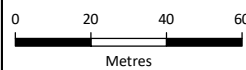




Figure 3: Plant Communities

Project: Environmental Assessment Report
 Lot 2 McClemons Road, Mount Claremont
Client: Christ Church Grammar School

Plan Number: EP21-045(04)--F28
Drawn: GAR
Date: 12/07/2021
Checked: PPS
Approved: ALB
Date: 14/07/2021



Scale: 1:2,000@A4
 GDA 1994 MGA Zone 50



While Emerge Associates makes every attempt to ensure the accuracy and completeness of data, Emerge accepts no responsibility for externally sourced data used.
 © Landgate (2021). Nearmap Imagery date: 25/04/2021

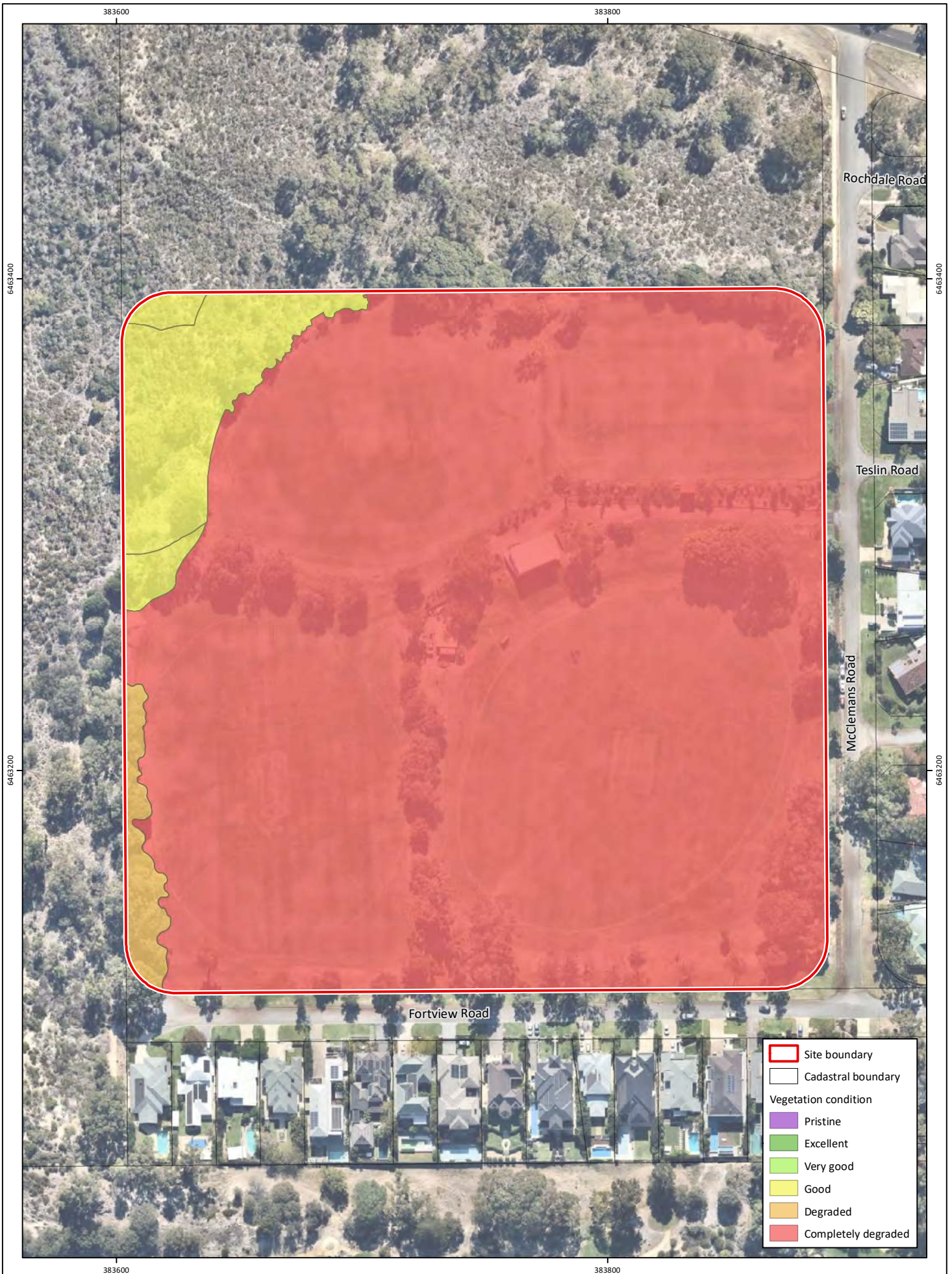
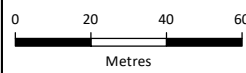


Figure 4: Vegetation Condition

Project: Environmental Assessment Report
 Lot 2 McClemons Road, Mount Claremont
Client: Christ Church Grammar School

Plan Number: EP21-045(04)--F29
Drawn: GAR
Date: 12/07/2021
Checked: PPS
Approved: ALB
Date: 14/07/2021



Scale: 1:2,000@A4
 GDA 1994 MGA Zone 50





Figure 5: Fauna Habitat

Project: Environmental Assessment Report
 Lot 2 McClemons Road, Mount Claremont
Client: Christ Church Grammar School

Plan Number: EP21-045(04)-F30
Drawn: GAR
Date: 12/07/2021
Checked: PPS
Approved: ALB
Date: 14/07/2021

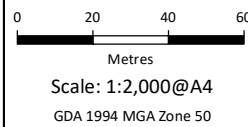
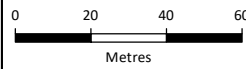




Figure 6: Preliminary Concept Plan

Project: Environmental Assessment Report
 Lot 2 McClemons Road, Mount Claremont
Client: Christ Church Grammar School

Plan Number: EP21-045(04)--F31
Drawn: GAR
Date: 12/07/2021
Checked: PPS
Approved: ALB
Date: 14/07/2021



Scale: 1:2,000@A4
 GDA 1994 MGA Zone 50

	Site boundary
	Cadastral boundary
	Development layout
	Black cockatoo habitat tree
Retention value	
	High
	Moderate
	Low



Appendix A

Technical Memorandum: Flora, vegetation and Fauna Assessment



TECHNICAL MEMORANDUM

Flora, Vegetation and Fauna Assessment

Lot 2 McClemons Road, Mount Claremont

PROJECT NUMBER	EP21-045(02)	DOC. NUMBER	EP21-045(02)--006 SCM
PROJECT NAME	Lot 2 McClemons Road, Mount Claremont	CLIENT	Christ Church Grammar School
AUTHOR	SCM	REVIEWER	RAW
VERSION	1	DATE	13/07/2021

1. INTRODUCTION

1.1. Project background

Emerge Associates (Emerge) were engaged by Christ Church Grammar School (CCGS) to undertake a flora, vegetation and fauna assessment across the CCGS Mount Claremont Playing Fields, Lot 2 McClemons Road, Mount Claremont (herein referred to as the 'site').

The site is located approximately 8 kilometres (km) west of the Perth Central Business District within the Town of Cambridge. The site extends over approximately 8.1 ha and is bounded by remnant vegetation within Bold Park to the north and west, Fortview Road and existing residential dwellings to the south and McClemons Road to the east. The location of the site is shown in **Figure 1**.

1.2. Purpose and scope of work

The flora, vegetation and fauna assessment is required to support planning application documents for the site. Specifically, the scope of work was to provide sufficient detail on the flora, vegetation and fauna values within the site.

As part of the scope of work the following tasks were completed:

- Desktop review of relevant background information pertaining to the site and surrounds, including database searches for conservation significant flora, fauna and communities.
- A field survey to record flora, vegetation and fauna values.
- Identification of potential habitat for conservation significant flora and vegetation.
- Documentation of the desktop assessment, methodology, field survey and results into a report.

2. METHODS

2.1. Desktop assessment

A search was conducted for threatened and priority flora and fauna that may occur or have been recorded within a 10 km radius of the site using NatureMap (DBCA 2021).

A search was also conducted for threatened ecological communities (TECs) and priority ecological communities (PECs) that may occur or have been recorded within a 10 km radius of the site using the *Protected Matters Search Tool* (DAWE 2021) and the weed and native flora dataset (Keighery *et al.* 2012).

2.2. Field survey

An ecologist from Emerge visited the site on 18 May 2021 to conduct the flora, vegetation and fauna field survey. During the survey the site was traversed on foot and the composition of vegetation was recorded. Vegetation condition was mapped across the site using the Keighery (1994) scale (**Table 1**).

A representative flora species list was compiled that focussed on native species and included a limited selection of the non-native species present.

The suitability of habitat within the site for conservation significant flora species, plant communities and fauna species was assessed. In particular, vegetation that may provide habitat for threatened species of black cockatoo¹ was recorded.

Table 1: Vegetation condition scale applied during the field assessment

Condition	Definition (Keighery 1994)	Indicator (DoEE 2016)	
		Typical native vegetation composition	Typical weed cover
Pristine	Pristine or nearly so, no obvious signs of disturbance.	Native plant species diversity fully retained or almost so	Zero or close to
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.	High native plant species diversity	Less than 10%
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	Moderate native plant species diversity	5-20%
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.	Low native plant species diversity	5-50%
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.	Very low native plant species diversity	20-70%
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.	Very low to no native species diversity	Greater than 70%

¹ *Calyptorhynchus latirostris* (Carnaby's cockatoo), *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo) and *Calyptorhynchus baudinii* (Baudin's cockatoo).

2.3. Mapping and analysis

2.3.1. Vegetation

The plant communities within the site were identified from the data collected during the field survey. The vegetation was described according to the dominant species present using the structural formation descriptions of the *National Vegetation Inventory System (NVIS)* (NVIS Technical Working Group 2017). The identified plant communities were mapped on aerial photography during the field survey and boundaries were interpreted from aerial photography and notes taken in the field. Vegetation condition was mapped on aerial photography based on notes recorded during the field survey to define areas with differing condition.

2.3.2. Threatened and priority ecological community

Areas of native vegetation potentially representing a TEC were assessed against key diagnostic characteristics and thresholds relating to size and vegetation condition provided in the *Approved Conservation Advice (incorporating listing advice) for the tuart (Eucalyptus gomphocephala) woodlands and forests of the Swan Coastal Plain TEC criteria* (DoEE 2019).

2.3.3. Fauna habitat

Transects were traversed across the site, during the day, and the characteristics of fauna habitat and presence of fauna species was recorded. Microhabitats such as logs, rocks and leaf litter were investigated and secondary evidence of species presence such as tracks, scats, skeletal remains, foraging evidence or calls was also noted.

3. RESULTS – FLORA AND VEGETATION

3.1. General

A review of historical aerial imagery indicates that the site was predominantly cleared of native vegetation between 1953 and 1970, except for scattered native trees and a patch of native vegetation within the north-western portion of the site (WALIA 2021). Between 1961 and 1970 the existing playing fields were established.

This was confirmed during the field survey, with the majority of the site supporting managed turf playing fields. A small area of native vegetation occurs in the north-western portion of the site, on a sloping bank.

3.2. Desktop assessment

The database search results identified 39 flora species, two communities and 97 fauna species of conservation significance within 10 km of the site. The results of the database searches are provided in **Appendix A**.

3.3. Flora

Nine native and 22 non-native (weed or planted) species were recorded within the site, representing 15 families and 22 genera. The dominant family recorded was Myrtaceae (two native taxa and 14 planted/non-native taxa). The other family to record more than one taxa was Poaceae, with two non-native taxa.

A species list is provided in **Appendix B**.

3.3.1. Threatened and priority flora

No threatened or priority flora were recorded in the site.

Plant community **EgAcMs** in the north-western portion of the site has potential to support threatened and priority flora species. A targeted survey during the appropriate season would be required to confirm whether any threatened or priority flora species occur in this area. The remainder of the site does not support suitable habitat for threatened or priority flora.

3.4. Vegetation

3.4.1. Plant communities

Three plant communities were identified within the site. Plant community **Eg** occurs within the western portion of the site and consists primarily of canopy from trees located outside of the site. Plant community **EgAcMs** occurs within the north-western portion of the site. The remainder of the site supports **parkland cleared** vegetation which comprises non-native trees and shrubs over a predominantly turf understorey.

A description and the area of each plant community is provided in **Table 2** and representative photographs of each are provided in **Plate 1** to **Plate 3**. The location of each plant community is shown in **Figure 2**.

Table 2: Plant communities present within the site

Plant community	Description	Area (ha)
Eg	Open forest of <i>Eucalyptus gomphocephala</i> over non-native grasses and weeds.	0.13
EgAcMs	Woodland of scattered <i>Eucalyptus gomphocephala</i> and planted <i>Eucalyptus</i> species, over shrubland of <i>Acacia cyclops</i> , <i>Acanthocarpus preissii</i> , <i>Melaleuca systema</i> and scattered <i>Olearia axillaris</i> or grassland comprised of non-native species.	0.57
Parkland cleared	Scattered planted trees including <i>Agonis flexuosa</i> and <i>Eucalyptus camaldulensis</i> with occasional native trees such as <i>Eucalyptus gomphocephala</i> over non-native turf.	7.40



*Plate 1: Plant community **Eg** in 'degraded' condition*



*Plate 2: Plant community **EgAcMs** in 'good' condition*



Plate 3: Plant community **parkland cleared** in 'completely degraded' condition

3.4.2. Vegetation condition

The most intact native vegetation was located within plant community **EgAcMs** in the north-western portion of the site. The **EgAcMs** vegetation was mapped as being in 'good' condition as it comprises a canopy layer of predominantly native species over an understorey of both native and non-native species. Native species diversity and cover was moderate to low and evidence of disturbance was present (such as bare ground and weeds). The **EgAcMs** vegetation is contiguous with native vegetation outside of the site in Bold Park.

The **Eg** community was mapped as being in 'degraded' condition as the vegetation structure has been severely impacted by disturbance, comprising a canopy layer of native trees over non-native understorey.

The **parkland cleared** vegetation was mapped as being in 'completely degraded' condition as it is highly disturbed and dominated by non-native species.

The extent of vegetation by condition category is detailed in **Table 3** and shown in **Figure 3**.

Table 3: Vegetation condition categories within the site

Condition category (Keighery (1994))	Size (ha)
Pristine	0
Excellent	0
Very good	0
Good	0.57
Degraded	0.13
Completely degraded	7.40

3.4.3. Threatened and priority ecological communities

The entirety of the **Eg** plant community and the majority of the **EgAcMs** plant community within the site represents the tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain TEC ('tuart woodland TEC') as outlined in **Table 4**.

A total of 0.62 ha of the tuart woodland TEC occurs within the site, as shown in **Figure 4**. The patches of tuart woodland TEC within the site are part of a larger area of tuart woodland TEC that exists outside of the site to the west and north.

The tuart woodland TEC is listed as 'critically endangered' under the EPBC Act and is also listed as a PEC (P3) in WA.

Table 4: Assessment of site conditions against the tuart (Eucalyptus gomphocephala) woodlands and forests of the Swan Coastal Plain TEC criteria (adopted from (DoEE 2019))

Criteria	Requirements for meeting criteria	Site implications
1. Must meet key diagnostic characteristics	<ul style="list-style-type: none"> • Located in appropriate bioregion and landform. • At least 2 living established <i>E. gomphocephala</i> trees with DBH\geq 15cm present in canopy layer and with <60 m between the outer edges of canopies[^] • Vegetation structure is a woodland, forest, open forest, open woodland, or mallee (various forms). 	<ul style="list-style-type: none"> • Site is located in appropriate bioregion and landform. • The areas of EgAcMs and Eg vegetation each contain more than two living established <i>E. gomphocephala</i> (tuart) trees with DBH\geq 15cm present in canopy layer and with <60 m between the outer edges of canopies. • Vegetation within the EgAcMs patch comprises a woodland structure. The vegetation within the Eg patch contains an open forest structure. • The central southern portion of parkand cleared vegetation contains more than two living established <i>E. gomphocephala</i> (tuart) trees with DBH\geq 15cm present in canopy layer and with <60 m between the outer edges of canopies.
2. Must meet size threshold	<ul style="list-style-type: none"> • A patch must be larger than 0.5 ha[#] 	<ul style="list-style-type: none"> • The EgAcMs patch within the site is > 0.5 ha. • The EgAcMs vegetation is connected to tuart trees outside of the site to the north which would comprise part of the patch. • The Eg vegetation within the site is less than 0.5 ha and does not independently meet this criterion. However, the Eg vegetation is contiguous with adjacent tuart trees outside of the site and the overall combined patch size is > 0.5 ha. • The central southern portion of parkand cleared vegetation is less than 0.5 ha and does not meet this criterion. Therefore, this area does not represent the TEC. • DoEE (2019) state that gardens are not part of the TEC and so have been excluded from calculation of patch size.

Table 4: Assessment of site conditions against the tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain TEC criteria (adopted from (DoEE 2019)) (continued)

Criteria	Requirements for meeting criteria	Site implications
3. Must meet condition thresholds	<ul style="list-style-type: none"> Patches >5 ha: no condition threshold Patches ≥0.5 – <2 ha: 'very high' or 'high' condition† Patches ≥2 – ≤5 ha: 'very high', 'high' or 'moderate' condition† 	<ul style="list-style-type: none"> Both the EgAcMs and Eg patches are over 5 ha and are not subject to condition thresholds (including the adjacent tuart trees outside of the site).
4. Must incorporate surrounding context	<ul style="list-style-type: none"> Breaks (e.g. tracks, cleared areas) < 30 m do not separate vegetation into separate patches The site should be thoroughly sampled in the appropriate season. Survey timing should be appropriate. Surrounding environment should be considered (e.g. connectivity, conservation values, fauna habitat). Existing buildings, human-made structures and gardens should be excluded from the TEC. 	<ul style="list-style-type: none"> Breaks such as tracks exist within the patch but do not separate the patch. The survey timing was sufficient to determine that the patch represents the TEC. The majority of the patch lies outside of the site. Areas of managed turf and gardens were excluded from the TEC patch.
Result	The site supports 0.62 ha of the tuart (<i>Eucalyptus gomphocephala</i>) woodlands and forests of the Swan Coastal Plain TEC.	

^Includes dead trees. Where species of dead tree is unclear it is assumed to be *E. gomphocephala* if its canopy is within 60 m of an identified *E. gomphocephala* tree. #Note that a patch comprises a 30 m buffer around the canopy of each *E. gomphocephala* canopy tree, excluding managed turf and gardens. †Using the condition scale provided in (DoEE 2019).

4. RESULTS – FAUNA

4.1. General

The fauna habitat values within the site have been compromised by the removal of most of the native vegetation and historical degradation.

4.2. Habitat

In general, the native vegetation within the north-western portion of the site provides the most value to native fauna. This area supports a range of habitat types and is connected to extensive areas of native vegetation. Fauna habitat values within the remainder of the site are low due to lack of remnant native understory vegetation. However, the native and non-native trees within the site would provide habitat for bird species.

The extent of fauna habitat is detailed in **Table 5** and shown in **Figure 5**.

Table 5: Fauna habitats identified within the site

Fauna habitat	Description	Area (ha)
Woodland	Woodland of scattered <i>Eucalyptus gomphocephala</i> and planted <i>Eucalyptus</i> species, over shrubland of <i>Acacia cyclops</i> , <i>Acanthocarpus preissii</i> , <i>Melaleuca systena</i> and scattered <i>Olearia axillaris</i> or grassland comprised of non-native species.	0.57
Scattered native and non-native trees and shrubs	Scattered native and planted non-native trees and shrubs.	1.11
Turf and bare ground	Predominantly turf and bare ground.	6.42

4.3. Threatened and priority fauna

No threatened or priority fauna species were recorded in the site.

Seven black cockatoo habitat trees² were recorded in the site. None of the habitat trees contain hollows suitable for black cockatoos. Therefore, the site does not currently provide breeding habitat for black cockatoos.

Some of the trees within the **woodland** and **scattered native and non-native trees and shrubs** habitats comprise foraging habitat for black cockatoos. The trees within the site may also provide roosting habitat for black cockatoos.

The woodland habitat in the north-western portion of the site (plant community **EgAcMs**) has potential to support threatened and priority fauna species. A targeted survey would be required to confirm whether any threatened or priority fauna species occur. The remainder of the site is likely to be mainly used by common and widespread fauna species.

5. CONCLUSIONS

The site has been subject to intensive historical disturbance, with the majority of the site supporting non-native vegetation. A small area of native vegetation occurs in the north-western portion of the site, on a sloping bank.

5.1. Flora

Nine native and 22 non-native (weed or planted) species were recorded within the site. No threatened or priority flora were recorded in the site. There is potential for threatened or priority flora species to occur within native vegetation in the north-western portion of the site.

5.2. Vegetation

Three plant communities were identified within the site:

- Plant community **EgAcMs** occurs within the north-western portion of the site and is in 'good' condition. This vegetation is contiguous with a larger patch of native vegetation within Bold Park.
- Plant community **Eg** occurs within the western portion of the site and is in 'degraded' condition.
- The remainder of the site supports **planted and non-native** vegetation which is in 'completely degraded' condition.

One TEC, tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain, occurs within part of the site. This TEC/PEC occurs within the western portion of the site and extends over 0.62 ha. This TEC is listed as 'critically endangered' under the EPBC Act and is also listed as a PEC (P3) in WA.

No other TECs or PECs are considered likely to occur in the site.

² 'Black cockatoo habitat trees' are defined as native *Eucalyptus* sp./*Corymbia* sp. known to support black cockatoo breeding with a diameter at breast height of at least 500 mm.

5.3. Fauna

Three fauna habitats were identified within the site:

- **Woodland** is located within the north-western portion of the site and contains the highest fauna habitat values.
- **Scattered native and non-native trees and shrubs** is located across the site and contain fauna habitat values primarily for avian species.
- **Turf and bare ground** is located across the majority of the site and offers the lowest fauna habitat values.

The site provides habitat for threatened species of black cockatoo. Seven habitat trees were recorded within the site but none currently contain hollows suitable for black cockatoos. Trees within the site also provide suitable foraging and roosting habitat for black cockatoos.

No threatened or priority fauna were recorded in the site. The woodland habitat in the north-western portion of the site (plant community **EgAcMs**) has potential to support threatened and priority fauna species. The remainder of the site is likely to be mainly used by common and widespread fauna species.

6. REFERENCES

6.1. General references

Department of the Environment and Energy (DoEE) 2016, *Banksia Woodlands of the Swan Coastal Plain in Community and Species Profile and Threats Database*, Canberra.

Department of Environment and Energy (DoEE) 2019, *Approved Conservation Advice (incorporating listing advice) for the Tuart (Eucalyptus gomphocephala) woodlands and forests of the Swan Coastal Plain ecological community*, Canberra.

Keighery, B. 1994, *Bushland Plant Survey: A guide to plant community survey for the community*, Wildflower Society of WA (Inc), Nedlands.

Keighery, B. J., Keighery, G. J., Longman, V. M. and Clarke, K. A. 2012, *Weed and Native Flora Data for the Swan Coastal Plain*, Departments of Environmental Protection and Conservation and Land Management, Western Australia.

NVIS Technical Working Group 2017, *Australian Vegetation Attribute Manual: National Vegetation Information System*, Department of the Environment and Energy, Canberra.

6.2. Online references

Western Australian Herbarium (2018). *FloraBase—the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions. <<https://florabase.dpaw.wa.gov.au>>

Western Australian Land Information Authority (WALIA) 2021, *Landgate Map Viewer*, viewed 12 July 2021, <<http://landgate.wa.gov.au>>.

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Figures



Figure 1: Site Location

Figure 2: Plant Communities

Figure 3: Vegetation Condition

*Figure 4: Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain TEC*

Figure 5: Fauna Habitat Values



Figure 1: Site Location

Project: Flora, Vegetation and Fauna Technical Memorandum
 Lot 2 McClemons Road, Mount Claremont

Client: Christ Church Grammar School

Plan Number: EP21-045(02)--F12
Drawn: SCM
Date: 07/07/2021
Checked: SCM
Approved: RAW
Date: 11/07/2021



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 Scale: 1:3,000@A4
 GDA 1994 MGA Zone 50



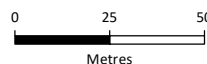


Figure 2: Plant Communities

Project: Flora, Vegetation and Fauna Technical Memorandum
 Lot 2 McClemons Road, Mount Claremont

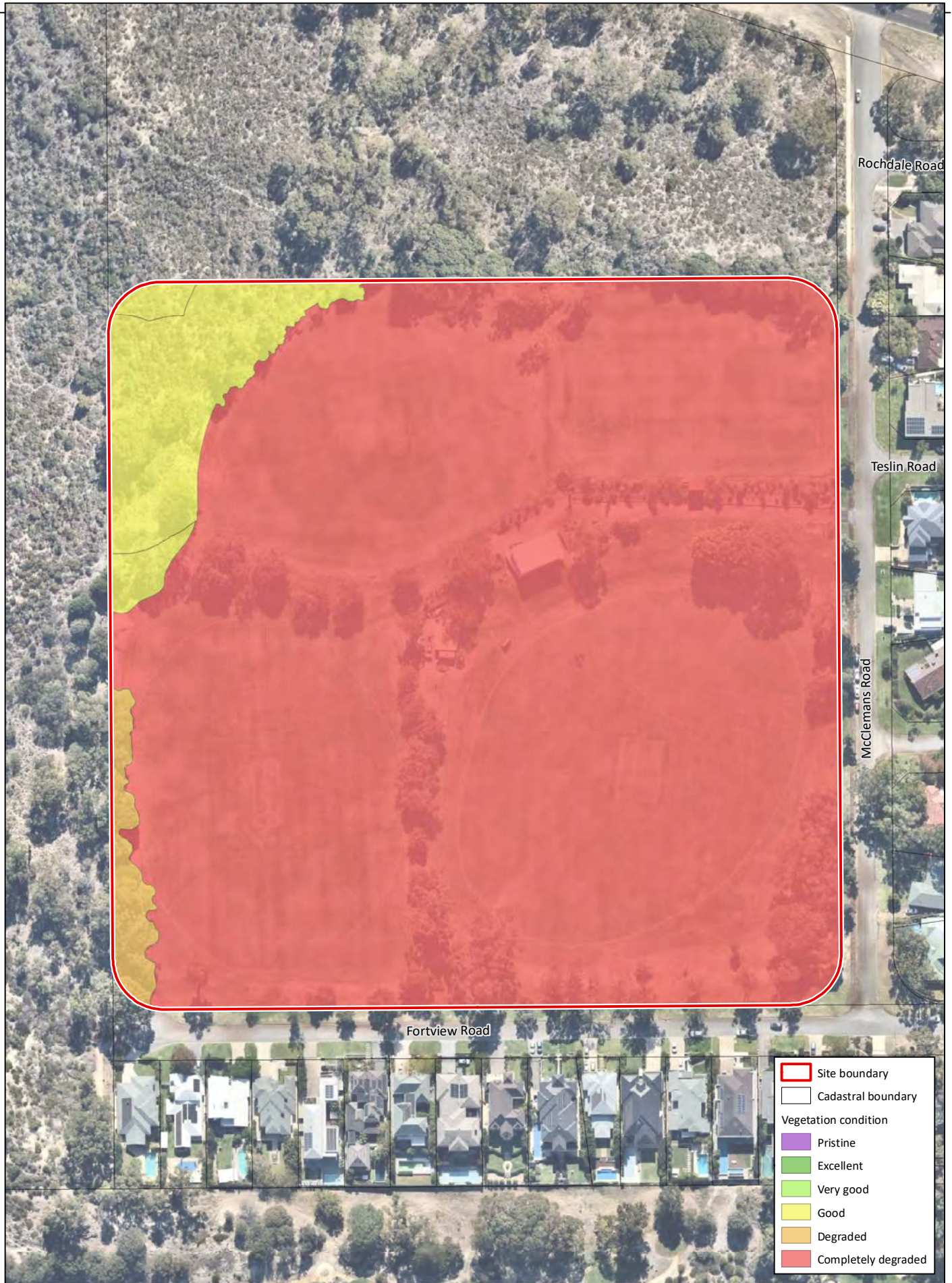
Client: Christ Church Grammar School

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Checked: SCM
Approved: RAW
Date: 11/07/2021



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 GDA 1994 MGA Zone 50

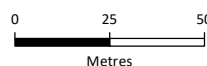




Site boundary
 Cadastral boundary
Vegetation condition
 Pristine
 Excellent
 Very good
 Good
 Degraded
 Completely degraded

Figure 3: Vegetation Condition

Plan Number:
 EP21-045(02)--F14
 Drawn: SCM
 Date: 07/07/2021
 Checked: SCM
 Approved: RAW
 Date: 11/07/2021



Scale: 1:2,000@A4
 GDA 1994 MGA Zone 50

Project: Flora, Vegetation and Fauna Technical Memorandum
 Lot 2 McClemons Road, Mount Claremont
Client: Christ Church Grammar School





Figure 4: Threatened and Priority Ecological Community

Plan Number:
 EP21-045(02)--F36
 Drawn: SCM
 Date: 13/07/2021
 Checked: SCM
 Approved: RAW
 Date: 13/07/2021



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 Scale: 1:2,000@A4
 GDA 1994 MGA Zone 50



Project: Flora, Vegetation and Fauna Technical Memorandum
 Lot 2 McClemons Road, Mount Claremont
Client: Christ Church Grammar School



Figure 5: Fauna Habitat Values

Plan Number:
EP21-045(02)--F15
Drawn: SCM
Date: 07/07/2021
Checked: SCM
Approved: RAW
Date: 11/07/2021



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Metres
Scale: 1:2,000@A4
GDA 1994 MGA Zone 50



Project: Flora, Vegetation and Fauna Technical Memorandum
Lot 2 McClemons Road, Mount Claremont
Client: Christ Church Grammar School

Appendix A

Database Searches





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: 12/07/21 13:08:07

[Summary](#)

[Details](#)

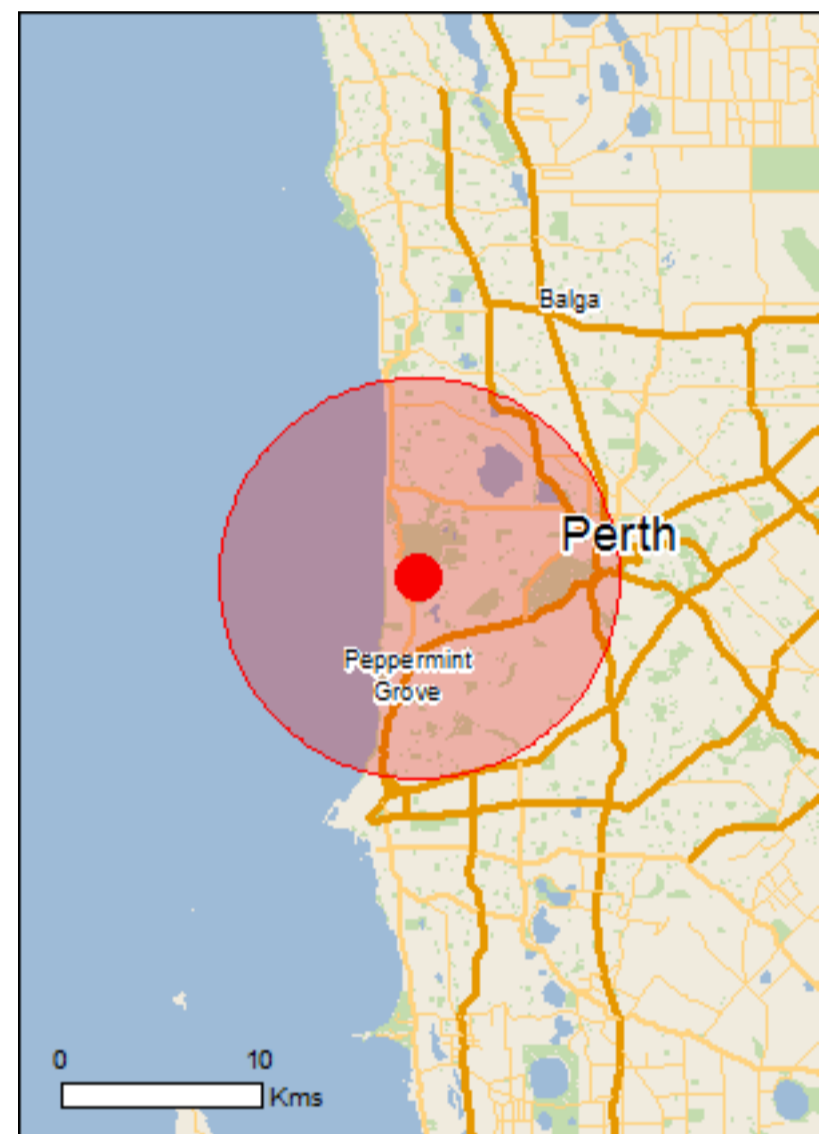
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

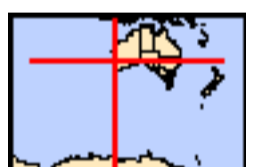
[Acknowledgements](#)



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2015

[Coordinates](#)

[Buffer: 10.0Km](#)



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 Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	55
Listed Migratory Species:	64

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. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

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:	8
Commonwealth Heritage Places:	5
Listed Marine Species:	98
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	15
Regional Forest Agreements:	None
Invasive Species:	40
Nationally Important Wetlands:	3
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
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Community likely to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Tuart (<i>Eucalyptus gomphocephala</i>) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Community likely to occur within area

Listed Threatened Species

[[Resource Information](#)]

Name	Status	Type of Presence
Birds		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area
Calyptorhynchus latirostris Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Critically Endangered	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Insects		
Hesperocolletes douglasi Douglas' Broad-headed Bee, Rottnest Bee [66734]	Critically Endangered	Species or species habitat may occur within area
Mammals		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Bettongia penicillata ogilbyi Woylie [66844]	Endangered	Species or species habitat may occur within area
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat known to occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat likely to occur within area
Plants		
Andersonia gracilis Slender Andersonia [14470]	Endangered	Species or species habitat likely to occur within area
Anigozanthos viridis subsp. terraspectans Dwarf Green Kangaroo Paw [3435]	Vulnerable	Species or species habitat may occur within area
Caladenia huegelii King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat likely to occur within area
Conospermum undulatum Wavy-leaved Smokebush [24435]	Vulnerable	Species or species habitat may occur within area
Diuris drummondii Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat likely to occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat may occur within area
Drakaea elastica Glossy-leaved Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat likely to occur within area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat likely to occur

Name	Status	Type of Presence
Eleocharis keigheryi Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat may occur within area
Thelymitra stellata Star Sun-orchid [7060]	Endangered	Species or species habitat may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sharks		
Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat known to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	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		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area

Name	Threatened	Type of Presence
Hydroprogne caspia Caspian Tern [808]		Foraging, feeding or related behaviour known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Onychoprion anaethetus Bridled Tern [82845]		Foraging, feeding or related behaviour likely to occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Sterna dougallii Roseate Tern [817]		Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Breeding known to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area

Name	Threatened	Type of Presence
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area

Name	Threatened	Type of Presence
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Phalaropus lobatus Red-necked Phalarope [838]		Roosting known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area
Tringa glareola Wood Sandpiper [829]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Tringa totanus Common Redshank, Redshank [835]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land

[\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name

Commonwealth Land -
 Defence - ARTILLERY BARRACKS - FREMANTLE
 Defence - CAMPBELL BARRACKS - SWANBOURNE
 Defence - EAST FREMANTLE SMALL CRAFT BASE
 Defence - IRWIN BARRACKS - KARRAKATTA
 Defence - LEEUWIN BARRACKS - EAST FREMANTLE
 Defence - PRESTON POINT TRAINING DEPOT
 Defence - SWANBOURNE RIFLE RANGE

Commonwealth Heritage Places

[\[Resource Information \]](#)

Name	State	Status
Historic		
Army Magazine Buildings Irwin Barracks	WA	Listed place
Artillery Barracks	WA	Listed place
Claremont Post Office	WA	Listed place
Perth General Post Office	WA	Listed place
South Perth Post Office	WA	Listed place

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		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur

Name	Threatened	Type of Presence
Calidris ruficollis Red-necked Stint [860]		within area Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Catharacta skua Great Skua [59472]		Species or species habitat may occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Roosting known to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area
Larus pacificus Pacific Gull [811]		Foraging, feeding or related behaviour may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel	Endangered	Species or species

Name	Threatened	Type of Presence
[1060]		habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Phalaropus lobatus Red-necked Phalarope [838]		Roosting known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Puffinus assimilis Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat known to occur within area
Sterna anaethetus Bridled Tern [814]		Foraging, feeding or related behaviour likely to occur within area
Sterna caspia Caspian Tern [59467]		Foraging, feeding or related behaviour known to occur within area
Sterna dougallii Roseate Tern [817]		Foraging, feeding or

Name	Threatened	Type of Presence
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	related behaviour likely to occur within area Foraging, feeding or related behaviour may occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thinornis rubricollis Hooded Plover [59510]		Species or species habitat known to occur within area
Tringa glareola Wood Sandpiper [829]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Tringa totanus Common Redshank, Redshank [835]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area
Fish		
Acentronura australe Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Hippocampus subelongatus West Australian Seahorse [66722]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus fatiloquus Prophet's Pipefish [66250]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys meraculus Western Crested Pipefish [66259]		Species or species habitat may occur within area
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Vanacampus poecilolaemus Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammals		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat known to occur within area
Reptiles		
Aipysurus pooleorum Shark Bay Seasnake [66061]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area
Whales and other Cetaceans		
		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area

Name	Status	Type of Presence
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Alfred Cove	WA
Bold Park	WA
Canning River	WA
Keanes Point Reserve	WA
Kings Park	WA
Matilda Bay Reserve	WA
Milyu	WA
Perth Zoo	WA
Swan River	WA
Unnamed WA31906	WA
Unnamed WA44414	WA
Unnamed WA45772	WA
Unnamed WA45773	WA
Unnamed WA50067	WA
Unnamed WA52237	WA

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
Birds		
<i>Acridotheres tristis</i> Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
<i>Anas platyrhynchos</i> Mallard [974]		Species or species habitat likely to occur within area
<i>Carduelis carduelis</i> European Goldfinch [403]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
<i>Columba livia</i> Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
<i>Passer domesticus</i> House Sparrow [405]		Species or species habitat likely to occur within area
<i>Passer montanus</i> Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
<i>Streptopelia chinensis</i> Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
<i>Streptopelia senegalensis</i> Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
<i>Sturnus vulgaris</i> Common Starling [389]		Species or species habitat likely to occur within area
<i>Turdus merula</i> Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
<i>Bos taurus</i> Domestic Cattle [16]		Species or species habitat likely to occur within area
<i>Canis lupus familiaris</i> Domestic Dog [82654]		Species or species habitat likely to occur within area
<i>Felis catus</i> Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
<i>Funambulus pennantii</i> Northern Palm Squirrel, Five-striped Palm Squirrel [129]		Species or species habitat likely to occur within area
<i>Mus musculus</i> House Mouse [120]		Species or species habitat likely to occur within area
<i>Oryctolagus cuniculus</i> Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
<i>Rattus norvegicus</i> Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
<i>Rattus rattus</i> Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
<i>Vulpes vulpes</i> Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
<i>Anredera cordifolia</i> Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
<i>Asparagus aethiopicus</i> Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald		Species or species habitat likely to occur

Name	Status	Type of Presence
Asparagus [62425] Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		within area Species or species habitat likely to occur within area
Asparagus declinatus Bridal Veil, Bridal Veil Creeper, Pale Berry Asparagus Fern, Asparagus Fern, South African Creeper [66908]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		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
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to 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] Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area Species or species habitat likely to occur within area
Olea europaea Olive, Common Olive [9160]		Species or species habitat may occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to 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
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		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
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering		Species or species habitat likely to occur

Name	Status	Type of Presence
Cypress, Salt Cedar [16018]		within area
Reptiles		
Hemidactylus frenatus		
Asian House Gecko [1708]		Species or species habitat likely to occur within area

Nationally Important Wetlands	<u>[Resource Information]</u>
Name	State
Herdsman Lake	WA
Palmer Barracks, Guildford	WA
Swan-Canning Estuary	WA

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 and National Heritage properties, Wetlands of International and National 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.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

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.

Coordinates

-31.96056 115.76972

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian 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, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

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Department of Agriculture Water and the Environment

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NatureMap Species Report

Created By Guest user on 09/07/2021

Kingdom Plantae
Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 115° 46' 11" E, 31° 57' 38" S
Buffer 10km
Group By Conservation Status

Conservation Status	Species	Records
Non-conservation taxon	1599	6884
Presumed extinct	1	1
Priority 1	4	6
Priority 2	10	29
Priority 3	14	59
Priority 4	6	51
Rare or likely to become extinct	4	5
TOTAL	1638	7035

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Rare or likely to become extinct				
1.	1596 <i>Caladenia huegelii</i> (Grand Spider Orchid)		T	
2.	10796 <i>Diuris drummondii</i> (Tall Donkey Orchid)		T	
3.	14409 <i>Grevillea curviloba</i> subsp. <i>incurva</i>		T	
4.	2107 <i>Grevillea thelemanniana</i> (Spider Net Grevillea)		T	
Presumed extinct				
5.	14180 <i>Picris compacta</i>		X	Y
Priority 1				
6.	34161 <i>Baeckea</i> sp. Limestone (N. Gibson & M.N. Lyons 1425)		P1	
7.	16915 <i>Eucalyptus x mundijongensis</i>		P1	
8.	3040 <i>Lepidium pseudohyssopifolium</i>		P1	Y
9.	19209 <i>Typhonium peltandroides</i>		P1	
Priority 2				
10.	3237 <i>Acacia benthamii</i>		P2	
11.	26 <i>Adiantum capillus-veneris</i> (Maidenhair)		P2	
12.	14290 <i>Bossiaea modesta</i>		P2	
13.	5418 <i>Calothamnus macrocarpus</i>		P2	
14.	13097 <i>Eucalyptus educta</i>		P2	
15.	20162 <i>Fabronia hampeana</i>		P2	
16.	13452 <i>Grevillea manglesii</i> subsp. <i>ornithopoda</i>		P2	
17.	37683 <i>Melaleuca viminalis</i>		P2	
18.	42022 <i>Poranthera moorokatta</i>		P2	
19.	1717 <i>Thelymitra variegata</i> (Queen of Sheba)		P2	
Priority 3				
20.	3373 <i>Acacia horridula</i>		P3	
21.	7831 <i>Angianthus micropodioides</i>		P3	
22.	35317 <i>Austrostipa mundula</i>		P3	
23.	34236 <i>Beyeria cinerea</i> subsp. <i>cinerea</i>		P3	
24.	3178 <i>Byblis gigantea</i> (Rainbow Plant)		P3	
25.	1425 <i>Conostylis bracteata</i>		P3	
26.	6766 <i>Dicrastylis micrantha</i>		P3	
27.	11461 <i>Hibbertia spicata</i> subsp. <i>leptotheca</i>		P3	
28.	45081 <i>Lasiopetalum glutinosum</i> subsp. <i>glutinosum</i>		P3	
29.	5038 <i>Lasiopetalum membranaceum</i>		P3	
30.	5237 <i>Pimelea calcicola</i>		P3	
31.	980 <i>Schoenus capillifolius</i>		P3	
32.	13127 <i>Stylidium maritimum</i>		P3	
33.	12468 <i>Verticordia venusta</i>		P3	

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Priority 4					
34.	11333	<i>Calothamnus graniticus</i> subsp. <i>leptophyllus</i>		P4	
35.	4763	<i>Dodonaea hackettiana</i> (Hackett's Hopbush)		P4	
36.	17622	<i>Hypolaena robusta</i>		P4	
37.	4027	<i>Jacksonia sericea</i> (Waldjumi)		P4	
38.	7803	<i>Stylidium striatum</i> (Fan-leaved Triggerplant)		P4	
39.	14714	<i>Verticordia lindleyi</i> subsp. <i>lindleyi</i>		P4	
Non-conservation taxon					
40.	19708	<i>Abutilon grandifolium</i>	Y		
41.	3200	<i>Acacia acuminata</i> (Jam, Mangard)			
42.	15466	<i>Acacia applanata</i>			
43.	15469	<i>Acacia barbinervis</i> subsp. <i>barbinervis</i>			
44.	3242	<i>Acacia blakelyi</i>			
45.	3262	<i>Acacia cochlearis</i> (Rigid Wattle)			
46.	12253	<i>Acacia consobrina</i>			
47.	3273	<i>Acacia craspedocarpa</i> (Hop Mulga)			
48.	3282	<i>Acacia cyclops</i> (Coastal Wattle)			
49.	11661	<i>Acacia drummondii</i> subsp. <i>drummondii</i>			
50.	3323	<i>Acacia ericifolia</i>			
51.	3374	<i>Acacia huegelii</i>			
52.	3383	<i>Acacia incurva</i>			
53.	18217	<i>Acacia iteaphylla</i>	Y		
54.	3395	<i>Acacia jibberdingensis</i>			
55.	3408	<i>Acacia lasiocalyx</i> (Silver Wattle, Wilyurwur)			
56.	3409	<i>Acacia lasiocarpa</i> (Panjang)			
57.	11611	<i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i>			
58.	15721	<i>Acacia lasiocarpa</i> var. <i>sedifolia</i>			
59.	3424	<i>Acacia littorea</i>			
60.	17861	<i>Acacia longifolia</i>	Y		
61.	18597	<i>Acacia longifolia</i> subsp. <i>sophae</i>	Y		
62.	10955	<i>Acacia melanoxyton</i>	Y		
63.	3442	<i>Acacia microbotrya</i> (Manna Wattle, Kalyang)			
64.	3454	<i>Acacia nervosa</i> (Rib Wattle)			
65.	3482	<i>Acacia paradoxa</i> (Kangaroo Thorn)	Y		
66.	17860	<i>Acacia podalyriifolia</i>	Y		
67.	3502	<i>Acacia pulchella</i> (Prickly Moses)			
68.	15481	<i>Acacia pulchella</i> var. <i>glaberrima</i>			
69.	15483	<i>Acacia pulchella</i> var. <i>pulchella</i>			
70.	3505	<i>Acacia pycnocephala</i>			
71.	3515	<i>Acacia restiacea</i>			
72.	3525	<i>Acacia rostellifera</i> (Summer-scented Wattle)			
73.	42600	<i>Acacia salicina</i>			
74.	3527	<i>Acacia saligna</i> (Orange Wattle, Kudjong)			
75.	30032	<i>Acacia saligna</i> subsp. <i>saligna</i>			
76.	3541	<i>Acacia sessilis</i>			
77.	3557	<i>Acacia stenoptera</i> (Narrow Winged Wattle)			
78.	3564	<i>Acacia subcaerulea</i>			
79.	3576	<i>Acacia tetragonocarpa</i>			
80.	3584	<i>Acacia truncata</i>			
81.	3602	<i>Acacia willdenowiana</i> (Grass Wattle)			
82.	3604	<i>Acacia xanthina</i> (White-stemmed Wattle)			
83.	3184	<i>Acaena echinata</i> (Sheep's Burr)			
84.	1208	<i>Acanthocarpus preissii</i>			
85.	40761	<i>Acer negundo</i>	Y		
86.	48409	<i>Acetabularia caliculus</i>			
87.	7812	<i>Achillea millefolium</i> (Yarrow, Milfoil)	Y		
88.		<i>Acrochaetium savianum</i>			
89.	26447	<i>Acrothamnion preissii</i>			
90.	6295	<i>Acrotriche cordata</i> (Coast Ground Berry)			
91.	6203	<i>Actinotus glomeratus</i>			
92.	14970	<i>Adenanthos barbiger</i>			
93.	11837	<i>Adenanthos cygnorum</i> subsp. <i>cygnorum</i> (Common Woollybush)			
94.	20331	<i>Aeonium arboreum</i>	Y		
95.	18396	<i>Aeonium haworthii</i>	Y		
96.	1505	<i>Agave americana</i> (Century Plant)	Y		
97.	43242	<i>Agave angustifolia</i>	Y		Y
98.	18306	<i>Ageratina adenophora</i> (Crofton Weed)	Y		Y
99.	5316	<i>Agonis flexuosa</i> (Peppermint, Wonil)			
100.	17202	<i>Agonis flexuosa</i> var. <i>flexuosa</i>			
101.	23474	<i>Agrostocrinum hirsutum</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
102.	17028 <i>Ailanthus altissima</i> (Tree of Heaven)	Y		
103.	184 <i>Aira caryophylla</i> (Silvery Hairgrass)	Y		
104.	185 <i>Aira cupaniana</i> (Silvery Hairgrass)	Y		
105.	187 <i>Aira praecox</i> (Early Hairgrass)	Y		
106.	48513 <i>Aizoon pubescens</i>	Y		
107.	43820 <i>Albuca flaccida</i>	Y		
108.	1056 <i>Alexgeorgea nitens</i>			
109.	1374 <i>Allium ampeloprasum</i>	Y		
110.	1375 <i>Allium neapolitanum</i> (Naples Onion)	Y		
111.	1377 <i>Allium porrum</i> (Leek)	Y		
112.	1378 <i>Allium triquetrum</i> (Three-cornered Garlic)	Y		
113.	1728 <i>Allocasuarina fraseriana</i> (Sheoak, Kondil)			
114.	1731 <i>Allocasuarina huegeliana</i> (Rock Sheoak, Kwool)			
115.	1732 <i>Allocasuarina humilis</i> (Dwarf Sheoak)			
116.	13908 <i>Allocasuarina lehmanniana</i> subsp. <i>lehmanniana</i>			
117.	48620 <i>Althenia preissii</i>			
118.	6565 <i>Alyxia buxifolia</i> (Dysentery Bush)			
119.	2655 <i>Amaranthus albus</i> (Tumbleweed)	Y		
120.	2656 <i>Amaranthus caudatus</i> (Love Lies Bleeding)	Y		
121.	2659 <i>Amaranthus cruentus</i> (Redshank)	Y		
122.	2662 <i>Amaranthus hybridus</i> (Slim Amaranth)	Y		Y
123.	2671 <i>Amaranthus viridis</i> (Green Amaranth)	Y		
124.	1489 <i>Amaryllis belladonna</i> (Belladonna Lily)	Y		
125.	7821 <i>Ambrosia psilostachya</i> (Perennial Ragweed)	Y		
126.	6209 <i>Ammi majus</i> (Bishop's Weed)	Y		
127.	192 <i>Ammophila arenaria</i> (Marram Grass)	Y		
128.	35159 <i>Ammophila arenaria</i> subsp. <i>arenaria</i>	Y		
129.	126 <i>Amphibolis antarctica</i> (Sea Nymph)			
130.	127 <i>Amphibolis griffithii</i>			
131.	200 <i>Amphipogon turbinatus</i>			
132.	26458 <i>Amphiroa anceps</i>			
133.	26463 <i>Amphiroa gracilis</i>			
134.	6671 <i>Amsinckia calycina</i> (Yellow Burrweed)	Y		
135.	13267 <i>Amyema linophylla</i> subsp. <i>linophylla</i>			
136.	2380 <i>Amyema miquelii</i> (Stalked Mistletoe)			
137.	6314 <i>Andersonia lehmanniana</i>			
138.	7827 <i>Angianthus cunninghamii</i> (Coast Angianthus)			
139.	1407 <i>Anigozanthos flavidus</i> (Tall Kangaroo Paw)			
140.	1409 <i>Anigozanthos humilis</i> (Catspaw)			
141.	11434 <i>Anigozanthos humilis</i> subsp. <i>humilis</i>			
142.	1411 <i>Anigozanthos manglesii</i> (Mangles Kangaroo Paw, Kurulbrang)			
143.	11261 <i>Anigozanthos manglesii</i> subsp. <i>manglesii</i>			
144.	46236 <i>Anisomeles farinacea</i>			
145.	29 <i>Anogramma leptophylla</i> (Annual Fern)			
146.	17455 <i>Anredera cordifolia</i>	Y		
147.	6947 <i>Anthocercis ilicifolia</i>			
148.	11725 <i>Anthocercis ilicifolia</i> subsp. <i>ilicifolia</i>			
149.	6949 <i>Anthocercis littorea</i> (Yellow Tailflower)			
150.	26471 <i>Anthithamnion armatum</i>			
151.	26477 <i>Anthithamnion verticale</i>			Y
152.	3686 <i>Aotus cordifolia</i>			
153.	3688 <i>Aotus gracillima</i>			
154.	3186 <i>Aphanes arvensis</i> (Parsley Piert)	Y		
155.	1117 <i>Aphelia cyperoides</i>			
156.	6210 <i>Apium annuum</i>			
157.	8595 <i>Apium graveolens</i> (Wild Celery)	Y		
158.	12040 <i>Apium prostratum</i> subsp. <i>prostratum</i> var. <i>prostratum</i> (Sea Celery)			
159.	26482 <i>Apoglossum spathulatum</i>			Y
160.	7838 <i>Arctotheca calendula</i> (Cape Weed, African Marigold)	Y		
161.	46393 <i>Arctotheca calendula</i> x <i>populifolia</i>	Y		
162.	7839 <i>Arctotheca populifolia</i> (Dune Arctotheca, Beach Pumpkin, Coast Capeweed, Beach Daisy)	Y		
163.	7840 <i>Arctotis stoechadifolia</i> (White Arctotis, Silver Arctotis)	Y		
164.	26484 <i>Areschougia ligulata</i>			
165.	31531 <i>Argemone mexicana</i>	Y		
166.	17797 <i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i>	Y		
167.	7841 <i>Argyranthemum frutescens</i> (Marguerite)	Y		
168.	28293 <i>Argyranthemum frutescens</i> subsp. <i>foeniculaceum</i>	Y		
169.	1264 <i>Arnocrinum preissii</i>			
170.	11542 <i>Arrhenatherum elatius</i> var. <i>bulbosum</i> (Onion Twitch)	Y		

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
171.	226 <i>Arundo donax</i> (Giant Reed)	Y		
172.	26486 <i>Asparagopsis taxiformis</i>			
173.	8779 <i>Asparagus asparagoides</i> (Bridal Creeper)	Y		
174.	16943 <i>Asparagus declinatus</i>	Y		
175.	16945 <i>Asparagus plumosus</i>	Y		
176.	1364 <i>Asphodelus fistulosus</i> (Onion Weed)	Y		
177.	20350 <i>Astartea affinis</i> (West-coast Astartea)			
178.	20283 <i>Astartea scoparia</i> (Common Astartea)			
179.	7851 <i>Asteridea pulverulenta</i> (Common Bristle Daisy)			
180.	6323 <i>Astroloma ciliatum</i> (Candle Cranberry)			
181.	6330 <i>Astroloma macrocalyx</i> (Swan Berry)			
182.	6331 <i>Astroloma microcalyx</i> (Native Cranberry)			
183.	6334 <i>Astroloma pallidum</i> (Kick Bush)			
184.	6339 <i>Astroloma xerophyllum</i>			
185.	2462 <i>Atriplex hypoleuca</i>			
186.	2463 <i>Atriplex isatidea</i> (Coast Saltbush)			
187.	2471 <i>Atriplex prostrata</i> (Hastate Orache)	Y		
188.	2475 <i>Atriplex semibaccata</i> (Berry Saltbush)			
189.	17233 <i>Austrostipa campylachne</i>			
190.	17234 <i>Austrostipa compressa</i>			
191.	17237 <i>Austrostipa elegantissima</i>			
192.	17240 <i>Austrostipa flavescens</i>			
193.	17241 <i>Austrostipa hemipogon</i>			
194.	17245 <i>Austrostipa mollis</i>			
195.	17246 <i>Austrostipa nitida</i>			
196.	17253 <i>Austrostipa semibarbata</i>			
197.	17257 <i>Austrostipa variabilis</i>			
198.	231 <i>Avellinia michelii</i>	Y		
199.	233 <i>Avena barbata</i> (Bearded Oat)	Y		
200.	234 <i>Avena fatua</i> (Wild Oat)	Y		
201.	20013 <i>Axonopus fissifolius</i>	Y		
202.	42902 <i>Azolla rubra</i>			
203.	18279 <i>Babiana angustifolia</i>	Y		
204.	18280 <i>Babiana nana</i>	Y		
205.	19458 <i>Babiana tubulosa</i> var. <i>tubiflora</i>	Y		
206.	36441 <i>Babingtonia camphorosmae</i> (Camphor Myrtle)			
207.	16346 <i>Bacopa monnieri</i>	Y		
208.	26501 <i>Bangia atropurpurea</i>			
209.	49098 <i>Bangia fuscopurpurea</i>			
210.	32682 <i>Banksia armata</i> var. <i>armata</i>			
211.	1799 <i>Banksia ashbyi</i> (Ashby's Banksia)			
212.	1800 <i>Banksia attenuata</i> (Slender Banksia, Piara)			
213.	32580 <i>Banksia dallanneyi</i> subsp. <i>dallanneyi</i> var. <i>dallanneyi</i>			
214.	32523 <i>Banksia fraseri</i> var. <i>fraseri</i>			
215.	1822 <i>Banksia ilicifolia</i> (Holly-leaved Banksia)			
216.	1830 <i>Banksia littoralis</i> (Swamp Banksia, Pungura)			
217.	1834 <i>Banksia menziesii</i> (Firewood Banksia)			
218.	1842 <i>Banksia prionotes</i> (Acorn Banksia)			
219.	1847 <i>Banksia sceptra</i> (Sceptre Banksia)			
220.	32076 <i>Banksia sessilis</i> (Parrot Bush, Pudjak)			
221.	32077 <i>Banksia sessilis</i> var. <i>cygnorum</i>			
222.	1851 <i>Banksia sphaerocarpa</i> (Round-fruit Banksia)			
223.	32054 <i>Banksia undata</i> var. <i>undata</i>			
224.	1855 <i>Banksia victoriae</i> (Woolly Orange Banksia)			
225.	32315 <i>Barbula calycina</i>			
226.	741 <i>Baumea articulata</i> (Jointed Rush)			
227.	743 <i>Baumea juncea</i> (Bare Twigrush)			
228.	744 <i>Baumea laxa</i>			
229.	748 <i>Baumea vaginalis</i> (Sheath Twigrush)			
230.	5382 <i>Beaufortia elegans</i> (Elegant Beaufortia)			
231.	7046 <i>Bellardia trixago</i> (Bellardia)	Y		
232.	7853 <i>Berkheya rigida</i> (African Thistle, Hamelin Thistle)	Y		
233.	48503 <i>Betaphycus speciosus</i>			
234.	4601 <i>Beyeria viscosa</i> (Pinkwood)			
235.	7855 <i>Bidens pilosa</i> (Cobbler's Pegs)	Y		
236.	25788 <i>Billardiera fraseri</i> (Elegant Pronaya)			
237.	25798 <i>Billardiera fusiformis</i> (Australian Bluebell)			
238.	1417 <i>Blancoa canescens</i> (Winter Bell)			
239.	749 <i>Bolboschoenus caldwellii</i> (Marsh Club-rush)			
240.	26511 <i>Bornetia binderiana</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
241.	4403 <i>Boronia alata</i> (Winged Boronia)			
242.	11381 <i>Boronia ramosa</i> subsp. <i>anethifolia</i>			
243.	16639 <i>Boronia scabra</i> subsp. <i>scabra</i>			
244.	1272 <i>Borya scirpoidea</i>			
245.	1273 <i>Borya sphaerocephala</i> (Pincushions)			
246.	3710 <i>Bossiaea eriocarpa</i> (Common Brown Pea)			
247.	3714 <i>Bossiaea ornata</i> (Broad Leaved Brown Pea)			
248.	10915 <i>Brachychiton populneus</i> (Kurrajong)	Y		
249.	15000 <i>Brachychiton populneus</i> subsp. <i>populneus</i>	Y		
250.	6341 <i>Brachyloma preissii</i> (Globe Heath)			
251.	7867 <i>Brachyscome bellidioides</i>			
252.	7878 <i>Brachyscome iberidifolia</i>			
253.	7883 <i>Brachyscome pusilla</i>			
254.	11187 <i>Brassica barrelieri</i> subsp. <i>oxyrrhina</i> (Smooth-stem Turnip)	Y		
255.	2993 <i>Brassica fruticulosa</i> (Twiggy Turnip)	Y		
256.	2999 <i>Brassica rapa</i>	Y		
257.	3000 <i>Brassica tournefortii</i> (Mediterranean Turnip)	Y		
258.	2995 <i>Brassica x napus</i>	Y		
259.	244 <i>Briza maxima</i> (Blowfly Grass)	Y		
260.	245 <i>Briza minor</i> (Shivery Grass)	Y		
261.	247 <i>Bromus arenarius</i> (Sand Brome)			
262.	249 <i>Bromus diandrus</i> (Great Brome)	Y		
263.	250 <i>Bromus hordeaceus</i> (Soft Brome)	Y		
264.	252 <i>Bromus madritensis</i> (Madrid Brome)	Y		
265.	253 <i>Bromus rubens</i> (Red Brome)	Y		
266.	44532 <i>Bryoerythrophyllum dubium</i>			
267.	26521 <i>Bryopsis australis</i>			
268.	<i>Bryopsis gemellipara</i>			
269.	26525 <i>Bryopsis plumosa</i>			
270.	<i>Bryopsis vestita</i>			
271.	32330 <i>Bryum argenteum</i>			
272.	32331 <i>Bryum lanatum</i>			
273.	<i>Bryum</i> sp.			
274.	14157 <i>Buddleja dysophylla</i>	Y		Y
275.	6537 <i>Buddleja madagascariensis</i>	Y		
276.	6675 <i>Buglossoides arvensis</i> (Corn Gromwell)	Y		
277.	12770 <i>Burchardia congesta</i>			
278.	1276 <i>Caesia micrantha</i> (Pale Grass Lily)			
279.	3002 <i>Cakile maritima</i> (Sea Rocket)	Y		
280.	15330 <i>Caladenia arenicola</i>			
281.	11136 <i>Caladenia denticulata</i>			
282.	1586 <i>Caladenia discordea</i> (Dancing Orchid)			
283.	1592 <i>Caladenia flava</i> (Cowslip Orchid)			
284.	15348 <i>Caladenia flava</i> subsp. <i>flava</i>			
285.	15352 <i>Caladenia georgei</i>			
286.	1599 <i>Caladenia latifolia</i> (Pink Fairy Orchid)			
287.	1602 <i>Caladenia longicauda</i> (Common White Spider Orchid)			
288.	15361 <i>Caladenia longicauda</i> subsp. <i>calcigena</i>			
289.	15365 <i>Caladenia longicauda</i> subsp. <i>longicauda</i>			
290.	1603 <i>Caladenia longiclavata</i> (Clubbed Spider Orchid)			
291.	17760 <i>Caladenia nobilis</i>			
292.	18019 <i>Caladenia vulgata</i>			
293.	19871 <i>Caladenia x spectabilis</i>			
294.	2845 <i>Calandrinia brevipedata</i> (Short-stalked Purslane)			
295.	2846 <i>Calandrinia calyptrata</i> (Pink Purslane)			
296.	2848 <i>Calandrinia corrigioloides</i> (Strap Purslane)			
297.	2856 <i>Calandrinia liniflora</i> (Parakeelya)			
298.	1214 <i>Calectasia grandiflora</i> (Blue Tinsel Lily)			
299.	19309 <i>Calectasia narragara</i>			
300.	48988 <i>Callistemon citrinus</i>	Y		
301.	5395 <i>Callistemon phoeniceus</i> (Lesser Bottlebrush, Dubarda)			
302.	26532 <i>Callithamnion perpusillum</i>			Y
303.	4717 <i>Callitriche stagnalis</i> (Common Starwort)	Y		
304.	96 <i>Callitris preissii</i> (Rottnest Island Pine, Maro)			
305.	97 <i>Callitris roei</i> (Roe's Cypress Pine)			
306.	8637 <i>Callitris verrucosa</i>			
307.	26534 <i>Callophycus dorsifer</i>			
308.	26535 <i>Callophycus harveyanus</i>			
309.	26536 <i>Callophycus oppositifolius</i>			
310.	5408 <i>Calothamnus gilesii</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
311.	5410 <i>Calothamnus graniticus</i>			
312.	5415 <i>Calothamnus lateralis</i>			
313.	5426 <i>Calothamnus quadrifidus</i> (One-sided Bottlebrush, Kwoondjard)			
314.	35756 <i>Calothamnus quadrifidus</i> subsp. <i>angustifolius</i>			
315.	35758 <i>Calothamnus quadrifidus</i> subsp. <i>homalophyllus</i> (Murchison Clawflower)			
316.	35816 <i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i>			
317.	5428 <i>Calothamnus rupestris</i> (Mouse Ears)			
318.	5429 <i>Calothamnus sanguineus</i> (Silky-leaved Blood flower, Pindak)			
319.	5439 <i>Calytrix angulata</i> (Yellow Starflower)			
320.	5441 <i>Calytrix aurea</i>			
321.	5458 <i>Calytrix flavescens</i> (Summer Starflower)			
322.	5460 <i>Calytrix fraseri</i> (Pink Summer Calytrix)			
323.	5461 <i>Calytrix glutinosa</i>			
324.	5465 <i>Calytrix leschenaultii</i>			
325.	5476 <i>Calytrix sapphirina</i>			
326.	5481 <i>Calytrix sylvana</i>			
327.	32337 <i>Campylopus flindersii</i>			
328.	32338 <i>Campylopus introflexus</i>	Y		
329.	13488 <i>Canna x generalis</i>	Y		
330.	18134 <i>Cannabis sativa</i>	Y		
331.	3004 <i>Capsella bursa-pastoris</i> (Shepherd's Purse)	Y		
332.	3005 <i>Cardamine hirsuta</i> (Common Bittercress)	Y		
333.	49010 <i>Cardamine occulta</i>	Y		
334.	7909 <i>Carduus pycnocephalus</i> (Slender Thistle)	Y		
335.	753 <i>Carex appressa</i> (Tall Sedge)			
336.	754 <i>Carex divisa</i> (Divided Sedge)	Y		
337.	43241 <i>Carex thecata</i>			
338.	2795 <i>Carpobrotus edulis</i> (Hottentot Fig)	Y		
339.	2798 <i>Carpobrotus virescens</i> (Coastal Pigface, Kolboko, Bain)			
340.	26546 <i>Carpopeltis elata</i>			
341.	2951 <i>Cassytha flava</i> (Dodder Laurel)			
342.	2956 <i>Cassytha pomiformis</i> (Dodder Laurel)			
343.	2957 <i>Cassytha racemosa</i> (Dodder Laurel)			
344.	18313 <i>Casuarina cunninghamiana</i>	Y		Y
345.	18314 <i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i>	Y		
346.	19842 <i>Casuarina equisetifolia</i>	Y		
347.	18321 <i>Casuarina glauca</i>	Y		
348.	1742 <i>Casuarina obesa</i> (Swamp Sheoak, Kuli)			
349.	13685 <i>Catapodium rigidum</i> (Rigid Fescue)	Y		
350.	26556 <i>Caulerpa cactoides</i>			
351.	26559 <i>Caulerpa cupressoides</i>			
352.	44539 <i>Caulerpa cylindracea</i>			
353.	27380 <i>Caulerpa flexilis</i> var. <i>muelleri</i>			
354.	26566 <i>Caulerpa lagara</i>			Y
355.	26573 <i>Caulerpa racemosa</i>			
356.	26574 <i>Caulerpa scalpelliformis</i>			
357.	26578 <i>Caulerpa simpliciuscula</i>			
358.	46993 <i>Caulerpa taxifolia</i> var. <i>distichophylla</i>			
359.	26580 <i>Caulerpa trifaria</i>			
360.	41564 <i>Cenchrus clandestinus</i> (Kikuyu Grass)	Y		
361.	259 <i>Cenchrus echinatus</i> (Burrgrass)	Y		
362.	41566 <i>Cenchrus longisetus</i> (Feathertop)	Y		
363.	41567 <i>Cenchrus macrourus</i> (African Feather Grass)	Y		
364.	41563 <i>Cenchrus purpureus</i> (Elephant Grass)	Y		
365.	41568 <i>Cenchrus setaceus</i> (Fountain Grass)	Y		
366.	41570 <i>Cenchrus spinifex</i> (Spiny Burrgrass)	Y		
367.	7916 <i>Centaurea melitensis</i> (Maltese Cockspur, Malta Thistle)	Y		
368.	6539 <i>Centaureum erythraea</i> (Common Centaury)	Y		
369.	6542 <i>Centaureum tenuiflorum</i>	Y		
370.	6214 <i>Centella asiatica</i>			
371.	7918 <i>Centipeda cunninghamii</i> (Common Sneezewood, Gukwonderuk, Old Man Weed)			
372.	7366 <i>Centranthus macrosiphon</i>	Y		
373.	26587 <i>Centroceras clavulatum</i>			
374.	1125 <i>Centrolepis drummondiana</i>			
375.	<i>Cephaloziella exiliflora</i>			
376.	<i>Cephaloziella varians</i>			
377.	26595 <i>Ceramium isogonum</i>			
378.	26599 <i>Ceramium puberulum</i>			
379.	2889 <i>Cerastium glomeratum</i> (Mouse Ear Chickweed)	Y		
380.	32462 <i>Ceratodon purpureus</i> subsp. <i>convolutus</i>			

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381.	6954 <i>Cestrum parqui</i> (Green Poisonberry)	Y		Y
382.	26607 <i>Chaetomorpha aerea</i>			
383.	26611 <i>Chaetomorpha linum</i>			
384.	18156 <i>Chamaecytisus palmensis</i> (Tagasaste)	Y		
385.	11299 <i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>			
386.	35598 <i>Chamelaucium</i> sp. <i>Winchester</i> (C. Chapman s.n. PERTH 07879180)			
387.	5498 <i>Chamelaucium uncinatum</i> (Geraldton Wax)			
388.	26616 <i>Champia affinis</i>			
389.	26618 <i>Champia parvula</i>			
390.	26621 <i>Champia zostericola</i>			
391.	1513 <i>Chasmanthe floribunda</i> (African Cornflag)	Y		
392.	26622 <i>Chauviniella coriifolia</i>			
393.	12818 <i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>			
394.	2483 <i>Chenopodium album</i> (Fat Hen)	Y		
395.	2490 <i>Chenopodium glaucum</i> (Glaucous Goosefoot)	Y		
396.	2491 <i>Chenopodium macrospermum</i>	Y		
397.	2494 <i>Chenopodium murale</i> (Nettle-leaf Goosefoot)	Y		
398.	36281 <i>Chondracanthus acicularis</i>			
399.	26631 <i>Chondria capillaris</i>			Y
400.	26634 <i>Chondria dasyphylla</i>			Y
401.	7925 <i>Chondrilla juncea</i> (Skeleton Weed)	Y		
402.	17706 <i>Chordifex sinuosus</i>			
403.	11900 <i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i>	Y		
404.	17585 <i>Chrysocoma coma-aurea</i>	Y		Y
405.	3766 <i>Cicer arietinum</i> (Chickpea)	Y		
406.	7935 <i>Cichorium intybus</i> (Chicory)	Y		
407.	18303 <i>Cinnamomum camphora</i>	Y		
408.	7937 <i>Cirsium vulgare</i> (Spear Thistle, Scotch Thistle)	Y		
409.	26649 <i>Cladophora albida</i>			
410.	26651 <i>Cladophora feredayi</i>			
411.	26652 <i>Cladophora flexuosa</i>			Y
412.	<i>Cladophora glomerata</i>			
413.	36316 <i>Cladophora herpestica</i>			
414.	26653 <i>Cladophora laetevirens</i>			
415.	26654 <i>Cladophora lehmanniana</i>			
416.	26658 <i>Cladophora vagabunda</i>			
417.	26659 <i>Cladophora valonioides</i>			
418.	26663 <i>Cladurus elatus</i>			
419.	26665 <i>Claviconium ovatum</i>			
420.	10804 <i>Clematis linearifolia</i>			
421.	2929 <i>Clematis pubescens</i> (Common Clematis)			
422.	26667 <i>Codiophyllum flabelliforme</i>			
423.	26668 <i>Codium australasicum</i>			
424.	26671 <i>Codium duthieae</i>			
425.	26672 <i>Codium galeatum</i>			
426.	26674 <i>Codium harveyi</i>			
427.	26675 <i>Codium laminarioides</i>			
428.	26677 <i>Codium mamillosum</i>			
429.	26678 <i>Codium muelleri</i>			
430.	26682 <i>Codium spinescens</i>			
431.	26683 <i>Codium spongiosum</i>			
432.	26687 <i>Coeloclonium debile</i>			Y
433.	26688 <i>Coeloclonium tasmanicum</i>			
434.	26689 <i>Coeloclonium umbellula</i>			
435.	26690 <i>Coeloclonium verticillatum</i>			
436.	49139 <i>Colaonema daviesii</i>			
437.	44593 <i>Coleonema pulchellum</i>	Y		
438.	4550 <i>Comesperma calymega</i> (Blue-spike Milkwort)			
439.	4551 <i>Comesperma ciliatum</i>			
440.	4552 <i>Comesperma confertum</i>			
441.	4555 <i>Comesperma integerrimum</i>			
442.	15516 <i>Conospermum canaliculatum</i> subsp. <i>canaliculatum</i>			
443.	1875 <i>Conospermum huegelii</i> (Slender Smokebush)			
444.	15520 <i>Conospermum stoechadis</i> subsp. <i>sclerophyllum</i>			
445.	15611 <i>Conospermum stoechadis</i> subsp. <i>stoechadis</i> (Common Smokebush)			
446.	1885 <i>Conospermum triplinervium</i> (Tree Smokebush)			
447.	6348 <i>Conostephium pendulum</i> (Pearl Flower)			
448.	6349 <i>Conostephium preissii</i>			
449.	1418 <i>Conostylis aculeata</i> (Prickly Conostylis)			
450.	11826 <i>Conostylis aculeata</i> subsp. <i>aculeata</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
451.	11513 <i>Conostylis aculeata</i> subsp. <i>cygnorum</i>			
452.	12109 <i>Conostylis aculeata</i> subsp. <i>preissii</i>			
453.	1423 <i>Conostylis aurea</i> (Golden <i>Conostylis</i>)			
454.	1427 <i>Conostylis candicans</i> (Grey Cottonhead)			
455.	12027 <i>Conostylis candicans</i> subsp. <i>callicola</i>			
456.	11438 <i>Conostylis candicans</i> subsp. <i>candicans</i>			
457.	1436 <i>Conostylis juncea</i>			
458.	1454 <i>Conostylis setigera</i> (Bristly Cottonhead)			
459.	11597 <i>Conostylis setigera</i> subsp. <i>setigera</i>			
460.	1455 <i>Conostylis setosa</i> (White Cottonhead)			
461.	17361 <i>Convolvulus sabatius</i> subsp. <i>mauritanicus</i>	Y		Y
462.	7939 <i>Conyza bonariensis</i> (Flaxleaf Fleabane)	Y		
463.	16391 <i>Conyza canadensis</i> var. <i>canadensis</i>	Y		Y
464.	7941 <i>Conyza parva</i>	Y		
465.	20074 <i>Conyza sumatrensis</i>	Y		
466.	2891 <i>Corrigiola litoralis</i> (Strapwort)	Y		
467.	48259 <i>Cortaderia selloana</i> subsp. <i>selloana</i>	Y		
468.	17104 <i>Corymbia calophylla</i> (Marri)			
469.	44790 <i>Corymbia citriodora</i>	Y		
470.	44791 <i>Corymbia maculata</i>	Y		
471.	1285 <i>Corynotheca micrantha</i> (Sand Lily)			
472.	11883 <i>Corynotheca micrantha</i> var. <i>elongata</i>			
473.	11283 <i>Corynotheca micrantha</i> var. <i>micrantha</i>			
474.	38383 <i>Cosmos bipinnatus</i> (Cosmos)	Y		Y
475.	18320 <i>Cotoneaster pannosus</i>	Y		
476.	7943 <i>Cotula australis</i> (Common Cotula)			
477.	7945 <i>Cotula coronopifolia</i> (Waterbuttons)	Y		
478.	7946 <i>Cotula cotuloides</i> (Smooth Cotula)			
479.	7947 <i>Cotula turbinata</i> (Funnel Weed)	Y		
480.	26701 <i>Craspedocarpus blepharicarpus</i>			
481.	3136 <i>Crassula alata</i>	Y		
482.	11221 <i>Crassula alata</i> var. <i>alata</i>	Y		
483.	3137 <i>Crassula colorata</i> (Dense Stonecrop)			
484.	11709 <i>Crassula colorata</i> var. <i>acuminata</i>			
485.	11563 <i>Crassula colorata</i> var. <i>colorata</i>			
486.	3138 <i>Crassula decumbens</i> (Rufous Stonecrop)			
487.	11349 <i>Crassula decumbens</i> var. <i>decumbens</i>			
488.	3139 <i>Crassula exserta</i>			
489.	3140 <i>Crassula glomerata</i>	Y		
490.	15706 <i>Crassula natans</i> var. <i>minus</i>	Y		
491.	3146 <i>Crassula thunbergiana</i>	Y		
492.	11345 <i>Crassula thunbergiana</i> subsp. <i>thunbergiana</i>	Y		
493.	29054 <i>Crepis foetida</i> subsp. <i>foetida</i> (Stinking Hawksbeard)	Y		
494.	35838 <i>Cristonia biloba</i> subsp. <i>biloba</i>			
495.	4792 <i>Cryptandra arbutiflora</i> (Waxy Cryptandra)			
496.	13470 <i>Cryptandra arbutiflora</i> var. <i>arbutiflora</i>			
497.	13484 <i>Cryptandra arbutiflora</i> var. <i>tubulosa</i>			
498.	4802 <i>Cryptandra mutila</i>			
499.	4810 <i>Cryptandra scoparia</i>			
500.	13732 <i>Cuscuta campestris</i> (Golden dodder)	Y		
501.	6663 <i>Cuscuta epithymum</i> (Lesser Dodder, Greater Dodder)	Y		
502.	15114 <i>Cyanicula gemmata</i>			
503.	15404 <i>Cyanicula sericea</i>			
504.	40660 <i>Cycnogeton huegelii</i>			
505.	40661 <i>Cycnogeton lineare</i>			
506.	19625 <i>Cymbalaria muralis</i> subsp. <i>muralis</i>	Y		
507.	283 <i>Cynodon dactylon</i> (Couch)	Y		
508.	776 <i>Cyperus brevifolius</i> (Kyllinga Weed)	Y		
509.	783 <i>Cyperus congestus</i> (Dense Flat-sedge)	Y		
510.	792 <i>Cyperus eragrostis</i> (Umbrella Sedge)	Y		
511.	794 <i>Cyperus gymnocaulos</i> (Spiny Flat-sedge)			
512.	18318 <i>Cyperus involucratus</i>	Y		
513.	801 <i>Cyperus laevigatus</i>	Y		
514.	806 <i>Cyperus polystachyos</i> (Bunchy Sedge)			
515.	816 <i>Cyperus tenuiflorus</i> (Scaly Sedge)	Y		
516.	818 <i>Cyperus vaginatus</i> (Stiffleaf Sedge)			
517.	10916 <i>Cyrtostylis huegelii</i>			
518.	10964 <i>Cyrtostylis robusta</i>			
519.	289 <i>Dactyloctenium australe</i> (Sweet Smother Grass)	Y		
520.	7454 <i>Dampiera linearis</i> (Common Dampiera)			

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521.	5508 <i>Darwinia citriodora</i> (Lemon-scented Darwinia)			
522.	26735 <i>Dasya cliffonii</i>			
523.	26738 <i>Dasya elongata</i>			
524.	26748 <i>Dasya scopulifera</i>			Y
525.	26751 <i>Dasyclonium flaccidum</i>			
526.	26752 <i>Dasyclonium incisum</i>			
527.	1218 <i>Dasyogon bromeliifolius</i> (Pineapple Bush)			
528.	10823 <i>Datura innoxia</i>	Y		
529.	6963 <i>Datura metel</i> (Downy Thornapple)	Y		
530.	6964 <i>Datura stramonium</i> (Common Thornapple)	Y		
531.	6218 <i>Daucus glochidiatus</i> (Australian Carrot)			
532.	3793 <i>Daviesia angulata</i>			
533.	3805 <i>Daviesia decurrens</i> (Prickly Bitter-pea)			
534.	19747 <i>Daviesia decurrens</i> subsp. <i>decurrens</i>			
535.	3807 <i>Daviesia divaricata</i> (Marno)			
536.	18560 <i>Daviesia divaricata</i> subsp. <i>divaricata</i>			
537.	11879 <i>Daviesia hakeoides</i> subsp. <i>hakeoides</i>			
538.	3815 <i>Daviesia horrida</i> (Prickly Bitter-pea)			
539.	15505 <i>Daviesia incrassata</i> subsp. <i>incrassata</i>			
540.	16585 <i>Daviesia nudiflora</i> subsp. <i>nudiflora</i>			
541.	3832 <i>Daviesia physodes</i>			
542.	3845 <i>Daviesia triflora</i>			
543.	26757 <i>Delisea pulchra</i>			
544.	17663 <i>Desmocladius asper</i>			
545.	17691 <i>Desmocladius fasciculatus</i>			
546.	16595 <i>Desmocladius flexuosus</i>			
547.	1259 <i>Dianella revoluta</i> (Blueberry Lily)			
548.	11636 <i>Dianella revoluta</i> var. <i>divaricata</i>			
549.	306 <i>Dichelachne crinita</i> (Longhair Plumegrass)			
550.	1287 <i>Dichopogon capillipes</i>			
551.	1289 <i>Dichopogon preissii</i>			
552.	18549 <i>Dicrastylis soliparma</i>			
553.	26762 <i>Dictyomenia sonderi</i>			
554.	26763 <i>Dictyomenia tridens</i>			
555.	32345 <i>Didymodon australasiae</i>			
556.	32346 <i>Didymodon torquatus</i>			
557.	311 <i>Digitaria ciliaris</i> (Summer Grass)	Y		
558.	18667 <i>Digitaria eriantha</i>	Y		
559.	320 <i>Digitaria sanguinalis</i> (Crab Grass)	Y		
560.	321 <i>Digitaria violascens</i>	Y		Y
561.	1509 <i>Dioscorea hastifolia</i> (Warrine, Warram)			
562.	4453 <i>Diplolaena angustifolia</i> (Yanchep Rose)			
563.	4746 <i>Diplopeltis huegelii</i>			
564.	18541 <i>Diplopeltis huegelii</i> subsp. <i>huegelii</i>			
565.	18589 <i>Diplopeltis huegelii</i> subsp. <i>lehmannii</i>			
566.	3011 <i>Diplotaxis muralis</i> (Wall Rocket)	Y		
567.	3012 <i>Diplotaxis tenuifolia</i> (Sand Rocket)	Y		
568.	19649 <i>Disa bracteata</i>	Y		
569.	7054 <i>Dischisma arenarium</i>	Y		
570.	7055 <i>Dischisma capitatum</i> (Woolly-headed Dischisma)	Y		
571.	48737 <i>Distimake dissectus</i>	Y		Y
572.	7961 <i>Dittrichia graveolens</i> (Stinkwort)	Y		
573.	11049 <i>Diuris corymbosa</i>			
574.	42231 <i>Diuris decremента</i>			
575.	1634 <i>Diuris laxiflora</i> (Bee Orchid)			
576.	1635 <i>Diuris longifolia</i> (Common Donkey Orchid)			
577.	12939 <i>Diuris magnifica</i>			
578.	4754 <i>Dodonaea aptera</i> (Coast Hop-bush)			
579.	2800 <i>Drosanthemum candens</i> (Redondo Creeper)	Y		
580.	48751 <i>Drosera drummondii</i>			
581.	3095 <i>Drosera erythrorhiza</i> (Red Ink Sundew)			
582.	3097 <i>Drosera gigantea</i> (Giant Sundew)			
583.	3098 <i>Drosera glanduligera</i> (Pimpernel Sundew)			
584.	48768 <i>Drosera hirsuta</i>			
585.	3106 <i>Drosera macrantha</i> (Bridal Rainbow)			
586.	3109 <i>Drosera menziesii</i> (Pink Rainbow)			
587.	3110 <i>Drosera microphylla</i> (Golden Rainbow)			
588.	3114 <i>Drosera nitidula</i> (Shining Sundew)			
589.	3118 <i>Drosera pallida</i> (Pale Rainbow)			
590.	29178 <i>Drosera porrecta</i>			

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591.	3128 <i>Drosera ramellosa</i> (Branched Sundew)			
592.	8911 <i>Drosera rosulata</i>			
593.	49090 <i>Drosera</i> sp. <i>Branched styles</i> (S.C. Coffey 193)			
594.	13185 <i>Drosera spilos</i>			
595.	3131 <i>Drosera stolonifera</i> (Leafy Sundew)			
596.	33500 <i>Dysphania ambrosioides</i> (Mexican Tea)	Y		
597.	11368 <i>Dysphania glomulifera</i> subsp. <i>glomulifera</i>			
598.	33517 <i>Dysphania multifida</i> (Scented Goosefoot)	Y		
599.	328 <i>Echinochloa colona</i> (Awnless Barnyard Grass)	Y		
600.	11105 <i>Echinochloa crus-galli</i>	Y		
601.	329 <i>Echinochloa crus-pavonis</i> (South American Barnyard Grass)	Y		
602.	338 <i>Echinochloa telmatophila</i> (Swamp Barnyard Grass)	Y		
603.	26803 <i>Echinothamnion hystrix</i>			
604.	6681 <i>Echium plantagineum</i> (Paterson's Curse)	Y		
605.	8450 <i>Eclipta prostrata</i>	Y		
606.	159 <i>Egeria densa</i> (Dense Waterweed)	Y		
607.	346 <i>Ehrharta brevifolia</i> (Annual Veldt Grass)	Y		
608.	11818 <i>Ehrharta brevifolia</i> var. <i>brevifolia</i>	Y		
609.	11485 <i>Ehrharta brevifolia</i> var. <i>cuspidata</i>	Y		
610.	347 <i>Ehrharta calycina</i> (Perennial Veldt Grass)	Y		
611.	349 <i>Ehrharta longiflora</i> (Annual Veldt Grass)	Y		
612.	353 <i>Eleusine indica</i> (Crowsfoot Grass)	Y		
613.	1643 <i>Elythranthera brunonis</i> (Purple Enamel Orchid)			
614.	11756 <i>Epilobium billardioreanum</i> subsp. <i>cinereum</i> (Variable Willow Herb)			
615.	11992 <i>Epilobium billardioreanum</i> subsp. <i>intermedium</i>			
616.	6132 <i>Epilobium ciliatum</i>	Y		
617.	6133 <i>Epilobium hirtigerum</i> (Hairy Willow Herb)			
618.	6134 <i>Epilobium tetragonum</i> (Square-stalked Willowherb)	Y		
619.	14289 <i>Epilobium tetragonum</i> subsp. <i>tetragonum</i>	Y		
620.	374 <i>Eragrostis cilianensis</i> (Stinkgrass)	Y		
621.	376 <i>Eragrostis curvula</i> (African Lovegrass)	Y		
622.	13950 <i>Eremaea asterocarpa</i> subsp. <i>asterocarpa</i>			
623.	5541 <i>Eremaea pauciflora</i>			
624.	14104 <i>Eremaea pauciflora</i> var. <i>pauciflora</i>			
625.	7215 <i>Eremophila glabra</i> (Tar Bush)			
626.	17175 <i>Eremophila glabra</i> subsp. <i>albicans</i>			
627.	415 <i>Eriachne ovata</i>			
628.	7968 <i>Erigeron karvinskianus</i>	Y		
629.	15412 <i>Eriochilus dilatatus</i> subsp. <i>multiflorus</i>			
630.	15414 <i>Eriochilus helonomos</i>			
631.	4332 <i>Erodium botrys</i> (Long Storksbill)	Y		
632.	4333 <i>Erodium cicutarium</i> (Common Storksbill)	Y		
633.	4336 <i>Erodium moschatum</i> (Musky Crowfoot)	Y		
634.	6219 <i>Eryngium pinnatifidum</i> (Blue Devils)			
635.	26821 <i>Erythroclonium muelleri</i>			
636.	26822 <i>Erythroclonium sedoides</i>			
637.	26823 <i>Erythroclonium sonderi</i>			
638.	12895 <i>Eucalyptus arachnaea</i> subsp. <i>arachnaea</i>			
639.	35345 <i>Eucalyptus camaldulensis</i> subsp. <i>obtusata</i> (Blunt-budded River Red Gum)			
640.	48189 <i>Eucalyptus cladocalyx</i> subsp. <i>petila</i>	Y		Y
641.	5615 <i>Eucalyptus decipiens</i> (Limestone Marlock, Moit)			
642.	5638 <i>Eucalyptus erythrocorys</i> (Illyarrie)			
643.	5649 <i>Eucalyptus foecunda</i> (Narrow-leaved Red Mallee)			
644.	5659 <i>Eucalyptus gomphocephala</i> (Tuart, Duart)			
645.	5708 <i>Eucalyptus marginata</i> (Jarrah, Djara)			
646.	13547 <i>Eucalyptus marginata</i> subsp. <i>marginata</i> (Jarrah)			
647.	13541 <i>Eucalyptus petrensis</i>			
648.	5763 <i>Eucalyptus rudis</i> (Flooded Gum, Kulurda)			
649.	5790 <i>Eucalyptus todtiana</i> (Coastal Blackbutt)			
650.	18085 <i>Eucalyptus utilis</i>			
651.	3872 <i>Euchilopsis linearis</i> (Swamp Pea)			
652.	17342 <i>Euphorbia cyathophora</i>	Y		
653.	4624 <i>Euphorbia dendroides</i>	Y		
654.	4627 <i>Euphorbia helioscopia</i> (Sun Spurge)	Y		
655.	34160 <i>Euphorbia lathyris</i> (Caper Spurge)	Y		
656.	29940 <i>Euphorbia maculata</i>	Y		
657.	4633 <i>Euphorbia marginata</i> (Snow-on-the-mountain)	Y		
658.	4636 <i>Euphorbia paralias</i> (Sea Spurge)	Y		
659.	4638 <i>Euphorbia peplus</i> (Petty Spurge)	Y		
660.	4648 <i>Euphorbia terracina</i> (Geraldton Carnation Weed)	Y		

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661.	26829 <i>Euptilocladia spongiosa</i>			
662.	26830 <i>Euptilota articulata</i>			
663.	429 <i>Eustachys distichophylla</i> (Evergreen Chloris)	Y		
664.	3880 <i>Eutaxia virgata</i>			
665.	10765 <i>Exocarpos sparteus</i> (Broom Ballart, Djuk)			
666.	8850 <i>Fallopia convolvulus</i>	Y		
667.	1515 <i>Ferraria crispa</i> (Black Flag)	Y		
668.	11445 <i>Ferraria crispa</i> subsp. <i>crispa</i>	Y		
669.	433 <i>Festuca rubra</i> (Red Fescue)	Y		
670.	20216 <i>Ficinia nodosa</i> (Knotted Club Rush)			
671.	1747 <i>Ficus carica</i> (Common Fig)	Y		
672.	<i>Ficus macrophylla</i>			
673.	894 <i>Fimbristylis velata</i>			
674.	32466 <i>Fissidens curvatus</i> var. <i>curvatus</i>			
675.	32367 <i>Fissidens megalotis</i>			
676.	6221 <i>Foeniculum vulgare</i> (Fennel)	Y		
677.	5209 <i>Frankenia pauciflora</i> (Seaheath)			
678.	5213 <i>Frankenia tetrapetala</i> (Four Petaled Frankenia)			
679.	18392 <i>Freesia alba</i> x <i>leichtlinii</i>	Y		
680.	8365 <i>Fumaria bastardii</i>	Y		
681.	2969 <i>Fumaria capreolata</i> (Whiteflower Fumitory)	Y		
682.	2970 <i>Fumaria densiflora</i> (Denseflower Fumitory)	Y		
683.	2971 <i>Fumaria muralis</i> (Wall Fumitory)	Y		
684.	31532 <i>Fumaria muralis</i> subsp. <i>muralis</i>	Y		
685.	32370 <i>Fumaria hygrometrica</i>			
686.	18378 <i>Furcraea foetida</i>	Y		Y
687.	18406 <i>Furcraea selloa</i>	Y		
688.	48872 <i>Fushitsunagia catenata</i>	Y		Y
689.	902 <i>Gahnia decomposita</i>			
690.	907 <i>Gahnia trifida</i> (Coast Saw-sedge)			
691.	7976 <i>Galinsoga parviflora</i> (Potato Weed)	Y		
692.	17348 <i>Galium aparine</i> (Goosegrass)	Y		
693.	7321 <i>Galium divaricatum</i>	Y		
694.	7323 <i>Galium murale</i> (Small Goosegrass)	Y		
695.	20346 <i>Gamochoaeta coarctata</i>	Y		
696.	19195 <i>Gamochoaeta pensylvanica</i>	Y		
697.	20475 <i>Gastrolobium capitatum</i>			
698.	20473 <i>Gastrolobium ebracteolatum</i>			
699.	20483 <i>Gastrolobium linearifolium</i>			
700.	20482 <i>Gastrolobium nervosum</i>			
701.	20512 <i>Gastrolobium praemorsum</i>			
702.	3924 <i>Gastrolobium spinosum</i> (Prickly Poison)			
703.	16311 <i>Gazania linearis</i>	Y		
704.	26845 <i>Gelidiopsis intricata</i>			
705.	26849 <i>Gelidium pusillum</i>			
706.	26850 <i>Gelinaria ulvoidea</i>			
707.	32376 <i>Gemmabryum dichotomum</i>			
708.	32380 <i>Gemmabryum pachythecum</i>			
709.	32381 <i>Gemmabryum preissianum</i>			
710.	4339 <i>Geranium molle</i> (Dove's Foot Cranesbill)	Y		
711.	4341 <i>Geranium solanderi</i> (Native Geranium)			
712.	26854 <i>Gigartina disticha</i>			
713.	1518 <i>Gladiolus angustus</i> (Long Tubed Painted Lady)	Y		
714.	1520 <i>Gladiolus caryophyllaceus</i> (Wild Gladiolus)	Y		
715.	1524 <i>Gladiolus undulatus</i> (Wild Gladiolus)	Y		
716.	29836 <i>Glandularia aristigera</i>	Y		
717.	46135 <i>Glebionis coronaria</i> (Summer Chrysanthemum)	Y		
718.	3663 <i>Gleditsia triacanthos</i> (Honey Locust)	Y		
719.	33620 <i>Glischrocaryon angustifolium</i>			
720.	6143 <i>Glischrocaryon aureum</i> (Common Popflower)			
721.	26860 <i>Gloiocladia halymenioides</i>			
722.	26864 <i>Gloiosaccion brownii</i>			
723.	12624 <i>Gnephosis angianthoides</i>			
724.	8002 <i>Gnephosis tenuissima</i>			
725.	6587 <i>Gomphocarpus fruticosus</i> (Narrowleaf Cottonbush)	Y		
726.	11051 <i>Gomphocarpus physocarpus</i>	Y		
727.	3945 <i>Gompholobium aristatum</i>			
728.	10909 <i>Gompholobium confertum</i>			
729.	3954 <i>Gompholobium polymorphum</i>			
730.	3956 <i>Gompholobium shuttleworthii</i>			

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731.	3957 <i>Gompholobium tomentosum</i> (Hairy Yellow Pea)			
732.	6161 <i>Gonocarpus pithyoides</i>			
733.	7534 <i>Goodenia piniifolia</i> (Pine-leaved Goodenia)			
734.	19286 <i>Goodenia pulchella</i> subsp. Coastal Plain A (M. Hislop 634)			
735.	7546 <i>Goodenia scapigera</i> (White Goodenia)			
736.	26868 <i>Gracilaria cliftonii</i>			
737.	26671 <i>Gracilaria flagelliformis</i>			
738.	26872 <i>Gracilaria preissiana</i>			
739.	<i>Gracilaria ramulosa</i>			
740.	26676 <i>Gracilaria verrucosa</i>			
741.	37500 <i>Grammatotheca bergiana</i> var. <i>bergiana</i>	Y		
742.	26877 <i>Grateloupia filicina</i>			
743.	38120 <i>Grateloupia imbricata</i>	Y		
744.	36701 <i>Grateloupia subpectinata</i>			
745.	14282 <i>Gratiola pubescens</i>			
746.	19628 <i>Grevillea bipinnatifida</i> subsp. <i>bipinnatifida</i>			
747.	1982 <i>Grevillea crithmifolia</i>			
748.	1997 <i>Grevillea endlicheriana</i> (Spindly Grevillea)			
749.	13450 <i>Grevillea manglesii</i> subsp. <i>manglesii</i>			
750.	8836 <i>Grevillea obtusifolia</i> (Obtuse Leaved Grevillea)			
751.	2066 <i>Grevillea pilulifera</i> (Woolly-flowered Grevillea)			
752.	15839 <i>Grevillea preissii</i> subsp. <i>preissii</i>			
753.	14421 <i>Grevillea synapheae</i> subsp. <i>synapheae</i>			
754.	2119 <i>Grevillea vestita</i>			
755.	12824 <i>Grevillea vestita</i> subsp. <i>vestita</i>			
756.	26880 <i>Griffithsia corallinoides</i>			Y
757.	26881 <i>Griffithsia crassiuscula</i>			Y
758.	26883 <i>Griffithsia monilis</i>			
759.	26886 <i>Griffithsia teges</i>			
760.	5014 <i>Guichenotia sarotes</i>			
761.	32390 <i>Gymnostomum calcareum</i>			
762.	2784 <i>Gyrostemon ramulosus</i> (Corkybark)			
763.	1468 <i>Haemodorum laxum</i>			
764.	1470 <i>Haemodorum paniculatum</i> (Mardja)			
765.	1475 <i>Haemodorum spicatum</i> (Mardja)			
766.	2135 <i>Hakea bucculenta</i> (Red Pokers)			
767.	2136 <i>Hakea candolleana</i>			
768.	2143 <i>Hakea conchifolia</i> (Shell-leaved Hakea)			
769.	2146 <i>Hakea costata</i> (Ribbed Hakea)			
770.	2166 <i>Hakea incrassata</i> (Marble Hakea)			
771.	2175 <i>Hakea lissocarpha</i> (Honey Bush)			
772.	2185 <i>Hakea myrtooides</i> (Myrtle Hakea)			
773.	2194 <i>Hakea petiolaris</i> (Sea Urchin Hakea)			
774.	2197 <i>Hakea prostrata</i> (Harsh Hakea)			
775.	2203 <i>Hakea ruscifolia</i> (Candle Hakea)			
776.	2214 <i>Hakea trifurcata</i> (Two-leaf Hakea)			
777.	2215 <i>Hakea undulata</i> (Wavy-leaved Hakea)			
778.	2216 <i>Hakea varia</i> (Variable-leaved Hakea)			
779.	47213 <i>Halimeda versatilis</i>			
780.	48568 <i>Halopeltis australis</i>			
781.	164 <i>Halophila ovalis</i> (Sea Wrack)			
782.	26900 <i>Haloplegma preissii</i>			
783.	26903 <i>Halydictyon arachnoideum</i>			
784.	3961 <i>Hardenbergia comptoniana</i> (Native Wisteria)			
785.	8008 <i>Helianthus annuus</i> (Sunflower, Common Sunflower)	Y		
786.	12016 <i>Helianthus debilis</i> subsp. <i>cucumerifolius</i>	Y		
787.	3016 <i>Heliophila pusilla</i>	Y		
788.	6707 <i>Heliotropium curassavicum</i> (Smooth Heliotrope)			
789.	26912 <i>Helminthocladia australis</i>			
790.	26913 <i>Helminthora australis</i>			
791.	8084 <i>Helminthotheca echioides</i> (Ox-tongue, Prickly Ox-tongue)	Y		
792.	11451 <i>Hemarthria uncinata</i> var. <i>uncinata</i>			
793.	16933 <i>Hemiandra glabra</i>			
794.	6838 <i>Hemiandra linearis</i> (Speckled Snakebush)			
795.	6839 <i>Hemiandra pungens</i> (Snakebush)			
796.	6856 <i>Hemigenia incana</i> (Silky Hemigenia)			
797.	6871 <i>Hemigenia sericea</i> (Silky Hemigenia)			
798.	26915 <i>Hennedya crispa</i>			
799.	26919 <i>Herposiphonia rostrata</i>			
800.	1526 <i>Hesperantha falcata</i>	Y		

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801.	26927 <i>Heterodoxia denticulata</i>			
802.	26929 <i>Heterosiphonia callithamnium</i>			
803.	26930 <i>Heterosiphonia crassipes</i>			
804.	26934 <i>Heterosiphonia lawrenciana</i>			
805.	26936 <i>Heterosiphonia muelleri</i>			
806.	26938 <i>Heterosiphonia wrangelioides</i>			
807.	5112 <i>Hibbertia aurea</i>			
808.	5117 <i>Hibbertia cuneiformis</i> (Cutleaf Hibbertia)			
809.	20051 <i>Hibbertia diamesogenos</i>			
810.	5134 <i>Hibbertia huegeli</i>			
811.	5135 <i>Hibbertia hypericoides</i> (Yellow Buttercups)			
812.	45534 <i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>			
813.	5162 <i>Hibbertia racemosa</i> (Stalked Guinea Flower)			
814.	<i>Hibbertia</i> sp.			
815.	5172 <i>Hibbertia stellaris</i> (Orange Stars)			
816.	48381 <i>Hibbertia striata</i>			
817.	5173 <i>Hibbertia subvaginata</i>			
818.	5176 <i>Hibbertia vaginata</i>			
819.	48241 <i>Hibiscus diversifolius</i> subsp. <i>diversifolius</i>	Y		
820.	43080 <i>Hibiscus tridactylites</i>	Y		
821.	444 <i>Holcus lanatus</i> (Yorkshire Fog)	Y		
822.	6222 <i>Homalosciadium homalocarpum</i>			
823.	448 <i>Hordeum glaucum</i> (Northern Barley Grass)	Y		
824.	449 <i>Hordeum leporinum</i> (Barley Grass)	Y		
825.	451 <i>Hordeum vulgare</i> (Barley)	Y		
826.	3966 <i>Hovea pungens</i> (Devil's Pins, Puyenak)			
827.	3968 <i>Hovea trisperma</i> (Common Hovea)			
828.	12859 <i>Hovea trisperma</i> var. <i>trisperma</i>			
829.	12741 <i>Hyalosperma cotula</i>			
830.	5216 <i>Hybanthus calycinus</i> (Wild Violet)			
831.	166 <i>Hydrilla verticillata</i> (Water Thyme)			
832.	6224 <i>Hydrocotyle blepharocarpa</i>			
833.	6225 <i>Hydrocotyle bonariensis</i>	Y		
834.	6229 <i>Hydrocotyle diantha</i>			
835.	6232 <i>Hydrocotyle hispidula</i>			
836.	11546 <i>Hydrocotyle pilifera</i> var. <i>glabrata</i>			
837.	6241 <i>Hydrocotyle tetragonocarpa</i>			
838.	26960 <i>Hymenocladia chondricola</i>			
839.	26962 <i>Hymenocladia dactyloides</i>			
840.	452 <i>Hyparrhenia hirta</i> (Tambookie Grass)	Y		
841.	20043 <i>Hypericum canariense</i>	Y		
842.	5180 <i>Hypericum gramineum</i> (Small St John's Wort)			
843.	26966 <i>Hypnea charoides</i>			
844.	35898 <i>Hypnea musciformis</i>			
845.	26971 <i>Hypnea ramentacea</i>			
846.	26972 <i>Hypnea spinella</i>			
847.	26973 <i>Hypnea valentiae</i>			
848.	5817 <i>Hypocalymma angustifolium</i> (White Myrtle, Kudjid)			
849.	35070 <i>Hypocalymma angustifolium</i> subsp. Swan Coastal Plain (G.J. Keighery 16777)			
850.	5825 <i>Hypocalymma robustum</i> (Swan River Myrtle)			
851.	8086 <i>Hypochaeris glabra</i> (Smooth Catsear)	Y		
852.	9352 <i>Hypochaeris radicata</i> (Flat Weed, Cats-ear)	Y		
853.	1070 <i>Hypolaena exsulca</i>			
854.	1071 <i>Hypolaena fastigiata</i>			
855.	14363 <i>Ipomoea batatas</i>	Y		
856.	6620 <i>Ipomoea cairica</i> (Coast Morning Glory)	Y		
857.	6630 <i>Ipomoea indica</i> (Morning Glory)	Y		
858.	20200 <i>Isolepis cernua</i> var. <i>setiformis</i>			
859.	912 <i>Isolepis cyperoides</i>			
860.	917 <i>Isolepis marginata</i> (Coarse Club-rush)			
861.	2229 <i>Isopogon dubius</i> (Pincushion Coneflower)			
862.	2237 <i>Isopogon sphaerocephalus</i> (Drumstick Isopogon)			
863.	7396 <i>Isotoma hypocrateriformis</i> (Woodbridge Poison)			
864.	3992 <i>Isotropis cuneifolia</i> (Granny Bonnets)			
865.	19700 <i>Isotropis cuneifolia</i> subsp. <i>cuneifolia</i>			
866.	1532 <i>Ixia maculata</i> (Yellow Ixia)	Y		
867.	1533 <i>Ixia paniculata</i>	Y		
868.	1534 <i>Ixia polystachya</i> (Variable Ixia)	Y		
869.	4012 <i>Jacksonia furcellata</i> (Grey Stinkwood)			
870.	4018 <i>Jacksonia lehmannii</i>			

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871.	4029 <i>Jacksonia sternbergiana</i> (Stinkwood, Kapur)			
872.	26984 <i>Jania affinis</i>			
873.	26985 <i>Jania micranthrobia</i>			
874.	48292 <i>Jania rosea</i>			
875.	26988 <i>Jania verrucosa</i>			
876.	19632 <i>Johnsonia pubescens</i> subsp. <i>pubescens</i>			
877.	1175 <i>Juncus acutus</i> (Spiny Rush)	Y		
878.	1178 <i>Juncus bufonius</i> (Toad Rush)	Y		
879.	1184 <i>Juncus holoschoenus</i> (Jointleaf Rush)			
880.	1185 <i>Juncus kraussii</i> (Sea Rush)			
881.	11922 <i>Juncus kraussii</i> subsp. <i>australiensis</i>			
882.	1187 <i>Juncus oxycarpus</i>	Y		
883.	1188 <i>Juncus pallidus</i> (Pale Rush)			
884.	4037 <i>Kennedia coccinea</i> (Coral Vine)			
885.	4044 <i>Kennedia prostrata</i> (Scarlet Runner)			
886.	<i>Kennedia rubicunda</i>			
887.	4045 <i>Kennedia stirlingii</i> (Bushy Kennedia)			
888.	11898 <i>Kickxia elatine</i> subsp. <i>elatine</i>	Y		
889.	7068 <i>Kickxia spuria</i> (Roundleaf Toadflax)	Y		
890.	26995 <i>Kuetzingia canaliculata</i>			
891.	15498 <i>Kunzea glabrescens</i> (Spearwood)			
892.	17461 <i>Kunzea micrantha</i> subsp. <i>micrantha</i>			
893.	3667 <i>Labichea lanceolata</i> (Tall Labichea)			
894.	13562 <i>Lachenalia aloides</i>	Y		
895.	16091 <i>Lachenalia bulbifera</i>	Y		
896.	19707 <i>Lachenalia mutabilis</i>	Y		
897.	1370 <i>Lachenalia reflexa</i>	Y		
898.	20019 <i>Lachnagrostis filiformis</i>			
899.	17209 <i>Lachnostachys verbascifolia</i> var. <i>verbascifolia</i>			
900.	8095 <i>Lactuca saligna</i> (Wild Lettuce, Willow-leaf Lettuce)	Y		
901.	29046 <i>Lactuca serriola</i> forma <i>serriola</i>	Y		
902.	18585 <i>Lagenophora huegelii</i>			
903.	14646 <i>Lagunaria patersonia</i>	Y		
904.	467 <i>Lagurus ovatus</i> (Hare's Tail Grass)	Y		
905.	14083 <i>Lambertia multiflora</i> var. <i>darlingensis</i>			
906.	28342 <i>Landoltia punctata</i> (Thin Duckweed)			
907.	6733 <i>Lantana camara</i> (Common Lantana)	Y		
908.	17022 <i>Lantana camara</i> var. <i>camara</i>	Y		
909.	5034 <i>Lasiopetalum glabratum</i>			
910.	4047 <i>Lathyrus tingitanus</i> (Tangier Pea)	Y		
911.	26998 <i>Laurencia brongniartii</i>			
912.	26999 <i>Laurencia clavata</i>			
913.	27000 <i>Laurencia elata</i>			
914.	27001 <i>Laurencia filiformis</i>			
915.	27002 <i>Laurencia forsteri</i>			
916.	27007 <i>Laurencia obtusa</i>			
917.	38324 <i>Lavandula dentata</i> var. <i>candicans</i>	Y		
918.	13284 <i>Lawrencella rosea</i>			
919.	4958 <i>Lawrencella spicata</i>			
920.	11815 <i>Laxmannia grandiflora</i> subsp. <i>grandiflora</i>			
921.	11911 <i>Laxmannia ramosa</i> subsp. <i>ramosa</i>			
922.	11464 <i>Laxmannia sessiflora</i> subsp. <i>australis</i>			
923.	1309 <i>Laxmannia squarrosa</i>			
924.	7568 <i>Lechenaultia biloba</i> (Blue Leschenaultia)			
925.	7574 <i>Lechenaultia floribunda</i> (Free-flowering Leschenaultia)			
926.	7580 <i>Lechenaultia linarioides</i> (Yellow Leschenaultia)			
927.	48419 <i>Leiomenia cribrosa</i>			
928.	1051 <i>Lemna disperma</i> (Duckweed)			
929.	27011 <i>Lenormandia latifolia</i>			
930.	27013 <i>Lenormandia spectabilis</i>			
931.	6880 <i>Leonotis leonurus</i> (Lion's Ear)	Y		
932.	18312 <i>Leonotis nepetifolia</i>	Y		
933.	44490 <i>Leontodon rhagadioloides</i>	Y		
934.	8099 <i>Leontodon saxatilis</i> (Hairy Hawkbit)	Y		
935.	19989 <i>Lepidium didymum</i>	Y		
936.	3044 <i>Lepidium rotundum</i> (Veined Peppergrass)			
937.	1075 <i>Lepidobolus preissianus</i>			
938.	18074 <i>Lepidobolus preissianus</i> subsp. <i>preissianus</i>			
939.	925 <i>Lepidosperma angustatum</i>			
940.	41620 <i>Lepidosperma asperatum</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
941.	42742 <i>Lepidosperma calcicola</i>			
942.	930 <i>Lepidosperma costale</i>			
943.	933 <i>Lepidosperma gladiatum</i> (Coast Sword-sedge, Kerbin)			
944.	936 <i>Lepidosperma leptostachyum</i>			
945.	937 <i>Lepidosperma longitudinale</i> (Pithy Sword-sedge)			
946.	45753 <i>Lepidosperma oldhamii</i> (Oldham's Sword Sedge)			
947.	940 <i>Lepidosperma pubisquameum</i>			
948.	941 <i>Lepidosperma resinosum</i>			
949.	944 <i>Lepidosperma scabrum</i>			
950.	<i>Lepidosperma</i> sp.			
951.	945 <i>Lepidosperma squamatum</i>			
952.	946 <i>Lepidosperma striatum</i>			
953.	1653 <i>Leporella fimbriata</i> (Hare Orchid)			
954.	32398 <i>Leptobryum pyriforme</i>			
955.	1078 <i>Leptocarpus coangustatus</i>			
956.	46375 <i>Leptocarpus decipiens</i>			
957.	1082 <i>Leptocarpus tenax</i> (Slender Twine Rush)			
958.	15418 <i>Leptoceras menziesii</i>			
959.	2344 <i>Leptomeria empetriformis</i>			
960.	2350 <i>Leptomeria pauciflora</i> (Sparse-flowered Currant Bush)			
961.	2352 <i>Leptomeria preissiana</i>			
962.	5847 <i>Leptospermum erubescens</i> (Roadside Teatree)			
963.	5850 <i>Leptospermum laevigatum</i> (Coast Teatree)	Y		
964.	5857 <i>Leptospermum spinescens</i>			
965.	1090 <i>Lepyrodia muirii</i>			
966.	3613 <i>Leucaena leucocephala</i> (Leucaena)	Y		
967.	1493 <i>Leucojum aestivum</i> (Snowflake)	Y		
968.	16449 <i>Leucophyta brownii</i>			
969.	6360 <i>Leucopogon australis</i> (Spiked Beard-heath)			
970.	6374 <i>Leucopogon conostephioides</i>			
971.	6421 <i>Leucopogon oliganthus</i>			
972.	6427 <i>Leucopogon parviflorus</i> (Coast Beard-heath)			
973.	6434 <i>Leucopogon polymorphus</i>			
974.	6436 <i>Leucopogon propinquus</i>			
975.	6439 <i>Leucopogon pulchellus</i> (Beard-heath)			
976.	6440 <i>Leucopogon racemosus</i>			
977.	6444 <i>Leucopogon sprengelioides</i>			
978.	6454 <i>Leucopogon verticillatus</i> (Tassel Flower)			
979.	27018 <i>Leveillea jungermannioides</i>			
980.	7677 <i>Levenhookia stipitata</i> (Common Stylewort)			
981.	41780 <i>Limonium hyblaenum</i>	Y		
982.	4364 <i>Linum usitatissimum</i> (Flax)	Y		
983.	36160 <i>Liparophyllum capitatum</i>			
984.	9289 <i>Lobelia anceps</i> (Angled Lobelia)			
985.	7402 <i>Lobelia gibbosa</i> (Tall Lobelia)			
986.	7407 <i>Lobelia rhytidosperra</i> (Wrinkled-seeded Lobelia)			
987.	7408 <i>Lobelia tenuior</i> (Slender Lobelia)			
988.	3048 <i>Lobularia maritima</i> (Sweet Alyssum)	Y		
989.	6515 <i>Logania vaginalis</i> (White Spray)			
990.	8682 <i>Lolium loliaceum</i> (Stiff Ryegrass)	Y		
991.	475 <i>Lolium multiflorum</i> (Italian Ryegrass)	Y		
992.	476 <i>Lolium perenne</i> (Perennial Ryegrass)	Y		
993.	10957 <i>Lolium perenne x rigidum</i>	Y		
994.	477 <i>Lolium remotum</i> (Hardy Ryegrass)	Y		
995.	478 <i>Lolium rigidum</i> (Wimmera Ryegrass)	Y		
996.	<i>Lolium</i> sp.			
997.	11766 <i>Lolium temulentum forma arvense</i>	Y		
998.	11384 <i>Lolium temulentum forma temulentum</i>	Y		
999.	11073 <i>Lolium x hybridum</i>	Y		
1000.	1223 <i>Lomandra caespitosa</i> (Tufted Mat Rush)			
1001.	1228 <i>Lomandra hermaphrodita</i>			
1002.	1231 <i>Lomandra maritima</i>			
1003.	14542 <i>Lomandra micrantha subsp. micrantha</i>			
1004.	1234 <i>Lomandra nigricans</i>			
1005.	1236 <i>Lomandra odora</i> (Tiered Matrush)			
1006.	1239 <i>Lomandra preissii</i>			
1007.	1240 <i>Lomandra purpurea</i> (Purple Mat Rush)			
1008.	1244 <i>Lomandra sonderi</i>			
1009.	1245 <i>Lomandra spartea</i>			
1010.	1246 <i>Lomandra suaveolens</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1011.	4059 <i>Lotus angustissimus</i> (Narrowleaf Trefoil)	Y		
1012.	8564 <i>Lotus subbiflorus</i>	Y		
1013.	4063 <i>Lotus uliginosus</i> (Greater Lotus)	Y		
1014.	4065 <i>Lupinus angustifolius</i> (Narrowleaf Lupin)	Y		
1015.	4066 <i>Lupinus cosentinii</i>	Y		
1016.	4067 <i>Lupinus luteus</i> (Yellow Lupin)	Y		
1017.	1198 <i>Luzula meridionalis</i> (Field Woodrush)			
1018.	6968 <i>Lycium ferocissimum</i> (African Boxthorn)	Y		
1019.	1097 <i>Lyginia barbata</i>			
1020.	18049 <i>Lyginia imberbis</i>			
1021.	36375 <i>Lysimachia arvensis</i> (Pimpernel)	Y		
1022.	34736 <i>Lysinema pentapetalum</i>			
1023.	5281 <i>Lythrum hyssopifolia</i> (Lesser Loosestrife)	Y		
1024.	2839 <i>Macarthuria australis</i>			
1025.	18119 <i>Macrozamia fraseri</i>			
1026.	85 <i>Macrozamia riedlei</i> (Zamia, Djiridji)			
1027.	5866 <i>Malleostemon tuberculatus</i>			
1028.	36480 <i>Malva arborea</i> (Tree Mallow)	Y		
1029.	4961 <i>Malva parviflora</i> (Marshmallow)	Y		
1030.	36522 <i>Malva pseudolavatera</i>	Y		
1031.	<i>Marchantia berteroana</i>			
1032.	17633 <i>Marianthus erubescens</i>			
1033.	3049 <i>Matthiola incana</i> (Common Stock)	Y		
1034.	31237 <i>Mauranthemum paludosum</i>	Y		
1035.	27059 <i>Mazoyerella australis</i>			
1036.	4074 <i>Medicago laciniata</i> (Cutleaf Medic)	Y		
1037.	4075 <i>Medicago littoralis</i> (Strand Medic)	Y		
1038.	4077 <i>Medicago minima</i> (Small Burr Medic)	Y		
1039.	4079 <i>Medicago polymorpha</i> (Burr Medic)	Y		
1040.	4080 <i>Medicago sativa</i> (Alfalfa)	Y		
1041.	34676 <i>Meionectes brownii</i> (Swamp Raspwort)			
1042.	36296 <i>Melaleuca armillaris</i> subsp. <i>armillaris</i>	Y		
1043.	5884 <i>Melaleuca calothamnoides</i>			
1044.	5887 <i>Melaleuca cardiophylla</i> (Tangling Melaleuca)			
1045.	5900 <i>Melaleuca cuticularis</i> (Saltwater Paperbark)			
1046.	15603 <i>Melaleuca fulgens</i> subsp. <i>fulgens</i>			
1047.	5920 <i>Melaleuca huegelii</i> (Chenille Honeymyrtle)			
1048.	13271 <i>Melaleuca huegelii</i> subsp. <i>huegelii</i>			
1049.	5922 <i>Melaleuca lanceolata</i> (Rottnest Teatree, Moonah)			
1050.	5926 <i>Melaleuca lateritia</i> (Robin Redbreast Bush)			
1051.	5936 <i>Melaleuca megacephala</i>			
1052.	5943 <i>Melaleuca nesophila</i> (Mindiyed)			
1053.	18394 <i>Melaleuca parviceps</i>			
1054.	15993 <i>Melaleuca pentagona</i> var. <i>pentagona</i>			
1055.	5952 <i>Melaleuca preissiana</i> (Moonah)			
1056.	48990 <i>Melaleuca quinquenervia</i>	Y		
1057.	5959 <i>Melaleuca raphiophylla</i> (Swamp Paperbark)			
1058.	19365 <i>Melaleuca ryeae</i>			
1059.	5964 <i>Melaleuca seriata</i>			
1060.	18598 <i>Melaleuca systema</i>			
1061.	5978 <i>Melaleuca teretifolia</i> (Banbar)			
1062.	5980 <i>Melaleuca thymoides</i>			
1063.	5983 <i>Melaleuca trichophylla</i>			
1064.	5987 <i>Melaleuca viminea</i> (Mohan)			
1065.	13280 <i>Melaleuca viminea</i> subsp. <i>viminea</i>			
1066.	4516 <i>Melia azedarach</i> (White Cedar)			
1067.	4084 <i>Melilotus albus</i>	Y		
1068.	4085 <i>Melilotus indicus</i>	Y		
1069.	14985 <i>Melinis repens</i>	Y		
1070.	6884 <i>Mentha spicata</i> (Spearmint)	Y		
1071.	15994 <i>Mentha x piperita</i> var. <i>citrata</i>	Y		
1072.	955 <i>Mesomelaena pseudostygia</i>			
1073.	957 <i>Mesomelaena tetragona</i> (Semaphore Sedge)			
1074.	27068 <i>Metagoniolithon radiatum</i>			
1075.	485 <i>Microlaena stipoides</i> (Weeping Grass)			
1076.	10954 <i>Microtis media</i> (Tall Mignonette Orchid)			
1077.	15419 <i>Microtis media</i> subsp. <i>media</i>			
1078.	8105 <i>Millotia myosotidifolia</i>			
1079.	16693 <i>Minuartia mediterranea</i>	Y		
1080.	18322 <i>Mirabilis jalapa</i>	Y		

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1081.	4091 <i>Mirbelia floribunda</i> (Purple Mirbelia)			
1082.	486 <i>Miscanthus sinensis</i> (Eulalia)	Y		
1083.	7085 <i>Misopates orontium</i> (Lesser Snapdragon)	Y		
1084.	2894 <i>Moenchia erecta</i> (Erect Chickweed)	Y		
1085.	29418 <i>Monoculus monstrosus</i>	Y		
1086.	37440 <i>Monopsis debilis</i> var. <i>depressa</i>	Y		
1087.	4662 <i>Monotaxis grandiflora</i> (Diamond of the Desert)			
1088.	19585 <i>Monotaxis grandiflora</i> var. <i>grandiflora</i>			
1089.	4666 <i>Monotaxis occidentalis</i>			
1090.	19179 <i>Moraea flaccida</i> (One-leaf Cape Tulip)	Y		
1091.	19177 <i>Moraea setifolia</i>	Y		
1092.	17503 <i>Morus alba</i>	Y		Y
1093.	1371 <i>Muscari comosum</i> (Tufted Grape Hyacinth)	Y		
1094.	27077 <i>Mychodea aciculare</i>			
1095.	27079 <i>Mychodea carnosus</i>			
1096.	7289 <i>Myoporum caprarioides</i> (Slender Myoporum)			
1097.	7291 <i>Myoporum insulare</i> (Blueberry Tree, boobialla)			
1098.	6199 <i>Myriophyllum tillaeoides</i>			
1099.	138 <i>Najas marina</i> (Prickly Water Nymph)			
1100.	11019 <i>Narcissus papyraceus</i>	Y		
1101.	44494 <i>Narcissus tazetta</i> subsp. <i>aureus</i>	Y		
1102.	44496 <i>Narcissus tazetta</i> subsp. <i>italicus</i>	Y		
1103.	44495 <i>Narcissus tazetta</i> subsp. <i>tazetta</i>	Y		
1104.	6464 <i>Needhamiella pumilio</i>			
1105.	18356 <i>Nerium oleander</i>	Y		
1106.	27100 <i>Neurymenia fraxinifolia</i>			
1107.	6974 <i>Nicotiana glauca</i> (Tree Tobacco)	Y		
1108.	27103 <i>Nizymenia conferta</i>			
1109.	1381 <i>Nothoscordum gracile</i>	Y		
1110.	2401 <i>Nuytsia floribunda</i> (Christmas Tree, Mudja)			
1111.	6137 <i>Oenothera affinis</i> (Longflower Evening Primrose)	Y		
1112.	6138 <i>Oenothera drummondii</i> (Beach Evening Primrose)	Y		
1113.	16390 <i>Oenothera drummondii</i> subsp. <i>drummondii</i>	Y		
1114.	6139 <i>Oenothera glazioviana</i> (Evening Primrose)	Y		
1115.	16347 <i>Oenothera laciniata</i>	Y		
1116.	6141 <i>Oenothera speciosa</i> (White Evening Primrose)	Y		
1117.	14292 <i>Oenothera stricta</i> subsp. <i>stricta</i>	Y		
1118.	2365 <i>Olex benthamiana</i>			
1119.	6503 <i>Olea europaea</i> (Olive)	Y		
1120.	11937 <i>Olea europaea</i> subsp. <i>europaea</i>	Y		
1121.	8127 <i>Olearia axillaris</i> (Coastal Daisybush)			
1122.	8133 <i>Olearia elaeophila</i>			
1123.	8143 <i>Olearia paucidentata</i> (Autumn Scrub Daisy)			
1124.	8149 <i>Olearia rudis</i> (Rough Daisybush)			
1125.	42024 <i>Olearia</i> sp. Kennedy Range (G. Byrne 66)			
1126.	7348 <i>Opercularia hispidula</i> (Hispid Stinkweed)			
1127.	18255 <i>Opercularia vaginata</i> (Dog Weed)			
1128.	29276 <i>Opuntia monacantha</i> (Barbary Fig)	Y		
1129.	1372 <i>Ornithogalum arabicum</i> (Lesser Cape Lily)	Y		
1130.	4113 <i>Ornithopus compressus</i> (Yellow Serradella)	Y		
1131.	4115 <i>Ornithopus sativus</i> (French Serradella)	Y		
1132.	7122 <i>Orobanche minor</i> (Lesser Broomrape)	Y		
1133.	1537 <i>Orthrosanthus laxus</i> (Morning Iris)			
1134.	11749 <i>Orthrosanthus laxus</i> var. <i>laxus</i> (Morning Iris)			
1135.	27107 <i>Osmundaria prolifera</i>			
1136.	17756 <i>Osteospermum ecklonis</i>	Y		
1137.	4348 <i>Oxalis caprina</i>	Y		
1138.	4349 <i>Oxalis corniculata</i> (Yellow Wood Sorrel)	Y		
1139.	18331 <i>Oxalis debilis</i> var. <i>corymbosa</i> (Pink Shamrock)	Y		
1140.	4352 <i>Oxalis glabra</i>	Y		
1141.	4355 <i>Oxalis perennans</i>			
1142.	4356 <i>Oxalis pes-caprae</i> (Soursob)	Y		
1143.	4358 <i>Oxalis purpurea</i> (Largeflower Wood Sorrel)	Y		
1144.	32757 <i>Panicum repens</i>	Y		
1145.	2966 <i>Papaver somniferum</i> (Opium Poppy)	Y		
1146.	17114 <i>Paraserianthes lophantha</i> subsp. <i>lophantha</i>			
1147.	7089 <i>Parentucellia latifolia</i> (Common Bartsia)	Y		
1148.	12670 <i>Parietaria cardiostegia</i>			
1149.	1762 <i>Parietaria debilis</i> (Pellitory)			
1150.	1763 <i>Parietaria judaica</i> (Pellitory)	Y		

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1151.	19270 <i>Parthenocissus tricuspidata</i>	Y		Y
1152.	518 <i>Paspalidium clementii</i> (Clements Paspalidium)			
1153.	527 <i>Paspalum dilatatum</i>	Y		
1154.	528 <i>Paspalum distichum</i> (Water Couch)	Y		
1155.	14534 <i>Paspalum notatum</i>	Y		
1156.	533 <i>Paspalum vaginatum</i> (Salt Water Couch)			
1157.	5225 <i>Passiflora filamentosa</i>	Y		
1158.	6244 <i>Pastinaca sativa</i> (Wild Parsnip)	Y		
1159.	1550 <i>Patersonia occidentalis</i> (Purple Flag, Koma)			
1160.	30472 <i>Patersonia occidentalis</i> var. <i>occidentalis</i>			
1161.	43765 <i>Pauridia glabella</i> var. <i>glabella</i>			
1162.	43782 <i>Pauridia vaginata</i> var. <i>vaginata</i>			
1163.	10828 <i>Pavonia hastata</i>	Y		
1164.	4343 <i>Pelargonium capitatum</i> (Rose Pelargonium)	Y		
1165.	4345 <i>Pelargonium havlasae</i>			
1166.	4346 <i>Pelargonium littorale</i>			
1167.	18282 <i>Pelargonium x asperum</i>	Y		Y
1168.	11139 <i>Pelargonium x domesticum</i>	Y		
1169.	40422 <i>Pentameris pallida</i>	Y		
1170.	16477 <i>Pericalymma ellipticum</i> var. <i>ellipticum</i>			
1171.	16478 <i>Pericalymma ellipticum</i> var. <i>floridum</i>			
1172.	13911 <i>Persicaria decipiens</i>			
1173.	16984 <i>Persicaria lapathifolia</i>	Y		
1174.	2273 <i>Persoonia saccata</i> (Snottygobble)			
1175.	20368 <i>Petrophile axillaris</i>			
1176.	2286 <i>Petrophile brevifolia</i>			
1177.	48781 <i>Petrophile brevifolia</i> subsp. <i>brevifolia</i>			
1178.	2299 <i>Petrophile linearis</i> (Pixie Mops)			
1179.	2301 <i>Petrophile macrostachya</i>			
1180.	2308 <i>Petrophile seminuda</i>			
1181.	2309 <i>Petrophile serruriae</i>			
1182.	20053 <i>Petrophile squamata</i> subsp. <i>northern</i> (J. Monks 40)			
1183.	2312 <i>Petrophile striata</i>			
1184.	19825 <i>Petrotraghia dubia</i>	Y		
1185.	47240 <i>Petunia x atkinsiana</i>	Y		
1186.	27135 <i>Phacelocarpus sessilis</i>			
1187.	548 <i>Phalaris aquatica</i> (Phalaris)	Y		
1188.	550 <i>Phalaris canariensis</i> (Canary Grass)	Y		
1189.	551 <i>Phalaris minor</i> (Lesser Canary Grass)	Y		
1190.	20460 <i>Pheladenia deformis</i>			
1191.	18529 <i>Philothea spicata</i> (Pepper and Salt)			
1192.	14306 <i>Philydrella pygmaea</i> subsp. <i>pygmaea</i>			
1193.	1478 <i>Phlebocarya ciliata</i>			
1194.	1479 <i>Phlebocarya filifolia</i>			
1195.	553 <i>Phleum arenarium</i>	Y		
1196.	44540 <i>Phoenix canariensis</i> (Canary Islands Date Palm)	Y		
1197.	18197 <i>Phyla nodiflora</i>	Y		
1198.	6734 <i>Phyla nodiflora</i> var. <i>nodiflora</i>	Y		
1199.	4675 <i>Phyllanthus calycinus</i> (False Boronia)			
1200.	17794 <i>Phyllanthus tenellus</i>	Y		
1201.	13405 <i>Phyllopodium cordatum</i>	Y		
1202.	20652 <i>Physalis angulata</i>	Y		
1203.	2793 <i>Phytolacca octandra</i> (Red Ink Plant)	Y		
1204.	8160 <i>Picris squarrosa</i>			
1205.	5232 <i>Pimelea argentea</i> (Silvery Leaved Pimelea)			
1206.	5254 <i>Pimelea leucantha</i>			
1207.	5261 <i>Pimelea rosea</i> (Rose Banjine)			
1208.	18117 <i>Pimelea rosea</i> subsp. <i>rosea</i>			
1209.	5264 <i>Pimelea spectabilis</i> (Banjong)			
1210.	5268 <i>Pimelea sulphurea</i> (Yellow Banjine)			
1211.	5269 <i>Pimelea sylvestris</i>			
1212.	17671 <i>Pinus halepensis</i>	Y		
1213.	557 <i>Piptatherum miliaceum</i> (Rice Millet)	Y		
1214.	42281 <i>Pithocarpa cordata</i>			
1215.	19745 <i>Pittosporum ligustrifolium</i>			
1216.	16322 <i>Pittosporum undulatum</i>	Y		
1217.	11785 <i>Plantago coronopus</i> subsp. <i>commutata</i>	Y		
1218.	7303 <i>Plantago lanceolata</i> (Ribwort Plantain)	Y		
1219.	7304 <i>Plantago major</i> (Greater Plantain)	Y		
1220.	19512 <i>Platanus x hispanica</i>	Y		Y

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1221.	6253 <i>Platysace filiformis</i>			
1222.	4524 <i>Platytheca galioides</i>			
1223.	65 <i>Pleurosorus rutifolius</i> (Blanket Fern)			
1224.	27155 <i>Plocamium cartilagineum</i>			
1225.	27156 <i>Plocamium mertensii</i>			
1226.	27157 <i>Plocamium preissianum</i>			
1227.	571 <i>Poa annua</i> (Winter Grass)	Y		
1228.	572 <i>Poa bulbosa</i> (Bulbous Blue Grass)	Y		
1229.	573 <i>Poa drummondiana</i> (Knotted Poa)			
1230.	575 <i>Poa homomalla</i>			
1231.	577 <i>Poa poiformis</i> (Coastal Poa)			
1232.	578 <i>Poa porphyroclados</i>			
1233.	579 <i>Poa pratensis</i> (Kentucky Bluegrass)	Y		
1234.	8175 <i>Podolepis gracilis</i> (Slender Podolepis)			
1235.	8179 <i>Podolepis nutans</i> (Nodding Podolepis)			
1236.	8182 <i>Podotheca angustifolia</i> (Sticky Longheads)			
1237.	8183 <i>Podotheca chrysantha</i> (Yellow Podotheca)			
1238.	8184 <i>Podotheca gnaphalioides</i> (Golden Long-heads)			
1239.	27161 <i>Pollexfenia lobata</i>			
1240.	27162 <i>Pollexfenia pedicellata</i>			
1241.	2905 <i>Polycarpon tetraphyllum</i> (Fourleaf Allseed)	Y		
1242.	8395 <i>Polygala myrtifolia</i> (Myrtleleaf Milkwort)	Y		
1243.	2416 <i>Polygonum arenastrum</i> (Sand Wireweed)	Y		
1244.	2419 <i>Polygonum aviculare</i> (Wireweed)	Y		
1245.	582 <i>Polypogon monspeliensis</i> (Annual Beardgrass)	Y		
1246.	27173 <i>Polysiphonia decipiens</i>			
1247.	27180 <i>Polysiphonia subtilissima</i>			
1248.	18323 <i>Populus alba</i>	Y		
1249.	31695 <i>Populus nigra</i> cv. <i>italica</i>	Y		
1250.	4688 <i>Poranthera drummondii</i>			
1251.	4689 <i>Poranthera ericoides</i> (Heath Poranthera)			
1252.	4691 <i>Poranthera microphylla</i> (Small Poranthera)			
1253.	27184 <i>Porphyra lucasii</i>			
1254.	2884 <i>Portulaca oleracea</i> (Purslane, Wakati)			
1255.	123 <i>Posidonia australis</i> (Fibreball Weed)			
1256.	124 <i>Posidonia ostenfeldii</i>			
1257.	125 <i>Posidonia sinuosa</i>			
1258.	109 <i>Potamogeton crispus</i> (Curly Pondweed)			
1259.	111 <i>Potamogeton ochreatus</i> (Blunt Pondweed)			
1260.	1669 <i>Prasophyllum cyphochilum</i> (Pouched Leek Orchid)			
1261.	1671 <i>Prasophyllum elatum</i> (Tall Leek Orchid)			
1262.	1674 <i>Prasophyllum giganteum</i> (Bronze Leek Orchid)			
1263.	1676 <i>Prasophyllum hians</i> (Yawning Leek Orchid)			
1264.	10853 <i>Prasophyllum plumiforme</i>			
1265.	7121 <i>Proboscidea louisianica</i> (Purple Flower Devil's Claw)	Y		
1266.	36139 <i>Pseudocodium devriesii</i>	Y		
1267.	36219 <i>Pseudocrossidium hornschuchianum</i>			
1268.	8189 <i>Pseudognaphalium luteoalbum</i> (Jersey Cudweed)			
1269.	41651 <i>Pteridium esculentum</i> subsp. <i>esculentum</i>			
1270.	27195 <i>Pterocladia lucida</i>			
1271.	27198 <i>Pteroclatiella capillacea</i>			
1272.	15426 <i>Pterostylis aspera</i>			
1273.	1686 <i>Pterostylis barbata</i> (Bird Orchid)			
1274.	17267 <i>Pterostylis brevisepala</i>			
1275.	44723 <i>Pterostylis glebosa</i>			
1276.	48674 <i>Pterostylis orbiculata</i>			
1277.	1693 <i>Pterostylis recurva</i> (Jug Orchid)			
1278.	12217 <i>Pterostylis sanguinea</i>			
1279.	<i>Pterostylis</i> sp.			
1280.	18655 <i>Pterostylis</i> sp. <i>crinkled leaf</i> (G.J. Keighery 13426)			
1281.	1698 <i>Pterostylis vittata</i> (Banded Greenhood)			
1282.	27204 <i>Ptilocladia vestita</i>			
1283.	27206 <i>Ptilophora prolifera</i>			
1284.	2718 <i>Ptilotus drummondii</i> (Narrowleaf Mulla Mulla)			
1285.	11260 <i>Ptilotus drummondii</i> var. <i>drummondii</i> (Pussytail)			
1286.	48602 <i>Ptilotus eremita</i>			
1287.	2751 <i>Ptilotus polystachyus</i> (Prince of Wales Feather)			
1288.	15856 <i>Ptilotus sericostachyus</i> subsp. <i>sericostachyus</i>			
1289.	40841 <i>Ptilotus stirlingii</i> subsp. <i>stirlingii</i>			
1290.	32417 <i>Ptychostomum angustifolium</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1291.	4172 <i>Pultenaea ericifolia</i>			
1292.	4181 <i>Pultenaea reticulata</i>			
1293.	16367 <i>Pyrrochlis nigricans</i> (Red beaks, Elephants ears)			
1294.	32480 <i>Racopilum cuspidigerum</i> var. <i>convolutaceum</i>			
1295.	2932 <i>Ranunculus colonorum</i> (Common Buttercup)			
1296.	2933 <i>Ranunculus muricatus</i> (Sharp Buttercup)	Y		
1297.	11927 <i>Ranunculus sessiliflorus</i> var. <i>sessiliflorus</i>			
1298.	3061 <i>Raphanus raphanistrum</i> (Wild Radish)	Y		
1299.	3062 <i>Raphanus sativus</i> (Radish)	Y		
1300.	6012 <i>Regezia ciliata</i>			
1301.	3084 <i>Reseda lutea</i> (Cutleaf Mingnonette)	Y		
1302.	19183 <i>Retama raetam</i>	Y		
1303.	2578 <i>Rhagodia baccata</i> (Berry Saltbush)			
1304.	11341 <i>Rhagodia baccata</i> subsp. <i>baccata</i>			
1305.	11930 <i>Rhagodia baccata</i> subsp. <i>dioica</i> (Sea Berry Saltbush)			
1306.	11254 <i>Rhagodia preissii</i> subsp. <i>preissii</i>			
1307.	4822 <i>Rhamnus alaternus</i> (Buckthorn)	Y		
1308.	36279 <i>Rhizoclonium riparium</i>			
1309.	13300 <i>Rhodanthe citrina</i>			
1310.	15035 <i>Rhodanthe corymbosa</i>			
1311.	13234 <i>Rhodanthe manglesii</i>			
1312.	27220 <i>Rhodopeltis australis</i>			
1313.	27222 <i>Rhodophyllis volans</i>			
1314.	<i>Riccia bifurca</i>			
1315.	4695 <i>Ricinocarpos glaucus</i>			
1316.	31911 <i>Ricinocarpos megalocarpus</i>			
1317.	19942 <i>Ricinocarpos undulatus</i>			
1318.	4705 <i>Ricinus communis</i> (Castor Oil Plant)	Y		
1319.	17020 <i>Robinia pseudoacacia</i>	Y		
1320.	2967 <i>Romneya coulteri</i> (California Tree Poppy)	Y		
1321.	1554 <i>Romulea flava</i>	Y		
1322.	14485 <i>Romulea flava</i> var. <i>minor</i>	Y		
1323.	1556 <i>Romulea rosea</i> (Guildford Grass)	Y		
1324.	11544 <i>Romulea rosea</i> var. <i>australis</i> (Guildford Grass)	Y		
1325.	14924 <i>Romulea rosea</i> var. <i>communis</i>	Y		
1326.	3066 <i>Rorippa nasturtium-aquaticum</i> (Watercress)	Y		
1327.	10970 <i>Rostraria cristata</i>	Y		
1328.	32424 <i>Rosulabryum albolimbatum</i>			
1329.	44608 <i>Rosulabryum billardieri</i>			
1330.	32426 <i>Rosulabryum campylothecium</i>			
1331.	32429 <i>Rosulabryum torquescens</i>			
1332.	2429 <i>Rumex acetosella</i> (Sorrel)	Y		
1333.	2432 <i>Rumex conglomeratus</i> (Clustered Dock)	Y		
1334.	2433 <i>Rumex crispus</i> (Curled Dock)	Y		
1335.	46434 <i>Rumex hypogaeus</i>	Y		
1336.	17994 <i>Rumex obtusifolius</i> subsp. <i>obtusifolius</i>	Y		
1337.	2440 <i>Rumex pulcher</i> (Fiddle Dock)	Y		
1338.	20171 <i>Rumex pulcher</i> subsp. <i>woodsii</i>	Y		
1339.	2441 <i>Rumex sagittatus</i> (Rambling Dock)	Y		
1340.	2443 <i>Rumex vesicarius</i> (Ruby Dock)	Y		
1341.	115 <i>Ruppia megacarpa</i>			
1342.	116 <i>Ruppia polycarpa</i>			
1343.	<i>Ruppia</i> sp.			
1344.	40425 <i>Rytidosperma caespitosum</i>			
1345.	40426 <i>Rytidosperma occidentale</i>			
1346.	40427 <i>Rytidosperma setaceum</i>			
1347.	2906 <i>Sagina apetala</i> (Annual Pearlwort)	Y		
1348.	2907 <i>Sagina procumbens</i> (Spreading Pearlwort)	Y		
1349.	48430 <i>Salicornia quinqueflora</i>			
1350.	48431 <i>Salicornia quinqueflora</i> subsp. <i>quinqueflora</i> (Beaded Glasswort)			
1351.	6987 <i>Salpichroa origanifolia</i> (Pampas Lily of the Valley)	Y		
1352.	30434 <i>Salsola australis</i>			
1353.	6483 <i>Samolus junceus</i>			
1354.	6484 <i>Samolus repens</i> (Creeping Brookweed)			
1355.	14107 <i>Samolus repens</i> var. <i>paucifolius</i>			
1356.	2356 <i>Santalum acuminatum</i> (Quandong, Warnga)			
1357.	2359 <i>Santalum spicatum</i> (Sandalwood, Wilarak)			
1358.	27230 <i>Sarconema filiforme</i>			
1359.	7368 <i>Scabiosa atropurpurea</i> (Purple Pincushion)	Y		
1360.	7595 <i>Scaevola anchusifolia</i>			

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1361.	7603 <i>Scaevola canescens</i> (Grey Scaevola)			
1362.	7606 <i>Scaevola crassifolia</i> (Thick-leaved Fan-flower)			
1363.	7619 <i>Scaevola lanceolata</i> (Long-leaved Scaevola)			
1364.	7626 <i>Scaevola nitida</i> (Shining Fanflower)			
1365.	7634 <i>Scaevola phlebopetala</i> (Velvet Fanflower)			
1366.	13181 <i>Scaevola repens</i> var. <i>angustifolia</i>			
1367.	13182 <i>Scaevola repens</i> var. <i>repens</i>			
1368.	7647 <i>Scaevola thesioides</i>			
1369.	13152 <i>Scaevola thesioides</i> subsp. <i>thesioides</i>			
1370.	41660 <i>Schenkia australis</i>			
1371.	48834 <i>Schinus terebinthifolia</i>	Y		
1372.	968 <i>Schoenoplectus pungens</i> (Sharpleaf Rush)			
1373.	48356 <i>Schoenoplectus tabernaemontani</i>			
1374.	979 <i>Schoenus caespitius</i>			
1375.	982 <i>Schoenus clandestinus</i>			
1376.	984 <i>Schoenus curvifolius</i>			
1377.	986 <i>Schoenus efoliatus</i>			
1378.	991 <i>Schoenus grammatophyllus</i>			
1379.	992 <i>Schoenus grandiflorus</i> (Large Flowered Bogrush)			
1380.	997 <i>Schoenus lanatus</i> (Woolly Bog-rush)			
1381.	1007 <i>Schoenus pedicellatus</i>			
1382.	1018 <i>Schoenus subfascicularis</i>			
1383.	6029 <i>Scholtzia capitata</i> (Pom-pom Scholtzia)			
1384.	6033 <i>Scholtzia involucrata</i> (Spiked Scholtzia)			
1385.	6034 <i>Scholtzia laxiflora</i>			
1386.	603 <i>Secale cereale</i> (Rye)	Y		
1387.	20665 <i>Senecio angulatus</i>	Y		
1388.	25878 <i>Senecio condylus</i>			
1389.	8204 <i>Senecio elegans</i> (Purple Groundsel)	Y		
1390.	8208 <i>Senecio hispidulus</i> (Hispid Fireweed)			
1391.	20161 <i>Senecio pinnatifolius</i>			
1392.	25884 <i>Senecio pinnatifolius</i> var. <i>latilobus</i>			
1393.	25882 <i>Senecio pinnatifolius</i> var. <i>maritimus</i> (Coastal Groundsel)			
1394.	8218 <i>Senecio ramosissimus</i> (Auricled Groundsel)			
1395.	8220 <i>Senecio vulgaris</i> (Common Groundsel)	Y		
1396.	17645 <i>Senna artemisioides</i>			
1397.	12279 <i>Senna artemisioides</i> subsp. <i>helmsii</i>			
1398.	46819 <i>Seringia integrifolia</i> (Common firebush)			
1399.	608 <i>Setaria italica</i> (Italian Millet)	Y		
1400.	609 <i>Setaria palmifolia</i> (Palm Grass)	Y		
1401.	48992 <i>Sida fallax</i>	Y		Y
1402.	2909 <i>Silene gallica</i> (French Catchfly)	Y		
1403.	15972 <i>Silene gallica</i> var. <i>gallica</i>	Y		
1404.	11803 <i>Silene gallica</i> var. <i>quinquevulnera</i>	Y		
1405.	2910 <i>Silene nocturna</i> (Mediterranean Catchfly)	Y		
1406.	8225 <i>Siloxerus humifusus</i> (Procumbent Siloxerus)			
1407.	8227 <i>Silybum marianum</i> (Variegated Thistle)	Y		
1408.	3070 <i>Sisymbrium irio</i> (London Rocket)	Y		
1409.	3072 <i>Sisymbrium orientale</i> (Indian Hedge Mustard)	Y		
1410.	48862 <i>Sisyrinchium rosulatum</i>	Y		
1411.	6988 <i>Solanum americanum</i> (Glossy Nightshade)	Y		
1412.	11114 <i>Solanum giganteum</i>	Y		
1413.	7017 <i>Solanum laciniatum</i> (Kangaroo Apple)	Y		
1414.	7020 <i>Solanum linnaeanum</i> (Apple of Sodom)	Y		
1415.	47173 <i>Solanum lycopersicum</i> (Tomato)	Y		
1416.	7022 <i>Solanum nigrum</i> (Black Berry Nightshade)	Y		
1417.	7037 <i>Solanum symonii</i>			
1418.	8228 <i>Solidago canadensis</i> (Goldenrod)	Y		
1419.	45036 <i>Solidago chilensis</i>	Y		
1420.	27281 <i>Solieria robusta</i>			
1421.	10920 <i>Soliva sessilis</i> (Jo-jo, Onehunga Weed)	Y		
1422.	9367 <i>Sonchus hydrophilus</i> (Native Sowthistle)			
1423.	8231 <i>Sonchus oleraceus</i> (Common Sowthistle)	Y		
1424.	617 <i>Sorghum halepense</i> (Johnson Grass)	Y		
1425.	35236 <i>Sorghum x drummondii</i> (Sudan Grass)	Y		
1426.	1312 <i>Sowerbaea laxiflora</i> (Purple Tassels)			
1427.	1558 <i>Sparaxis bulbifera</i>	Y		
1428.	1560 <i>Sparaxis pillansii</i> (Harlequin Flower)	Y		
1429.	2912 <i>Spergula arvensis</i> (Corn Spurry)	Y		
1430.	33636 <i>Spergularia brevifolia</i>			

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1431.	8900 <i>Spergularia marina</i>			
1432.	4205 <i>Sphaerolobium linophyllum</i>			
1433.	4207 <i>Sphaerolobium medium</i>			
1434.	624 <i>Spinifex hirsutus</i> (Hairy Spinifex)			
1435.	625 <i>Spinifex longifolius</i> (Beach Spinifex)			
1436.	626 <i>Spinifex sericeus</i>	Y		
1437.	627 <i>Spinifex x alterniflorus</i>			
1438.	8710 <i>Sporobolus africanus</i> (Parramatta Grass)	Y		
1439.	635 <i>Sporobolus virginicus</i> (Marine Couch)			
1440.	27309 <i>Spyridia dasyoides</i>			
1441.	27310 <i>Spyridia filamentosa</i>			
1442.	4828 <i>Spyridium globulosum</i> (Basket Bush)			
1443.	6930 <i>Stachys arvensis</i> (Staggerweed)	Y		
1444.	4716 <i>Stachystemon vermicularis</i>			
1445.	2918 <i>Stellaria media</i> (Chickweed)	Y		
1446.	20397 <i>Stellaria pallida</i>	Y		
1447.	15066 <i>Stenanthemum notiale</i> subsp. <i>chamelum</i>			
1448.	19403 <i>Stenopetalum gracile</i>			
1449.	636 <i>Stenotaphrum secundatum</i> (Buffalo Grass)	Y		
1450.	2316 <i>Stirlingia latifolia</i> (Blueboy)			
1451.	2317 <i>Stirlingia simplex</i>			
1452.	27318 <i>Struvea plumosa</i>			
1453.	44492 <i>Stuckenia pectinata</i>			
1454.	30278 <i>Stylidium androsaceum</i>			
1455.	30276 <i>Stylidium bicolor</i>			
1456.	7693 <i>Stylidium brunonianum</i> (Pink Fountain Triggerplant)			
1457.	7699 <i>Stylidium carnosum</i> (Fleshy-leaved Triggerplant)			
1458.	7710 <i>Stylidium cygnorum</i>			
1459.	7712 <i>Stylidium despectum</i> (Dwarf Triggerplant)			
1460.	19251 <i>Stylidium eriopodum</i>			
1461.	25801 <i>Stylidium hesperium</i>			
1462.	7736 <i>Stylidium hispidum</i> (White Butterfly Triggerplant)			
1463.	7742 <i>Stylidium inundatum</i> (Hundreds and Thousands)			
1464.	25829 <i>Stylidium neurophyllum</i> (Coastal Plain Triggerplant)			
1465.	7774 <i>Stylidium piliferum</i> (Common Butterfly Triggerplant)			
1466.	7785 <i>Stylidium repens</i> (Matted Triggerplant)			
1467.	20521 <i>Stylidium rigidulum</i>			
1468.	7790 <i>Stylidium roseoalatum</i> (Pink-wing Triggerplant)			
1469.	7798 <i>Stylidium schoenoides</i> (Cow Kicks)			
1470.	1260 <i>Stypantra glauca</i> (Blind Grass)			
1471.	6476 <i>Styphelia tenuiflora</i> (Common Pinheath)			
1472.	2639 <i>Suaeda australis</i> (Seablite)			
1473.	15108 <i>Succowia balearica</i>	Y		Y
1474.	25902 <i>Symphotrichum squamatum</i> (Bushy Starwort)	Y		
1475.	2323 <i>Synaphea gracillima</i>			
1476.	2329 <i>Synaphea spinulosa</i>			
1477.	15532 <i>Synaphea spinulosa</i> subsp. <i>spinulosa</i>			
1478.	32437 <i>Syntrichia antarctica</i>			
1479.	32438 <i>Syntrichia pagorum</i>			
1480.	45613 <i>Taraxacum khatoonae</i>	Y		
1481.	20135 <i>Taxandria linearifolia</i>			
1482.	33236 <i>Tecticornia halocnemoides</i> (Shrubby Samphire)			
1483.	33237 <i>Tecticornia halocnemoides</i> subsp. <i>halocnemoides</i>			
1484.	33319 <i>Tecticornia indica</i> subsp. <i>bidens</i>			
1485.	31718 <i>Tecticornia lepidosperma</i>			
1486.	33296 <i>Tecticornia pergranulata</i>			
1487.	33297 <i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i> (Blackseed Samphire)			
1488.	4256 <i>Templetonia retusa</i> (Cockies Tongues)			
1489.	2791 <i>Tersonia cyathiflora</i> (Button Creeper)			
1490.	2820 <i>Tetragonia decumbens</i> (Sea Spinach)	Y		
1491.	13551 <i>Tetragonia nigrescens</i>	Y		Y
1492.	1036 <i>Tetralia octandra</i>			
1493.	48342 <i>Tetralia hirsuta</i> subsp. <i>hirsuta</i>			
1494.	48341 <i>Tetralia hirsuta</i> subsp. <i>viminea</i>			
1495.	4537 <i>Tetralia nuda</i>			
1496.	134 <i>Thalassodendron pachyrhizum</i>			
1497.	27328 <i>Thamnoclonium lemnanium</i>			Y
1498.	1701 <i>Thelymitra antennifera</i> (Vanilla Orchid)			
1499.	10856 <i>Thelymitra benthamiana</i> (Leopard Orchid)			
1500.	1702 <i>Thelymitra campanulata</i> (Shirt Orchid)			

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1501.	1705 <i>Thelymitra crinita</i> (Blue Lady Orchid)			
1502.	11053 <i>Thelymitra macrophylla</i>			
1503.	10874 <i>Thinopyrum distichum</i>	Y		
1504.	5077 <i>Thomasia cognata</i>			
1505.	5080 <i>Thomasia foliosa</i>			
1506.	5091 <i>Thomasia paniculata</i>			
1507.	5093 <i>Thomasia petalocalyx</i> (Paper Flower)			
1508.	5094 <i>Thomasia purpurea</i>			
1509.	17322 <i>Thomasia rulingioides</i>			
1510.	5105 <i>Thomasia triphylla</i>			
1511.	2644 <i>Threlkeldia diffusa</i> (Coast Bonefruit)			
1512.	6065 <i>Thryptomene saxicola</i> (Rock Thryptomene)			
1513.	1319 <i>Thysanotus arenarius</i>			
1514.	1338 <i>Thysanotus manglesianus</i> (Fringed Lily)			
1515.	1339 <i>Thysanotus multiflorus</i> (Many-flowered Fringe Lily)			
1516.	1343 <i>Thysanotus patersonii</i>			
1517.	1351 <i>Thysanotus sparteus</i>			
1518.	1358 <i>Thysanotus triandrus</i>			
1519.	36397 <i>Tikvahiella candida</i>			Y
1520.	32445 <i>Tortula muralis</i>			
1521.	1368 <i>Trachyandra divaricata</i>	Y		
1522.	19041 <i>Trachymene coerulea</i> subsp. <i>coerulea</i>			
1523.	6268 <i>Trachymene cyanopetala</i>			
1524.	6279 <i>Trachymene ornata</i> (Spongefruit)			
1525.	6280 <i>Trachymene pilosa</i> (Native Parsnip)			
1526.	17684 <i>Tremulina tremula</i>			
1527.	1482 <i>Tribonanthes brachypetala</i> (Nodding Tiurmdin)			
1528.	1483 <i>Tribonanthes longipetala</i> (Branching Tiurmdin)			
1529.	1485 <i>Tribonanthes violacea</i> (Violet Tiurmdin)			
1530.	4383 <i>Tribulus terrestris</i> (Caltrop)	Y		
1531.	32450 <i>Trichostomum eckelianum</i>			
1532.	1361 <i>Tricoryne elatior</i> (Yellow Autumn Lily)			
1533.	1363 <i>Tricoryne tenella</i>			
1534.	17145 <i>Trifolium angustifolium</i> var. <i>angustifolium</i>	Y		
1535.	4291 <i>Trifolium arvense</i> (Hare's Foot Clover)	Y		
1536.	17542 <i>Trifolium arvense</i> var. <i>arvense</i>	Y		
1537.	4292 <i>Trifolium campestre</i> (Hop Clover)	Y		
1538.	17763 <i>Trifolium campestre</i> var. <i>campestre</i> (Hop Clover)	Y		
1539.	4293 <i>Trifolium cernuum</i> (Drooping Flower Clover)	Y		
1540.	4294 <i>Trifolium cherleri</i> (Cupped Clover)	Y		
1541.	4295 <i>Trifolium dubium</i> (Suckling Clover)	Y		
1542.	17759 <i>Trifolium fragiferum</i> var. <i>fragiferum</i>	Y		
1543.	4297 <i>Trifolium glomeratum</i> (Cluster Clover)	Y		
1544.	4298 <i>Trifolium hirtum</i> (Rose Clover)	Y		
1545.	17758 <i>Trifolium hybridum</i> var. <i>hybridum</i>	Y		
1546.	17541 <i>Trifolium incarnatum</i> var. <i>incarnatum</i>	Y		
1547.	4304 <i>Trifolium ornithopodioides</i> (Birdsfoot Fenugreek)	Y		
1548.	17788 <i>Trifolium pratense</i> var. <i>sativum</i>	Y		
1549.	17115 <i>Trifolium repens</i> var. <i>repens</i>	Y		
1550.	14738 <i>Trifolium resupinatum</i> var. <i>resupinatum</i>	Y		
1551.	4309 <i>Trifolium scabrum</i> (Rough Clover)	Y		
1552.	4310 <i>Trifolium spumosum</i> (Bladder Clover)	Y		
1553.	4313 <i>Trifolium subterraneum</i> (Subterranean Clover)	Y		
1554.	4314 <i>Trifolium suffocatum</i> (Suffocated Clover)	Y		
1555.	15509 <i>Trifolium tomentosum</i> var. <i>tomentosum</i>	Y		
1556.	33276 <i>Triglochin isingiana</i>			
1557.	146 <i>Triglochin minutissima</i>			
1558.	147 <i>Triglochin mucronata</i>			
1559.	18587 <i>Triglochin nana</i>			
1560.	151 <i>Triglochin striata</i>			
1561.	152 <i>Triglochin trichophora</i>			
1562.	4737 <i>Tripterococcus brunonis</i> (Winged Stackhousia)			
1563.	708 <i>Triticum aestivum</i> (Wheat)	Y		
1564.	38401 <i>Tritonia gladiolaris</i> (Lined Tritonia)	Y		
1565.	4360 <i>Tropaeolum majus</i> (Garden Nasturtium)	Y		
1566.	4842 <i>Trymalium ledifolium</i>			
1567.	11665 <i>Trymalium ledifolium</i> var. <i>ledifolium</i>			
1568.	13479 <i>Trymalium ledifolium</i> var. <i>rosmarinifolium</i>			
1569.	33418 <i>Trymalium odoratissimum</i> subsp. <i>odoratissimum</i>			
1570.	99 <i>Typha orientalis</i> (Bulrush, Cumbungi)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1571.	4317 <i>Ulex europaeus</i> (Gorse)	Y		
1572.	43504 <i>Ulmus parvifolia</i>	Y		Y
1573.	27350 <i>Ulothrix subflaccida</i>			Y
1574.	35261 <i>Ulva clathrata</i>			
1575.	35260 <i>Ulva compressa</i>			
1576.	27351 <i>Ulva fasciata</i>			
1577.	35263 <i>Ulva flexuosa</i>			
1578.	35262 <i>Ulva intestinalis</i>			
1579.	27352 <i>Ulva lactuca</i>			
1580.	35126 <i>Ulva linza</i>			
1581.	35861 <i>Ulva prolifera</i>			
1582.	27354 <i>Ulva rigida</i>			
1583.	8254 <i>Urospermum picroides</i> (False Hawkbit)	Y		
1584.	8255 <i>Ursinia anthemoides</i> (Ursinia)	Y		
1585.	38388 <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Y		
1586.	1767 <i>Urtica urens</i> (Small Nettle)	Y		
1587.	12493 <i>Utricularia gibba</i>			
1588.	7148 <i>Utricularia multifida</i>			
1589.	11690 <i>Verbascum thapsus</i> subsp. <i>thapsus</i>	Y		
1590.	7107 <i>Verbascum virgatum</i> (Twiggy Mullein)	Y		
1591.	20121 <i>Verbena rigida</i> var. <i>rigida</i>	Y		
1592.	46275 <i>Verbesina encelioides</i> var. <i>encelioides</i> (Crownbeard, Wild Sunflower, Goldweed, South African Daisy)	Y		
1593.	7108 <i>Veronica arvensis</i> (Wall Speedwell)	Y		
1594.	7110 <i>Veronica distans</i>			
1595.	7111 <i>Veronica persica</i> (Creeping Speedwell)	Y		
1596.	6076 <i>Verticordia densiflora</i> (Compacted Featherflower)			
1597.	15432 <i>Verticordia densiflora</i> var. <i>densiflora</i>			
1598.	6077 <i>Verticordia drummondii</i> (Drummond's Featherflower)			
1599.	12422 <i>Verticordia eriocephala</i> (Common Cauliflower)			
1600.	15433 <i>Verticordia huegelii</i> var. <i>huegelii</i>			
1601.	6098 <i>Verticordia monadelpha</i> (Pink Woolly Featherflower)			
1602.	15435 <i>Verticordia monadelpha</i> var. <i>monadelpha</i>			
1603.	6101 <i>Verticordia nitens</i> (Morrison Featherflower, Kodjeningara)			
1604.	4319 <i>Vicia benghalensis</i> (Purple Vetch)	Y		
1605.	4320 <i>Vicia hirsuta</i> (Hairy Vetch)	Y		
1606.	4322 <i>Vicia sativa</i> (Common Vetch)	Y		
1607.	17285 <i>Vicia sativa</i> subsp. <i>cordata</i>	Y		
1608.	11474 <i>Vicia sativa</i> subsp. <i>nigra</i>	Y		
1609.	27360 <i>Vidalia spiralis</i>			
1610.	4325 <i>Viminaria juncea</i> (Swishbush, Koweda)			
1611.	722 <i>Vulpia bromoides</i> (Squirrel Tail Fescue)	Y		
1612.	11137 <i>Vulpia fasciculata</i>	Y		
1613.	724 <i>Vulpia myuros</i> (Rat's Tail Fescue)	Y		
1614.	12052 <i>Vulpia myuros</i> forma <i>megalura</i>	Y		
1615.	33101 <i>Vulpia myuros</i> forma <i>myuros</i>	Y		
1616.	7384 <i>Wahlenbergia capensis</i> (Cape Bluebell)	Y		
1617.	7389 <i>Wahlenbergia preissii</i>			
1618.	13328 <i>Waitzia nitida</i>			
1619.	8282 <i>Waitzia suaveolens</i> (Fragrant Waitzia)			
1620.	13333 <i>Waitzia suaveolens</i> var. <i>suaveolens</i>			
1621.	1563 <i>Watsonia aletroides</i>	Y		Y
1622.	1566 <i>Watsonia marginata</i>	Y		
1623.	18108 <i>Watsonia meriana</i> var. <i>bulbillifera</i>	Y		
1624.	18118 <i>Watsonia meriana</i> var. <i>meriana</i>	Y		
1625.	32455 <i>Weissia controversa</i>			
1626.	6939 <i>Westringia dampieri</i>			
1627.	11798 <i>Wigandia urens</i> var. <i>caracasana</i>	Y		
1628.	27364 <i>Wollastoniella myriophylloides</i>			
1629.	27369 <i>Wrangelia velutina</i>			
1630.	1398 <i>Wurmbea monantha</i>			
1631.	8286 <i>Xanthium occidentale</i> (Noogoora Burr)	Y		
1632.	1251 <i>Xanthorrhoea brunonis</i>			
1633.	1256 <i>Xanthorrhoea preissii</i> (Grass tree, Palga)			
1634.	<i>Xanthorrhoea</i> sp.			
1635.	6285 <i>Xanthosia ciliata</i>			
1636.	6289 <i>Xanthosia huegelii</i>			
1637.	1049 <i>Zantedeschia aethiopica</i> (Arum Lily)	Y		
1638.	36218 <i>Zygodon menziesii</i>			

Name ID Species Name

Naturalised

Conservation Code

¹Endemic To Query Area

Conservation Codes

- T - Rare or likely to become extinct
- 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.

NatureMap Species Report

Created By Guest user on 12/07/2021

Kingdom Animalia
Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 115° 46' 11" E, 31° 57' 38" S
Buffer 10km
Group By Conservation Status

Conservation Status	Species	Records
Non-conservation taxon	779	75114
Other specially protected fauna	4	57
Priority 2	2	6
Priority 3	6	140
Priority 4	9	1054
Protected under international agreement	35	3997
Rare or likely to become extinct	41	3746
TOTAL	876	84114

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Rare or likely to become extinct				
1.	24506 <i>Anous tenuirostris</i> subsp. <i>melanops</i> (Australian Lesser Noddy)		T	
2.	24209 <i>Arctocephalus tropicalis</i> (Subantarctic fur-seal)		T	
3.	41326 <i>Ardenna carneipes</i> (Flesh-footed Shearwater, Fleishy-footed Shearwater)		T	
4.	24050 <i>Balaenoptera physalus</i> (Fin Whale)		T	
5.	24345 <i>Botaurus poiciloptilus</i> (Australasian Bittern)		T	
6.	24783 <i>Calidris canutus</i> subsp. <i>rogersi</i> (Red Knot (north-eastern Siberia))		T	
7.	24784 <i>Calidris ferruginea</i> (Curlew Sandpiper)		T	
8.	24790 <i>Calidris tenuirostris</i> (Great Knot)		T	
9.	24731 <i>Calyptorhynchus banksii</i> subsp. <i>naso</i> (Forest Red-tailed Black Cockatoo)		T	
10.	24733 <i>Calyptorhynchus baudinii</i> (Baudin's Cockatoo, White-tailed Long-billed Black Cockatoo)		T	
11.	24734 <i>Calyptorhynchus latirostris</i> (Carnaby's Cockatoo, White-tailed Short-billed Black Cockatoo)		T	
12.	48400 <i>Calyptorhynchus</i> sp. (white-tailed black cockatoo)		T	
13.	34034 <i>Carcharias taurus</i> (Grey Nurse Shark)		T	
14.	34031 <i>Carcharodon carcharias</i> (Great White Shark)		T	
15.	25335 <i>Caretta caretta</i> (Loggerhead Turtle)		T	
16.	25575 <i>Charadrius leschenaultii</i> (Greater Sand Plover)		T	
17.	25576 <i>Charadrius mongolus</i> (Lesser Sand Plover)		T	
18.	25336 <i>Chelonia mydas</i> (Green Turtle)		T	
19.	24440 <i>Dasyornis longirostris</i> (Western Bristlebird)		T	
20.	24092 <i>Dasyurus geoffroyi</i> (Chuditch, Western Quoll)		T	
21.	24093 <i>Dasyurus hallucatus</i> (Northern Quoll)		T	
22.	25346 <i>Dermochelys coriacea</i> (Leatherback Turtle)		T	
23.	25618 <i>Diomedea exulans</i> (Wandering Albatross)		T	
24.	30836 <i>Diomedea exulans</i> subsp. <i>exulans</i> (Snowy Albatross)		T	
25.	25342 <i>Eretmochelys imbricata</i> subsp. <i>bissa</i> (Hawksbill Turtle)		T	
26.	24043 <i>Eubalaena australis</i> (Southern Right Whale)		T	
27.	24473 <i>Falco hypoleucos</i> (Grey Falcon)		T	
28.	24557 <i>Leipoa ocellata</i> (Malleefowl)		T	
29.	24168 <i>Macrotis lagotis</i> (Bilby, Dalgyte, Ninu)		T	
30.	24146 <i>Myrmecobius fasciatus</i> (Numbat, Walpurti)		T	
31.	24210 <i>Neophoca cinerea</i> (Australian Sea-lion)		T	
32.	24798 <i>Numenius madagascariensis</i> (Eastern Curlew)		T	
33.	24462 <i>Phoebastria fusca</i> (Sooty Albatross)		T	
34.	24715 <i>Puffinus huttoni</i> (Hutton's Shearwater)		T	
35.	48237 <i>Rostratula australis</i> (Australian Painted Snipe)		T	
36.	24145 <i>Setonix brachyurus</i> (Quokka)		T	
37.	48595 <i>Sternula nereis</i> subsp. <i>nereis</i> (Fairy Tern)		T	

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
38.	34134	<i>Thalassarche carteri</i> (Indian Yellow-nosed Albatross)		T	
39.	34136	<i>Thalassarche chrysostoma</i> (Grey-headed Albatross)		T	
40.	44607	<i>Thalassarche melanophris</i> (Black-browed Albatross)		T	
41.	34113	<i>Westralunio carteri</i> (Carter's Freshwater Mussel)		T	
Protected under international agreement					
42.	41323	<i>Actitis hypoleucos</i> (Common Sandpiper)		IA	
43.	24505	<i>Anous stolidus subsp. pileatus</i> (Common Noddy)		IA	
44.	25554	<i>Apus pacificus</i> (Fork-tailed Swift, Pacific Swift)		IA	
45.	24334	<i>Apus pacificus subsp. pacificus</i> (Fork-tailed Swift, Pacific Swift)		IA	
46.	25736	<i>Arenaria interpres</i> (Ruddy Turnstone)		IA	
47.	24779	<i>Calidris acuminata</i> (Sharp-tailed Sandpiper)		IA	
48.	24780	<i>Calidris alba</i> (Sanderling)		IA	
49.	25738	<i>Calidris canutus</i> (Red Knot, knot)		IA	
50.	24786	<i>Calidris melanotos</i> (Pectoral Sandpiper)		IA	
51.	24788	<i>Calidris ruficollis</i> (Red-necked Stint)		IA	
52.	24789	<i>Calidris subminuta</i> (Long-toed Stint)		IA	
53.	24686	<i>Calonectris leucomelas</i> (Streaked Shearwater)		IA	
54.	47954	<i>Gelochelidon nilotica</i> (Gull-billed Tern)		IA	
55.	48587	<i>Hydroprogne caspia</i> (Caspian Tern)		IA	
56.	30932	<i>Limosa lapponica</i> (Bar-tailed Godwit)		IA	
57.	25741	<i>Limosa limosa</i> (Black-tailed Godwit)		IA	
58.	24797	<i>Limosa limosa subsp. melanuroides</i> (Black-tailed Godwit)		IA	
59.	24690	<i>Macronectes giganteus</i> (Southern Giant Petrel)		IA	
60.	25742	<i>Numenius phaeopus</i> (Whimbrel)		IA	
61.	24497	<i>Oceanites oceanicus</i> (Wilson's Storm-petrel)		IA	
62.	41347	<i>Onychoprion anaethetus</i> (Bridled Tern)		IA	
63.	48591	<i>Pandion cristatus</i> (Osprey, Eastern Osprey)		IA	
64.	24843	<i>Plegadis falcinellus</i> (Glossy Ibis)		IA	
65.	24382	<i>Pluvialis fulva</i> (Pacific Golden Plover)		IA	
66.	24383	<i>Pluvialis squatarola</i> (Grey Plover)		IA	
67.	24714	<i>Puffinus griseus</i> (Sooty Shearwater)		IA	
68.	24716	<i>Puffinus pacificus</i> (Wedge-tailed Shearwater)		IA	
69.	24517	<i>Stercorarius parasiticus</i> (Arctic jaeger, Arctic Skua)		IA	
70.	25640	<i>Sterna dougallii</i> (Roseate Tern)		IA	
71.	24524	<i>Sterna dougallii subsp. gracilis</i> (Roseate Tern)		IA	
72.	48597	<i>Thalasseus bergii</i> (Crested Tern)		IA	
73.	24806	<i>Tringa glareola</i> (Wood Sandpiper)		IA	
74.	24808	<i>Tringa nebularia</i> (Common Greenshank, greenshank)		IA	
75.	24809	<i>Tringa stagnatilis</i> (Marsh Sandpiper, little greenshank)		IA	
76.	41351	<i>Xenus cinereus</i> (Terek Sandpiper)		IA	
Other specially protected fauna					
77.	25624	<i>Falco peregrinus</i> (Peregrine Falcon)		S	
78.	24475	<i>Falco peregrinus subsp. macropus</i> (Australian Peregrine Falcon)		S	
79.	24051	<i>Megaptera novaeangliae</i> (Humpback Whale)		S	
80.	48070	<i>Phascogale tapoatafa subsp. wambenger</i> (South-western Brush-tailed Phascogale, Wambenger)		S	
Priority 2					
81.	24347	<i>Ixobrychus flavicollis subsp. australis</i> (Black Bittern (southwest subpop.), Australian Black Bittern)		P2	
82.	34039	<i>Phycodurus eques</i> (Leafy Sea Dragon)		P2	
Priority 3					
83.	48579	<i>Euoplos inornatus</i> (inornate trapdoor spider (northern Jarrah Forest))		P3	
84.	48935	<i>Idiosoma sigillatum</i> (Swan Coastal Plain shield-backed trapdoor spider)		P3	
85.	25147	<i>Lerista lineata</i> (Perth Slider, Lined Skink)		P3	
86.	25249	<i>Neelaps calonotos</i> (Black-striped Snake, black-striped burrowing snake)		P3	
87.	24819	<i>Ninox connivens subsp. connivens</i> (Barking owl (southwest subpop.))		P3	
88.	24855	<i>Tyto novaehollandiae subsp. novaehollandiae</i> (Masked Owl (southwest))		P3	
Priority 4					
89.	24215	<i>Hydromys chrysogaster</i> (Water-rat, Rakali)		P4	
90.	48588	<i>Isodon fusciventer</i> (Quenda, southwestern brown bandicoot)		P4	
91.	47975	<i>Ixobrychus dubius</i> (Australian Little Bittern)		P4	
92.	24328	<i>Oxyura australis</i> (Blue-billed Duck)		P4	
93.	24663	<i>Phaethon rubricauda</i> (Red-tailed Tropicbird)		P4	
94.	48116	<i>Stercorarius antarcticus</i> (Brown Skua)		P4	
95.	33992	<i>Synemon gratiosa</i> (Graceful Sunmoth)		P4	
96.	48135	<i>Thinornis rubricollis</i> (Hooded Plover, Hooded Dotterel)		P4	
97.	24803	<i>Tringa brevipes</i> (Grey-tailed Tattler)		P4	

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Non-conservation taxon				
98.	??			
99.	24559 <i>Acanthagenys rufogularis</i> (Spiny-cheeked Honeyeater)			
100.	<i>Acanthaluteres brownii</i>			
101.	<i>Acanthistius pardalotus</i>			
102.	<i>Acanthistius serratus</i>			
103.	24260 <i>Acanthiza apicalis</i> (Broad-tailed Thornbill, Inland Thornbill)			
104.	24261 <i>Acanthiza chrysorrhoa</i> (Yellow-rumped Thornbill)			
105.	24262 <i>Acanthiza inornata</i> (Western Thornbill)			
106.	24265 <i>Acanthiza uropygialis</i> (Chestnut-rumped Thornbill)			
107.	<i>Acanthopagrus butcheri</i>			
108.	24560 <i>Acanthorhynchus superciliosus</i> (Western Spinebill)			
109.	25535 <i>Accipiter cirrocephalus</i> (Collared Sparrowhawk)			
110.	24281 <i>Accipiter cirrocephalus</i> subsp. <i>cirrocephalus</i> (Collared Sparrowhawk)			
111.	25536 <i>Accipiter fasciatus</i> (Brown Goshawk)			
112.	24283 <i>Accipiter fasciatus</i> subsp. <i>didimus</i> (Brown Goshawk)			
113.	24282 <i>Accipiter fasciatus</i> subsp. <i>fasciatus</i> (Brown Goshawk)			
114.	<i>Acentrogobius bifrenatus</i>			
115.	<i>Acentrogobius pflaumi</i>			Y
116.	<i>Achaeearanea convexa</i>			Y
117.	<i>Achoerodus gouldii</i>			
118.	42368 <i>Acritoscincus trilineatus</i> (Western Three-lined Skink)			
119.	25755 <i>Acrocephalus australis</i> (Australian Reed Warbler)			
120.	24831 <i>Acrocephalus australis</i> subsp. <i>gouldi</i> (Australian Reed Warbler)			
121.	24301 <i>Aegotheles cristatus</i> subsp. <i>cristatus</i> (Australian Owlet-nightjar)			
122.	<i>Aetapcus maculatus</i>			
123.	<i>Akamptogonus novarae</i>			
124.	<i>Aldrichetta forsteri</i>			
125.	<i>Alectis ciliaris</i>			
126.	<i>Allenichthys glauerti</i>			
127.	<i>Allomycterus pilatus</i>			
128.	<i>Allothereua maculata</i>			
129.	<i>Amazona auropallata</i>			Y
130.	<i>Amblyomma albolimbatum</i>			
131.	<i>Amblyomma triguttatum</i>			
132.	<i>Ammotretis elongatus</i>			
133.	<i>Amniataba caudavittata</i>			
134.	<i>Aname mainae</i>			
135.	<i>Aname tepperi</i>			
136.	24310 <i>Anas castanea</i> (Chestnut Teal)			
137.	24312 <i>Anas gracilis</i> (Grey Teal)			
138.	24313 <i>Anas platyrhynchos</i> (Mallard)			
139.	<i>Anas platyrhynchos</i> subsp. <i>domesticus</i>			
140.	24315 <i>Anas rhynchotis</i> (Australasian Shoveler)			
141.	24316 <i>Anas superciliosa</i> (Pacific Black Duck)			
142.	<i>Anas superciliosa</i> subsp. <i>x platyrhynchos</i>			Y
143.	<i>Anguilla australis</i>			
144.	47414 <i>Anhinga novaehollandiae</i> (Australasian Darter)			
145.	<i>Anidiops villosus</i>			
146.	44629 <i>Anillios australis</i>			
147.	<i>Anoplocapros lenticularis</i>			
148.	<i>Anser anser</i>			
149.	25241 <i>Antaresia stimsoni</i> subsp. <i>stimsoni</i> (Stimson's Python)			
150.	24561 <i>Anthochaera carunculata</i> (Red Wattlebird)			
151.	24562 <i>Anthochaera lunulata</i> (Western Little Wattlebird)			
152.	24599 <i>Anthus australis</i> subsp. <i>australis</i> (Australian Pipit)			
153.	<i>Apogon rueppellii</i>			
154.	24991 <i>Aprasia repens</i> (Sand-plain Worm-lizard)			
155.	<i>Aptychotrema vincentiana</i>			
156.	24285 <i>Aquila audax</i> (Wedge-tailed Eagle)			
157.	<i>Ara ararauna</i>			Y
158.	<i>Aracana aurita</i>			
159.	<i>Aracana aurita?</i>			Y
160.	<i>Arachnura higginsii</i>			
161.	<i>Araneus cyphoxis</i>			
162.	<i>Araneus eburniventris</i>			
163.	<i>Araneus eburnus</i>			
164.	<i>Araneus senicaudatus</i>			
165.	25558 <i>Ardea ibis</i> (Cattle Egret)			
166.	41324 <i>Ardea modesta</i> (great egret, white egret)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
167.	24340 <i>Ardea novaehollandiae</i> (White-faced Heron)			
168.	24341 <i>Ardea pacifica</i> (White-necked Heron)			
169.	24610 <i>Ardeotis australis</i> (Australian Bustard)			
170.	<i>Argiope protensa</i>			
171.	<i>Argiope trifasciata</i>			
172.	<i>Argoctenus bidentatus</i>			
173.	<i>Argyrosomus japonicus</i>			
174.	<i>Arothron hispidus</i>			
175.	<i>Arripis georgiana</i>			
176.	<i>Arripis truttaacea</i>			
177.	25566 <i>Artamus cinereus</i> (Black-faced Woodswallow)			
178.	24352 <i>Artamus cinereus</i> subsp. <i>melanops</i> (Black-faced Woodswallow)			
179.	24356 <i>Artamus personatus</i> (Masked Woodswallow)			
180.	<i>Artoria linnaei</i>			
181.	<i>Artoria taeniifera</i>			
182.	<i>Artoriopsis exposita</i>			
183.	<i>Artoriopsis joergj</i>			
184.	<i>Atherina</i> sp.			
185.	<i>Atherinomorus lacunosus</i>			
186.	<i>Atherinomorus vaigiensis</i>			
187.	<i>Atherinosoma elongata</i>			
188.	<i>Atherinosoma presbyteroides</i>			
189.	<i>Aulohalaelurus labiosus</i>			
190.	<i>Austracantha minax</i>			
191.	<i>Australomimetus aurioculatus</i>			
192.	<i>Austrammo harveyi</i>			
193.	47713 <i>Austronomus australis</i> (White-striped Free-tailed Bat)			
194.	<i>Auxis thazard</i>			
195.	24318 <i>Aythya australis</i> (Hardhead)			
196.	<i>Backbourkia brounii</i>			
197.	<i>Backbourkia heroine</i>			
198.	<i>Badumna insignis</i>			
199.	24044 <i>Balaenoptera acutorostrata</i> (Dwarf Minke Whale)			
200.	<i>Ballarra longipalpus</i>			
201.	<i>Barnardius zonarius</i>			
202.	<i>Batrachomoeus rubricephalus</i>			
203.	<i>Billima attrita</i>			Y
204.	24319 <i>Biziura lobata</i> (Musk Duck)			
205.	<i>Brachaluteres jacksonianus</i>			
206.	42380 <i>Brachyurophis fasciolatus</i> subsp. <i>fasciolatus</i> (Narrow-banded Shovel-nosed Snake)			
207.	42381 <i>Brachyurophis semifasciatus</i> (Southern Shovel-nosed Snake)			
208.	24359 <i>Burhinus grallarius</i> (Bush Stone-curlew)			
209.	25713 <i>Cacatua galerita</i> (Sulphur-crested Cockatoo)			
210.	24721 <i>Cacatua galerita</i> subsp. <i>galerita</i> (Sulphur-crested Cockatoo)	Y		
211.	25714 <i>Cacatua pastinator</i> (Western Long-billed Corella)			
212.	25715 <i>Cacatua roseicapilla</i> (Galah)			
213.	25716 <i>Cacatua sanguinea</i> (Little Corella)			
214.	24727 <i>Cacatua sanguinea</i> subsp. <i>westralensis</i> (Little Corella)			
215.	24729 <i>Cacatua tenuirostris</i> (Eastern Long-billed Corella)	Y		
216.	25598 <i>Cacomantis flabelliformis</i> (Fan-tailed Cuckoo)			
217.	24427 <i>Cacomantis flabelliformis</i> subsp. <i>flabelliformis</i> (Fan-tailed Cuckoo)			
218.	42307 <i>Cacomantis pallidus</i> (Pallid Cuckoo)			
219.	<i>Callevophthalmus lividus</i>			Y
220.	<i>Callogobius mucosus</i>			
221.	25717 <i>Calyptorhynchus banksii</i> (Red-tailed Black-Cockatoo)			
222.	<i>Cantherhines</i> sp.			
223.	<i>Caprichthys gymnura</i>			
224.	<i>Caranx</i> sp.			
225.	<i>Carassius auratus</i>			
226.	<i>Carcharhinus brachyurus</i>			
227.	<i>Carcharhinus leucas</i>			
228.	<i>Carcharhinus obscurus</i>			
229.	<i>Carcharhinus</i> sp.			
230.	25625 <i>Carduelis carduelis</i> (Goldfinch, European Goldfinch)	Y		
231.	24480 <i>Carduelis carduelis</i> subsp. <i>britannica</i> (Goldfinch)	Y		
232.	<i>Celaenia excavata</i>			
233.	24086 <i>Cercartetus concinnus</i> (Western Pygmy-possum, Mundarda)			
234.	<i>Cercophonius granulatus</i>			
235.	<i>Cercophonius sulcatus</i>			
236.	<i>Chaetodermis penicilligera</i>			

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237.	24186 <i>Chalinolobus gouldii</i> (Gould's Wattled Bat)			
238.	24187 <i>Chalinolobus morio</i> (Chocolate Wattled Bat)			
239.	24377 <i>Charadrius ruficapillus</i> (Red-capped Plover)			
240.	<i>Cheilodactylus gibbosus</i>			
241.	<i>Cheilodactylus rubrolabiatus</i>			
242.	<i>Cheilopogon olgae?</i>			Y
243.	<i>Cheilopogon</i> sp.			
244.	<i>Chelidonichthys kumu</i>			
245.	<i>Chelmonops curiosus</i>			
246.	43380 <i>Chelodina colliei</i> (South-western Snake-necked Turtle)			
247.	24321 <i>Chenonetta jubata</i> (Australian Wood Duck, Wood Duck)			
248.	47909 <i>Cheramoeca leucosterna</i> (White-backed Swallow)			
249.	<i>Cherax destructor</i>			
250.	24980 <i>Christinus marmoratus</i> (Marbled Gecko)			
251.	<i>Chroicocephalus novaehollandiae</i>			
252.	24432 <i>Chrysococcyx lucidus</i> subsp. <i>plagosus</i> (Shining Bronze Cuckoo)			
253.	<i>Circus Approximans</i>			Y
254.	24288 <i>Circus approximans</i> (Swamp Harrier)			
255.	24289 <i>Circus assimilis</i> (Spotted Harrier)			
256.	<i>Cirrhimuraena calamus</i>			
257.	24774 <i>Cladorhynchus leucocephalus</i> (Banded Stilt)			
258.	<i>Cleidopus gloriamaris</i>			
259.	<i>Cnidoglanis macrocephalus</i>			
260.	<i>Collocalia esculenta</i>			
261.	25675 <i>Colluricincla harmonica</i> (Grey Shrike-thrush)			
262.	24613 <i>Colluricincla harmonica</i> subsp. <i>rufiventris</i> (Grey Shrike-thrush)			
263.	24399 <i>Columba livia</i> (Domestic Pigeon)	Y		
264.	<i>Conger wilsoni</i>			
265.	<i>Contusus brevicaudus</i>			
266.	24361 <i>Coracina maxima</i> (Ground Cuckoo-shrike)			
267.	25568 <i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
268.	24362 <i>Coracina novaehollandiae</i> subsp. <i>novaehollandiae</i> (Black-faced Cuckoo-shrike)			
269.	<i>Cormocephalus aurantipes</i>			
270.	<i>Cormocephalus hartmeyer</i>			
271.	<i>Cormocephalus novaehollandiae</i>			
272.	<i>Cormocephalus rubiceps</i>			
273.	<i>Cormocephalus strigosus</i>			
274.	24416 <i>Corvus bennetti</i> (Little Crow)			
275.	25592 <i>Corvus coronoides</i> (Australian Raven)			
276.	24417 <i>Corvus coronoides</i> subsp. <i>perplexus</i> (Australian Raven)			
277.	24419 <i>Corvus splendens</i> (House Crow)			
278.	24671 <i>Coturnix pectoralis</i> (Stubble Quail)			
279.	25701 <i>Coturnix ypsilophora</i> (Brown Quail)			
280.	24420 <i>Cracticus nigrogularis</i> (Pied Butcherbird)			
281.	25595 <i>Cracticus tibicen</i> (Australian Magpie)			
282.	24422 <i>Cracticus tibicen</i> subsp. <i>dorsalis</i> (White-backed Magpie)			
283.	<i>Cracticus torquatus</i>			
284.	25596 <i>Cracticus torquatus</i> (Grey Butcherbird)			
285.	<i>Craterocephalus mugiloides</i>			
286.	25398 <i>Crinia georgiana</i> (Quacking Frog)			
287.	25399 <i>Crinia glauerti</i> (Clicking Frog)			
288.	25400 <i>Crinia insignifera</i> (Squelching Froglet)			
289.	25401 <i>Crinia pseudinsignifera</i> (Bleating Froglet)			
290.	<i>Cristiceps aurantiacus</i>			
291.	<i>Cristiceps australis</i>			
292.	<i>Cristiceps</i> sp.			
293.	30893 <i>Cryptoblepharus buchananii</i>			
294.	25020 <i>Cryptoblepharus plagioccephalus</i>			
295.	<i>Cryptoerithus quobba</i>			
296.	30899 <i>Ctenophorus adelaidensis</i> (Southern Heath Dragon, Western Heath Dragon)			
297.	25027 <i>Ctenopus australis</i>			
298.	25039 <i>Ctenopus fallens</i>			
299.	25040 <i>Ctenopus gemmula</i> (Jewelled South-west Ctenopus (Swan Coastal Plain subpop P3), skink)			
300.	25047 <i>Ctenopus impar</i>			
301.	<i>Cybiosarda elegans</i>			
302.	25087 <i>Cyclodomorphus celatus</i> (Western Slender Blue-tongue)			
303.	<i>Cyclosa trilobata</i>			
304.	24322 <i>Cygnus atratus</i> (Black Swan)			
305.	24323 <i>Cygnus olor</i> (Mute Swan)	Y		

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306.	<i>Cynoglossus maculipinnis</i>			
307.	<i>Cynoglossus</i> sp.			
308.	<i>Cyprinus carpio</i>			
309.	<i>Cypselurus</i> sp.			
310.	30901 <i>Dacelo novaeguineae</i> (Laughing Kookaburra)	Y		
311.	30902 <i>Dacelo novaeguineae</i> subsp. <i>novaeguineae</i> (Laughing Kookaburra)	Y		
312.	<i>Dactylopus dactylopus</i>			
313.	25673 <i>Daphoenositta chrysoptera</i> (Varied Sittella)			
314.	24606 <i>Daphoenositta chrysoptera</i> subsp. <i>pileata</i> (Varied Sittella, Black-capped Sittella)			
315.	24687 <i>Daption capense</i> (Cape Petrel)			
316.	<i>Deinopis unicolor</i>			Y
317.	<i>Delena cancerides</i>			
318.	25766 <i>Delma fraseri</i> (Fraser's Legless Lizard)			
319.	25296 <i>Demansia psammophis</i> subsp. <i>reticulata</i> (Yellow-faced Whipsnake)			
320.	<i>Dermatopsis</i> sp.			
321.	25607 <i>Dicaeum hirundinaceum</i> (Mistletoebird)			
322.	24442 <i>Dicrurus bracteatus</i> subsp. <i>bracteatus</i> (Spangled Drongo)			
323.	<i>Dingosa murata</i>			
324.	<i>Dingosa serrata</i>			
325.	<i>Dinocambala ingens</i>			
326.	<i>Diodon nichthemerus</i>			
327.	24929 <i>Diplodactylus granariensis</i> subsp. <i>granariensis</i>			
328.	44654 <i>Diplodactylus lateroides</i> (Speckled Stone Gecko)			
329.	24939 <i>Diplodactylus polyophthalmus</i>			
330.	<i>Dipulus caecus</i>			
331.	24470 <i>Dromaius novaehollandiae</i> (Emu)			
332.	<i>Echeneis naucrates</i>			
333.	25251 <i>Echiopsis curta</i> (Bardick)			
334.	<i>Edelia vittata</i>			
335.	25096 <i>Egernia kingii</i> (King's Skink)			
336.	25100 <i>Egernia napoleonis</i>			
337.	<i>Egretta garzetta</i>			
338.	<i>Egretta novaehollandiae</i>			
339.	<i>Elanus axillaris</i>			
340.	24290 <i>Elanus caeruleus</i> subsp. <i>axillaris</i> (Australian Black-shouldered Kite)			
341.	25250 <i>Elapognathus coronatus</i> (Crowned Snake)			
342.	<i>Elops hawaiiensis</i>			
343.	47937 <i>Elseiyornis melanops</i> (Black-fronted Dotterel)			
344.	<i>Engraulis australis</i>			
345.	<i>Enoplosus armatus</i>			
346.	<i>Eolophus roseicapillus</i>			
347.	24651 <i>Eopsaltria australis</i> subsp. <i>griseogularis</i> (Western Yellow Robin)			
348.	24652 <i>Eopsaltria georgiana</i> (White-breasted Robin)			
349.	24567 <i>Epthianura albifrons</i> (White-fronted Chat)			
350.	24570 <i>Epthianura tricolor</i> (Crimson Chat)			
351.	24258 <i>Equus caballus</i> (Horse)	Y		
352.	<i>Eriophora biapicata</i>			
353.	<i>Eriophora pustulosa</i>			
354.	<i>Ero aphana</i>			
355.	<i>Erythracarus decoris</i>			
356.	24379 <i>Erythronyctes cinctus</i> (Red-kneed Dotterel)			
357.	<i>Ethmostigmus rubripes</i>			
358.	<i>Eubalichthys mosaicus</i>			
359.	25745 <i>Eudyptes chrysolophus</i> (Macaroni Penguin)			Y
360.	24818 <i>Eudyptula minor</i> subsp. <i>novaehollandiae</i> (Little Penguin)			
361.	<i>Eupograptus kottae</i>			
362.	24368 <i>Eurostopodus argus</i> (Spotted Nightjar)			
363.	25621 <i>Falco berigora</i> (Brown Falcon)			
364.	24471 <i>Falco berigora</i> subsp. <i>berigora</i> (Brown Falcon)			
365.	25622 <i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
366.	24472 <i>Falco cenchroides</i> subsp. <i>cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
367.	25623 <i>Falco longipennis</i> (Australian Hobby)			
368.	24474 <i>Falco longipennis</i> subsp. <i>longipennis</i> (Australian Hobby)			
369.	<i>Favonigobius lateralis</i>			
370.	24041 <i>Felis catus</i> (Cat)	Y		
371.	<i>Filicampus tigris</i>			
372.	<i>Fistularia petimba</i>			
373.	<i>Fistularia</i> sp.			
374.	<i>Foetorepus calaupomus</i>			
375.	<i>Fringilla coelebs</i>			Y

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376.	25727 <i>Fulica atra</i> (Eurasian Coot)			
377.	24761 <i>Fulica atra</i> subsp. <i>australis</i> (Eurasian Coot)			
378.	24688 <i>Fulmarus glacialis</i> (Southern Fulmar)			
379.	30916 <i>Funambulus pennanti</i> (Indian Palm Squirrel)	Y		
380.	<i>Galaxias maculatus</i>			
381.	34028 <i>Galaxias occidentalis</i> (Western Minnow)			
382.	<i>Galeocerdo cuvier</i>			
383.	<i>Gallicolumba jobiensis</i>			Y
384.	25729 <i>Gallinula tenebrosa</i> (Dusky Moorhen)			
385.	24763 <i>Gallinula tenebrosa</i> subsp. <i>tenebrosa</i> (Dusky Moorhen)			
386.	25730 <i>Gallirallus philippensis</i> (Buff-banded Rail)			
387.	24765 <i>Gallirallus philippensis</i> subsp. <i>mellori</i> (Buff-banded Rail)			
388.	<i>Gallus gallus</i>			
389.	<i>Gambusia affinis</i>			
390.	<i>Gambusia</i> sp.			
391.	42314 <i>Gavicalis virescens</i> (Singing Honeyeater)			
392.	24959 <i>Gehyra variegata</i>			
393.	<i>Geogarypus taylori</i>			
394.	<i>Gerres subfasciatus</i>			
395.	25530 <i>Gerygone fusca</i> (Western Gerygone)			
396.	24271 <i>Gerygone fusca</i> subsp. <i>fusca</i> (Western Gerygone)			
397.	<i>Girella zebra</i>			
398.	<i>Glaucosoma hebraicum</i>			
399.	24054 <i>Globicephala macrorhynchus</i> (Short-finned Pilot Whale)			
400.	47962 <i>Glyciphila melanops</i> (Tawny-crowned Honeyeater)			
401.	<i>Gnathanacanthus goetzeei</i>			
402.	<i>Gonorynchus greyi</i>			
403.	<i>Gracula religiosa</i>			
404.	24443 <i>Grallina cyanoleuca</i> (Magpie-lark)			
405.	<i>Gymnapistes marmoratus</i>			
406.	<i>Gymnothorax richardsoni</i>			
407.	<i>Gymnothorax woodwardi</i>			
408.	25627 <i>Haematopus fuliginosus</i> (Sooty Oystercatcher)			
409.	24487 <i>Haematopus longirostris</i> (Pied Oystercatcher)			
410.	<i>Haliaeetus semifasciata</i>			
411.	24293 <i>Haliaeetus leucogaster</i> (White-bellied Sea-Eagle)			
412.	24295 <i>Haliastur sphenurus</i> (Whistling Kite)			
413.	24689 <i>Halobaena caerulea</i> (Blue Petrel)			
414.	<i>Hasarius adansoni</i>			
415.	25410 <i>Heleioporus eyrei</i> (Moaning Frog)			
416.	25412 <i>Heleioporus psammophilus</i> (Sand Frog)			
417.	<i>Hemicloea insidiosa</i>			Y
418.	25119 <i>Hemiergis quadrilineata</i>			
419.	<i>Heteroclinus heptaeolus</i>			
420.	<i>Heteroclinus roseus</i>			
421.	<i>Heterodontus portusjacksoni</i>			
422.	24961 <i>Heteronotia binoei</i> (Bynoe's Gecko)			
423.	<i>Heurodes turritus</i>			
424.	47965 <i>Hieraetus morphnoides</i> (Little Eagle)			
425.	25734 <i>Himantopus himantopus</i> (Black-winged Stilt)			
426.	24775 <i>Himantopus himantopus</i> subsp. <i>leucocephalus</i> (Black-winged Stilt)			
427.	<i>Hippocampus elongatus</i>			
428.	<i>Hippocampus</i> sp.			
429.	<i>Hippocampus tuberculatus</i>			
430.	24491 <i>Hirundo neoxena</i> (Welcome Swallow)			
431.	<i>Histiophryne</i> sp.			
432.	<i>Histrio histrio</i>			
433.	<i>Hoggicosa forresti</i>			
434.	<i>Hogna crispipes</i>			
435.	<i>Hogna immansueta</i>			
436.	<i>Holconia westralia</i>			
437.	<i>Holoplatys dejongi</i>			
438.	25366 <i>Hydrophis elegans</i> (Elegant Seasnake, Bar-bellied Seasnake)			
439.	42410 <i>Hydrophis ornatus</i> (Ornate Reef Seasnake, Sea Snake)			
440.	43384 <i>Hydrophis platurus</i> (Yellow-bellied Seasnake)			
441.	24211 <i>Hydrurga leptonyx</i> (Leopard Seal)			
442.	34001 <i>Hylacola cauta</i> subsp. <i>whitlocki</i> (Shy Groundwren)			
443.	<i>Hyperlophus vittatus</i>			
444.	<i>Hypnos monopterygium</i>			
445.	<i>Hyporhamphus regularis</i>			

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446.	<i>Ichthyscopus barbatus</i>			
447.	<i>Idiommata blackwalli</i>			
448.	<i>Idiosoma hirsutum</i>			
449.	<i>Isometroides vesicus</i>			
450.	<i>Isopeda leishmanni</i>			
451.	<i>Isopedella cana</i>			
452.	<i>Isopedella tindalei</i>			
453.	<i>Istiblennius lineatus</i>			
454.	<i>Istiblennius meleagris</i>			
455.	<i>Ixodes tasmani</i>			Y
456.	<i>Kangarosa properipes</i>			
457.	<i>Kyphosus cornelii</i>			
458.	<i>Kyphosus sydneyanus</i>			
459.	<i>Lactoria concatenatus</i>			
460.	<i>Lactoria cornuta</i>			
461.	<i>Lagocephalus scleratus</i>			
462.	24367 <i>Lalage tricolor</i> (White-winged Triller)			
463.	<i>Lampona brevipes</i>			
464.	<i>Lampona cylindrata</i>			
465.	<i>Lampona punctigera</i>			
466.	<i>Lamponella kimba</i>			
467.	<i>Lamprochernes savignyi</i>			
468.	24510 <i>Larus dominicanus</i> (Kelp Gull)			
469.	25637 <i>Larus novaehollandiae</i> (Silver Gull)			
470.	24511 <i>Larus novaehollandiae</i> subsp. <i>novaehollandiae</i> (Silver Gull)			
471.	25638 <i>Larus pacificus</i> (Pacific Gull)			
472.	<i>Latrodectus hasseltii</i>			
473.	<i>Lepidoblennius marmoratus</i>			
474.	<i>Lepidotrigla spinosa</i>			
475.	25133 <i>Lerista elegans</i>			
476.	25137 <i>Lerista gerrardii</i>			
477.	25148 <i>Lerista lineopunctulata</i>			
478.	25165 <i>Lerista praepedita</i>			
479.	<i>Leucosarcia melanoleuca</i>			
480.	<i>Leviprora inops</i>			
481.	25005 <i>Lialis burtonis</i>			
482.	25659 <i>Lichenostomus leucotis</i> (White-eared Honeyeater)			
483.	25661 <i>Lichmera indistincta</i> (Brown Honeyeater)			
484.	24582 <i>Lichmera indistincta</i> subsp. <i>indistincta</i> (Brown Honeyeater)			
485.	25415 <i>Limnodynastes dorsalis</i> (Western Banjo Frog)			
486.	<i>Linyphia cupidinea</i>			Y
487.	<i>Lissocampus runa</i>			
488.	42413 <i>Lissolepis luctuosa</i> (Western Swamp Skink)			
489.	25378 <i>Litoria adelaidensis</i> (Slender Tree Frog)			
490.	25388 <i>Litoria moorei</i> (Motorbike Frog)			
491.	25683 <i>Lonchura castaneothorax</i> (Chestnut-breasted Mannikin)			
492.	<i>Longepi woodman</i>			
493.	42414 <i>Lucasium alboguttatum</i>			
494.	<i>Lycosa australicola</i>			
495.	<i>Lycosa gilberta</i>			
496.	<i>Lycosa godeffroyi</i>			
497.	24132 <i>Macropus fuliginosus</i> (Western Grey Kangaroo)			
498.	24326 <i>Malacorhynchus membranaceus</i> (Pink-eared Duck)			
499.	25650 <i>Malurus elegans</i> (Red-winged Fairy-wren)			
500.	25651 <i>Malurus lamberti</i> (Variegated Fairy-wren)			
501.	24544 <i>Malurus lamberti</i> subsp. <i>assimilis</i> (Variegated Fairy-wren)			
502.	25652 <i>Malurus leucopterus</i> (White-winged Fairy-wren)			
503.	24549 <i>Malurus leucopterus</i> subsp. <i>leuconotus</i> (White-winged Fairy-wren)			
504.	24551 <i>Malurus pulcherrimus</i> (Blue-breasted Fairy-wren)			
505.	25654 <i>Malurus splendens</i> (Splendid Fairy-wren)			
506.	24583 <i>Manorina flavigula</i> (Yellow-throated Miner)			
507.	<i>Maratus pavonis</i>			
508.	<i>Maratus speciosus</i>			
509.	<i>Masasteron tuart</i>			
510.	<i>Maxillcosta scabriceps</i>			
511.	<i>Mecistocephalus tahitiensis</i>			Y
512.	<i>Meedo harveyi</i>			
513.	25758 <i>Megalurus gramineus</i> (Little Grassbird)			
514.	24838 <i>Megalurus gramineus</i> subsp. <i>gramineus</i> (Little Grassbird)			
515.	25663 <i>Melithreptus brevirostris</i> (Brown-headed Honeyeater)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
516.	24586 <i>Melithreptus brevirostris</i> subsp. <i>leucogenys</i> (Brown-headed Honeyeater)			
517.	24587 <i>Melithreptus chloropsis</i> (Western White-naped Honeyeater)			
518.	24736 <i>Melopsittacus undulatus</i> (Budgerigar)			
519.	25184 <i>Menetia greyii</i>			
520.	24598 <i>Merops ornatus</i> (Rainbow Bee-eater)			
521.	<i>Metavelifer multiradiatus</i>			
522.	<i>Meuschenia freycineti</i>			
523.	<i>Meuschenia hippocrepis</i>			
524.	<i>Microcanthus strigatus</i>			
525.	<i>Microcarbo melanoleucos</i>			
526.	25693 <i>Microeca fascinans</i> (Jacky Winter)			
527.	<i>Missulena granulosa</i>			
528.	<i>Missulena occatoria</i>			
529.	<i>Mitotichthys meraculus</i>			
530.	<i>Mituliodon tarantulinus</i>			
531.	<i>Mitzoruga insularis</i>			
532.	<i>Molycris quadricauda</i>			
533.	<i>Molycris vokes</i>			
534.	<i>Monacanthus chinensis</i>			
535.	25240 <i>Morelia spilota</i> subsp. <i>imbricata</i> (Carpet Python)			
536.	25191 <i>Morethia lineocellata</i>			
537.	25192 <i>Morethia obscura</i>			
538.	48008 <i>Morus serrator</i> (Australasian Gannet)			
539.	<i>Mugil cephalus</i>			
540.	<i>Muraenichthys</i> sp.			
541.	<i>Muraenichthys tasmaniensis</i>			
542.	24223 <i>Mus musculus</i> (House Mouse)	Y		
543.	24042 <i>Mustela putorius</i> (European Polecat, Ferret)	Y		
544.	<i>Mustelus antarcticus</i>			
545.	<i>Myandra bicincta</i>			
546.	<i>Myandra cambridgei</i>			
547.	25610 <i>Myiagra inquieta</i> (Restless Flycatcher)			
548.	<i>Myialges ancistroneae</i>			
549.	<i>Myliobatis australis</i>			
550.	25420 <i>Myobatrachus gouldii</i> (Turtle Frog)			
551.	25248 <i>Neelaps bimaculatus</i> (Black-naped Snake)			
552.	<i>Nelusetta ayraudi</i>			
553.	<i>Nematalosa come</i>			
554.	<i>Nematalosa erebi</i>			
555.	<i>Nematalosa vlaminghi</i>			
556.	25426 <i>Neobatrachus pelobatoides</i> (Humming Frog)			
557.	24738 <i>Neophema elegans</i> (Elegant Parrot)			
558.	<i>Neosebastes pandus</i>			
559.	<i>Nephila edulis</i>			
560.	<i>Nicodamus mainae</i>			
561.	<i>Ninox novaeseelandiae</i> subsp. <i>rufigaster</i>			Y
562.	<i>Nomeus gronovii</i>			
563.	25252 <i>Notechis scutatus</i> (Tiger Snake)			
564.	<i>Notiasemus glauerti</i>			
565.	<i>Notolabrus parilus</i>			
566.	<i>Novakiella trituberculosa</i>			
567.	<i>Numenius madagascariensis</i> subsp. <i>cyanopus</i>			
568.	<i>Nunciella aspera</i>			
569.	25564 <i>Nycticorax caledonicus</i> (Rufous Night Heron)			
570.	24194 <i>Nyctophilus geoffroyi</i> (Lesser Long-eared Bat)			
571.	24195 <i>Nyctophilus gouldi</i> (Gould's Long-eared Bat)			
572.	24742 <i>Nymphicus hollandicus</i> (Cockatiel)			
573.	<i>Nymphopsis acinacispinatus</i> subsp. <i>bathursti</i>			
574.	<i>Ocrisiona leucomis</i>			
575.	<i>Ocrisiona parmeliae</i>			
576.	24407 <i>Ocyphaps lophotes</i> (Crested Pigeon)			
577.	<i>Odax cyanomelas</i>			
578.	<i>Oecobius navus</i>			
579.	<i>Omegophora armilla</i>			
580.	<i>Ommatoiulus moreleti</i>			
581.	<i>Ommatoiulus moreletii</i>			
582.	<i>Omobranchus rotundiceps</i>			
583.	<i>Ophichthus melanochir</i>			
584.	<i>Ophichthus</i> sp.			
585.	<i>Ophisurus serpens</i>			

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586.	<i>Oplegnathus woodwardi</i>			
587.	<i>Oratemnus curtus</i>			
588.	<i>Orectolobus ornatus</i>			
589.	<i>Orectolobus</i> sp.			
590.	24085 <i>Oryctolagus cuniculus</i> (Rabbit)	Y		
591.	<i>Ostearius melanopygius</i>			
592.	<i>Othos dentex</i>			
593.	34016 <i>Ovis aries</i> (Sheep)			
594.	<i>Oxidus gracilis</i>			
595.	<i>Oxyopes rubicundus</i>			
596.	25680 <i>Pachycephala rufiventris</i> (Rufous Whistler)			
597.	24624 <i>Pachycephala rufiventris</i> subsp. <i>rufiventris</i> (Rufous Whistler)			
598.	24692 <i>Pachyptila belcheri</i> (Slender-billed Prion)			
599.	24693 <i>Pachyptila desolata</i> (Antarctic Prion)			
600.	25707 <i>Pachyptila salvini</i> (Salvin's Prion)			
601.	24696 <i>Pachyptila turtur</i> (Fairy Prion)			
602.	24697 <i>Pachyptila vittata</i> (Broad-billed Prion)			
603.	<i>Padda oryzivora</i>			
604.	<i>Pagrus auratus</i>			
605.	<i>Papillogobius punctatus</i>			
606.	<i>Parablennius postoculomaculatus</i>			
607.	<i>Parablennius tasmanianus</i>			
608.	<i>Paraplotosus albilabris</i>			
609.	<i>Parapriacanthus elongatus</i>			
610.	<i>Parascyllium variolatum</i>			
611.	25253 <i>Parasuta gouldii</i>			
612.	25681 <i>Pardalotus punctatus</i> (Spotted Pardalote)			
613.	24625 <i>Pardalotus punctatus</i> subsp. <i>punctatus</i> (Spotted Pardalote)			
614.	24626 <i>Pardalotus punctatus</i> subsp. <i>xanthopyge</i> (Yellow-rumped Pardalote)			
615.	25682 <i>Pardalotus striatus</i> (Striated Pardalote)			
616.	24630 <i>Pardalotus striatus</i> subsp. <i>westraliensis</i> (Striated Pardalote)			
617.	<i>Parequula melbournensis</i>			
618.	<i>Paristiopterus gallipavo</i>			
619.	<i>Parma mccullochi</i>			
620.	<i>Parma occidentalis</i>			
621.	<i>Paroaria coronata</i>			Y
622.	<i>Parvicrepis</i> sp. 2			
623.	25687 <i>Passer domesticus</i> (House Sparrow)	Y		
624.	<i>Pediana occidentalis</i>			
625.	<i>Pegasus volitans</i>			
626.	<i>Pelates sexlineatus</i>			
627.	24649 <i>Pelecanoides urinatrix</i> subsp. <i>exsul</i> (Common Diving Petrel)			
628.	24648 <i>Pelecanus conspicillatus</i> (Australian Pelican)			
629.	<i>Pelsartia humeralis</i>			
630.	<i>Pemppheris</i> sp.			
631.	48060 <i>Petrochelidon ariel</i> (Fairy Martin)			
632.	48061 <i>Petrochelidon nigricans</i> (Tree Martin)			
633.	48066 <i>Petroica boodang</i> (Scarlet Robin)			
634.	24659 <i>Petroica goodenovii</i> (Red-capped Robin)			
635.	25697 <i>Phalacrocorax carbo</i> (Great Cormorant)			
636.	24664 <i>Phalacrocorax carbo</i> subsp. <i>novaehollandiae</i> (Great Cormorant)			
637.	24665 <i>Phalacrocorax fuscescens</i> (Black-faced Cormorant)			
638.	25698 <i>Phalacrocorax melanoleucos</i> (Little Pied Cormorant)			
639.	24666 <i>Phalacrocorax melanoleucos</i> subsp. <i>melanoleucos</i> (Little Pied Cormorant)			
640.	<i>Phalacrocorax</i> sp.			
641.	24667 <i>Phalacrocorax sulcirostris</i> (Little Black Cormorant)			
642.	25699 <i>Phalacrocorax varius</i> (Pied Cormorant)			
643.	24668 <i>Phalacrocorax varius</i> subsp. <i>hypoleucos</i> (Pied Cormorant)			
644.	<i>Phalacrocorax varius</i> subsp. <i>hypoleucos</i> (Pied Cormorant)			
644.	<i>Phalacrocorax varius</i> subsp. <i>hypoleucos</i> (Pied Cormorant)			
644.	<i>Phalacrocorax varius</i> subsp. <i>hypoleucos</i> (Pied Cormorant)			
645.	24409 <i>Phaps chalcoptera</i> (Common Bronzewing)			
646.	<i>Pholcus phalangioides</i>			
647.	<i>Phryganoporus candidus</i>			
648.	48071 <i>Phylidonyris niger</i> (White-cheeked Honeyeater)			
649.	24596 <i>Phylidonyris novaehollandiae</i> (New Holland Honeyeater)			
650.	<i>Phyllopteryx taeniolatus</i>			
651.	<i>Physocyclus globosus</i>			
652.	<i>Pinkfloydia harveii</i>			
653.	<i>Pisodonophis cancrivorus</i>			
654.	24841 <i>Platalea flavipes</i> (Yellow-billed Spoonbill)			
655.	24842 <i>Platalea regia</i> (Royal Spoonbill)			

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656.	<i>Platycephalus endrachtensis</i>			
657.	<i>Platycephalus longispinis</i>			
658.	25720 <i>Platycercus icterotis</i> (Western Rosella)			
659.	24745 <i>Platycercus icterotis</i> subsp. <i>icterotis</i> (Western Rosella)			
660.	24747 <i>Platycercus spurius</i> (Red-capped Parrot)			
661.	25721 <i>Platycercus zonarius</i> (Australian Ringneck, Ring-necked Parrot)			
662.	24750 <i>Platycercus zonarius</i> subsp. <i>semitorquatus</i> (Twenty-eight Parrot)			
663.	24751 <i>Platycercus zonarius</i> subsp. <i>zonarius</i> (Port Lincoln Parrot)			
664.	25007 <i>Pletholax gracilis</i> subsp. <i>gracilis</i> (Keeled Legless Lizard)			
665.	25703 <i>Podargus strigoides</i> (Tawny Frogmouth)			
666.	24679 <i>Podargus strigoides</i> subsp. <i>brachypterus</i> (Tawny Frogmouth)			
667.	25704 <i>Podiceps cristatus</i> (Great Crested Grebe)			
668.	24680 <i>Podiceps cristatus</i> subsp. <i>australis</i> (Great Crested Grebe)			
669.	<i>Podykipus collinus</i>			
670.	<i>Poephila bichenovii</i>			Y
671.	<i>Poephila cincta</i>			
672.	25510 <i>Pogona minor</i> (Dwarf Bearded Dragon)			
673.	24907 <i>Pogona minor</i> subsp. <i>minor</i> (Dwarf Bearded Dragon)			
674.	24681 <i>Poliiocephalus poliocephalus</i> (Hoary-headed Grebe)			
675.	<i>Polygonarea imparata</i>			Y
676.	30854 <i>Polytelis anthopeplus</i> subsp. <i>westralis</i> (Regent Parrot)			
677.	<i>Pomacentrus</i> sp.			
678.	<i>Pomatomus saltatrix</i>			
679.	25731 <i>Porphyrio porphyrio</i> (Purple Swamphen)			
680.	24767 <i>Porphyrio porphyrio</i> subsp. <i>bellus</i> (Purple Swamphen)			
681.	24769 <i>Porzana fluminea</i> (Australian Spotted Crake)			
682.	25732 <i>Porzana pusilla</i> (Baillon's Crake)			
683.	24770 <i>Porzana pusilla</i> subsp. <i>palustris</i> (Baillon's Crake)			
684.	24771 <i>Porzana tabuensis</i> (Spotless Crake)			
685.	<i>Prionosternum nitidiceps</i>			
686.	<i>Prionosternum scutatatum</i>			
687.	<i>Psephotus dissimilis</i>			Y
688.	25261 <i>Pseudechis australis</i> (Mulga Snake)			
689.	<i>Pseudogobius olorum</i>			
690.	<i>Pseudolampona woodman</i>			
691.	25511 <i>Pseudonaja affinis</i> (Dugite)			
692.	25259 <i>Pseudonaja affinis</i> subsp. <i>affinis</i> (Dugite)			
693.	42416 <i>Pseudonaja mengdeni</i> (Western Brown Snake)			
694.	25263 <i>Pseudonaja modesta</i> (Ringed Brown Snake)			
695.	25433 <i>Pseudophryne guentheri</i> (Crawling Toadlet)			
696.	25434 <i>Pseudophryne occidentalis</i> (Western Toadlet)			
697.	24063 <i>Pseudorca crassidens</i> (False Killer Whale)			
698.	<i>Pseudorhombus jenynsii</i>			
699.	<i>Pseudorhombus</i> sp.			
700.	<i>Psittacula eupatria</i>			Y
701.	48085 <i>Psittacula krameri</i> (Indian Ringnecked Parrot, Rose-ringed Parakeet)	Y		
702.	<i>Psittacus erithacus</i>			Y
703.	24702 <i>Pterodroma brevirostris</i> (Kerguelen Petrel)			
704.	24703 <i>Pterodroma lessonii</i> (White-headed Petrel)			
705.	25710 <i>Pterodroma macroptera</i> (Great-winged Petrel)			
706.	<i>Pterodroma macroptera</i> subsp. <i>macroptera</i>			
707.	25711 <i>Pterodroma mollis</i> (Soft-plumaged Petrel)			
708.	<i>Pterygotrigla polyommata</i>			
709.	25712 <i>Puffinus assimilis</i> (Little Shearwater)			
710.	24711 <i>Puffinus assimilis</i> subsp. <i>assimilis</i> (Little Shearwater)			
711.	42344 <i>Purnella albifrons</i> (White-fronted Honeyeater)			
712.	<i>Purpureicephalus spurius</i>			
713.	<i>Pycnothea flynni</i>			
714.	25008 <i>Pygopus lepidopodus</i> (Common Scaly Foot)			
715.	<i>Rachycentron canadum</i>			
716.	24243 <i>Rattus fuscipes</i> (Western Bush Rat)			
717.	24244 <i>Rattus norvegicus</i> (Brown Rat)	Y		
718.	24245 <i>Rattus rattus</i> (Black Rat)	Y		
719.	<i>Raveniella arenacea</i>			
720.	<i>Raveniella cirrata</i>			
721.	<i>Raveniella peckorum</i>			
722.	<i>Raveniella subcirrata</i>			
723.	24776 <i>Recurvirostra novaehollandiae</i> (Red-necked Avocet)			
724.	<i>Regalecus glesne</i>			
725.	48096 <i>Rhipidura albiscapa</i> (Grey Fantail)			

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726.	25614 <i>Rhipidura leucophrys</i> (Willie Wagtail)			
727.	24454 <i>Rhipidura leucophrys</i> subsp. <i>leucophrys</i> (Willie Wagtail)			
728.	<i>Rhycherus gloveri</i>			
729.	<i>Rhycherus</i> sp.			Y
730.	<i>Sardinella gibbosa</i>			
731.	<i>Sardinella lemuru</i> ?			
732.	<i>Saurida grandisquamis</i>			
733.	<i>Saurida tumbil</i>			
734.	<i>Saurida undosquamis</i>			
735.	<i>Schuettea woodwardi</i>			
736.	<i>Scobinichthys granulatus</i>			
737.	<i>Scolopendra laeta</i>			
738.	<i>Scolopendra morsitans</i>			
739.	<i>Scomber australasicus</i>			
740.	<i>Scomberoides lysan</i>			
741.	<i>Scorpaena sumptuosa</i>			
742.	<i>Scorpius georgianus</i>			
743.	<i>Scytodes thoracica</i>			
744.	25534 <i>Sericornis frontalis</i> (White-browed Scrubwren)			
745.	24279 <i>Sericornis frontalis</i> subsp. <i>maculatus</i> (White-browed Scrubwren)			
746.	<i>Serinus canarius</i>			
747.	<i>Seriola dumerili</i>			
748.	<i>Seriola hippos</i>			
749.	<i>Servaea melaina</i>			
750.	<i>Servaea spinibarbis</i>			
751.	<i>Shark?</i> sp.			
752.	<i>Siganus fuscescens</i>			
753.	<i>Sillago bassensis</i>			
754.	<i>Sillago burrus</i>			
755.	<i>Sillago robusta</i>			
756.	<i>Sillago schomburgkii</i>			
757.	<i>Simaetha tenuior</i>			
758.	25266 <i>Simoselaps bertholdi</i> (Jan's Banded Snake)			
759.	<i>Siphonognathus argyrophanes</i>			
760.	<i>Siphonognathus radiatus</i>			
761.	<i>Siphonotus flavomarginatus</i>			
762.	30948 <i>Smicrornis brevirostris</i> (Weebill)			
763.	<i>Sminthopsis murina</i>			
764.	<i>Solaenodolichopus pruvoti</i>			
765.	<i>Sparidentex hasta</i>			Y
766.	<i>Sphyrna lewini</i>			
767.	<i>Sphyrna zygaena</i>			
768.	<i>Spratelloides robustus</i>			
769.	<i>Steatoda capensis</i>			
770.	<i>Steatoda grossa</i>			
771.	48113 <i>Stenella coeruleoalba</i> (Striped Dolphin)			
772.	24522 <i>Sterna bergii</i> (Crested Tern)			
773.	24525 <i>Sterna fuscata</i> subsp. <i>nubilosa</i> (Sooty Tern)			
774.	24528 <i>Sterna hybrida</i> subsp. <i>javanica</i> (Whiskered Tern)			
775.	24533 <i>Sterna paradisaea</i> (Arctic Tern)			
776.	48594 <i>Sternula nereis</i> (Fairy Tern)			
777.	24329 <i>Stictonetta naevosa</i> (Freckled Duck)			
778.	<i>Stigmatopora argus</i>			
779.	<i>Stolephorus</i> sp.			
780.	<i>Storena formosa</i>			
781.	25597 <i>Strepera versicolor</i> (Grey Currawong)			
782.	25589 <i>Streptopelia chinensis</i> (Spotted Turtle-Dove)	Y		
783.	30951 <i>Streptopelia chinensis</i> subsp. <i>tigrina</i> (Spotted Turtle-Dove)	Y		
784.	25590 <i>Streptopelia senegalensis</i> (Laughing Turtle-Dove)	Y		
785.	30950 <i>Streptopelia senegalensis</i> subsp. <i>senegalensis</i> (Laughing Turtle-Dove)	Y		
786.	<i>Strongylura leiura</i>			
787.	25518 <i>Strophurus spinigerus</i>			
788.	24942 <i>Strophurus spinigerus</i> subsp. <i>spinigerus</i>			
789.	25752 <i>Sturnus vulgaris</i> (Common Starling)	Y		
790.	<i>Supunna funerea</i>			
791.	<i>Supunna picta</i>			
792.	24259 <i>Sus scrofa</i> (Pig)	Y		
793.	<i>Sutorectus tentaculatus</i>			
794.	<i>Synchiropus papilio</i>			
795.	<i>Synothele durokoppin</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
796.	<i>Synochele michaelseni</i>			
797.	<i>Synochele rastelloides</i>			
798.	<i>Synsphyronus magnus</i>			
799.	25705 <i>Tachybaptus novaehollandiae</i> (Australasian Grebe, Black-throated Grebe)			
800.	24682 <i>Tachybaptus novaehollandiae</i> subsp. <i>novaehollandiae</i> (Australasian Grebe, Black-throated Grebe)			
801.	<i>Tachybaptus</i> sp.			
802.	24207 <i>Tachyglossus aculeatus</i> (Short-beaked Echidna)			
803.	25552 <i>Tadorna radjah</i> (Radjah Shelduck)			
804.	24331 <i>Tadorna tadornoides</i> (Australian Shelduck, Mountain Duck)			
805.	30871 <i>Taeniopygia guttata</i> subsp. <i>castanotis</i> (Zebra Finch)			
806.	<i>Tamopsis perthensis</i>			
807.	<i>Tandanus bostocki</i>			
808.	24167 <i>Tarsipes rostratus</i> (Honey Possum, Noolbenger)			
809.	<i>Tasmanicosa leuckartii</i>			
810.	<i>Terapon</i> sp.			
811.	<i>Testudo</i> sp.			Y
812.	<i>Tetragnatha demissa</i>			
813.	<i>Tetralycosa oraria</i>			
814.	<i>Tetraodon</i> sp.			Y
815.	<i>Tetrapturus angustirostris</i>			
816.	<i>Thereuopoda lesueurii</i>			
817.	<i>Threpterus maculosus</i>			
818.	24845 <i>Threskiornis spinicollis</i> (Straw-necked Ibis)			
819.	<i>Thyrsites atun</i>			
820.	<i>Thysanophrys cirronasus</i>			
821.	25203 <i>Tiliqua occipitalis</i> (Western Bluetongue)			
822.	25519 <i>Tiliqua rugosa</i>			
823.	25204 <i>Tiliqua rugosa</i> subsp. <i>aspera</i>			
824.	25207 <i>Tiliqua rugosa</i> subsp. <i>rugosa</i>			
825.	25549 <i>Todiramphus sanctus</i> (Sacred Kingfisher)			
826.	24309 <i>Todiramphus sanctus</i> subsp. <i>sanctus</i> (Sacred Kingfisher)			
827.	<i>Torquigener pleurogramma</i>			
828.	<i>Torquigener tuberculiferus</i>			
829.	<i>Trachinocephalus myops</i>			
830.	<i>Trachinotus baillonii</i>			
831.	<i>Trachurus novaehollandiae</i>			
832.	<i>Tragulichthys jaculiferus</i>			
833.	48141 <i>Tribonyx ventralis</i> (Black-tailed Native-hen)			
834.	25723 <i>Trichoglossus haematodus</i> (Rainbow Lorikeet)			
835.	24755 <i>Trichoglossus haematodus</i> subsp. <i>moluccanus</i> (Rainbow Lorikeet)	Y		
836.	24754 <i>Trichoglossus haematodus</i> subsp. <i>rubritorquis</i> (Red-collared Lorikeet)			
837.	25521 <i>Trichosurus vulpecula</i> (Common Brushtail Possum)			
838.	24158 <i>Trichosurus vulpecula</i> subsp. <i>vulpecula</i> (Common Brushtail Possum)			
839.	<i>Tridentiger trigonocephalus</i>			
840.	30848 <i>Tringa guttifer</i> (Nordmann's Greenshank)			
841.	<i>Trygonoptera mucosa</i>			
842.	<i>Trygonoptera personata</i>			
843.	<i>Trygonoptera personata?</i>			
844.	<i>Trygonorrhina fasciata</i>			
845.	48147 <i>Turnix varius</i> (Painted Button-quail)			
846.	24851 <i>Turnix velox</i> (Little Button-quail)			
847.	30954 <i>Tursiops aduncus</i> (Indo-Pacific Bottlenose Dolphin)			
848.	24069 <i>Tursiops truncatus</i> (Bottlenose Dolphin)			
849.	24852 <i>Tyto alba</i> subsp. <i>delicatula</i> (Barn Owl)			
850.	24983 <i>Underwoodisaurus milii</i> (Barking Gecko)			
851.	<i>Upeneus tragula</i>			
852.	<i>Urocampus carinirostris</i>			
853.	<i>Urodacus novaehollandiae</i>			
854.	<i>Urodacus planimanus</i>			
855.	<i>Urolophus lobatus</i>			
856.	<i>Urolophus paucimaculatus</i>			
857.	<i>Urolophus</i> sp.			
858.	<i>Vanacampus cf. margaritifera</i>			Y
859.	<i>Vanacampus phillipi</i>			
860.	<i>Vanacampus poecilolaemus</i>			
861.	25577 <i>Vanellus miles</i> (Masked Lapwing)			
862.	24384 <i>Vanellus miles</i> subsp. <i>miles</i> (Masked Lapwing)			
863.	24386 <i>Vanellus tricolor</i> (Banded Lapwing)			
864.	25218 <i>Varanus gouldii</i> (Bungarra or Sand Monitor)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
865.	25225 <i>Varanus rosenbergi</i> (Heath Monitor)			
866.	25526 <i>Varanus tristis</i> (Racehorse Monitor)			
867.	<i>Vauclusella calvq</i> (invalid)			Y
868.	<i>Venator immansueta</i>			
869.	<i>Venatrix pullastra</i>			
870.	24206 <i>Vespadelus regulus</i> (Southern Forest Bat)			
871.	24040 <i>Vulpes vulpes</i> (Red Fox)	Y		
872.	<i>Westrarchaea sinuosa</i>			
873.	<i>Xysticus periscelis</i>			Y
874.	<i>Zeus faber</i>			
875.	24083 <i>Ziphius cavirostris</i> (Cuvier's Beaked Whale)			
876.	25765 <i>Zosterops lateralis</i> (Grey-breasted White-eye, Silveryeye)			

Conservation Codes

T - Rare or likely to become extinct
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 B

Flora Species List



Family	Status	Species
Asparagaceae		<i>Acanthocarpus preissii</i>
Asphodelaceae	*	<i>Trachyandra divaricata</i>
Asteraceae		<i>Olearia axillaris</i>
Chenopodiaceae		<i>Rhagodia baccata</i>
Cyperaceae		<i>Schoenus grandiflorus</i>
Fabaceae		<i>Acacia cyclops</i>
Fagaceae	*PI	<i>Quercus robur</i>
Lauraceae		<i>Cassytha sp.</i>
Moraceae	*PI	<i>Ficus sp.</i>
Myrtaceae	*PI	<i>Agonis flexuosa</i>
	*PI	<i>Callistemon sp.</i>
	*PI	<i>Corymbia maculata</i>
	*PI	<i>Eucalyptus ?leucoxylon rosea</i>
	*PI	<i>Eucalyptus botryoides</i>
	*PI	<i>Eucalyptus camaldulensis</i>
	*PI	<i>Eucalyptus camaldulensis subsp. camaldulensis</i>
	*PI	<i>Eucalyptus camaldulensis subsp. obtusa</i>
		<i>Eucalyptus gomphocephala</i>
	*PI	<i>Eucalyptus grandis</i>
	*PI	<i>Eucalyptus rudis</i>
	*PI	<i>Eucalyptus sp.</i>
	*PI	<i>Lophostemon confertus</i>
	*PI	<i>Melaleuca lanceolata</i>
		<i>Melaleuca systema</i>
	*PI	<i>Metrosideros excelsa</i>
Oxalidaceae	*	<i>Oxalis pes-caprae</i>
Platanaceae	*PI	<i>Platanus acerifolia</i>

Family	Status	Species
Poaceae	*	<i>Cenchrus clandestinus</i>
	*	<i>Ehrharta calycina</i>
Rhamnaceae		<i>Spyridium globulosum</i>
Verbenaceae	*PI	<i>Citharexylum spinosum</i>

*=non-native, PI=planted

Appendix B

Technical Memorandum: Tree Assessment



TECHNICAL MEMORANDUM

Tree Assessment

Christ Church Grammar School Mount Claremont Playing Fields

PROJECT NUMBER	EP21-045(03)	DOC. NUMBER	EP21-045(03)—005A RAW
PROJECT NAME	CCGS Mt Claremont Scheme Amendment Support	CLIENT	Christ Church Grammar School
AUTHOR	RAW	REVIEWER	TAA
VERSION	A	DATE	16/08/2021

1 INTRODUCTION

1.1 Project background

Emerge Associates (Emerge) were engaged by Christ Church Grammar School (CCGS) to undertake a tree assessment across the CCGS Mount Claremont Playing Fields, Lot 2 McClemans Road, Mount Claremont (herein referred to as the 'site').

The site is approximately 8.1 hectares (ha) in size and is bounded by vegetation to the north and west, Fortview Road to the south and McClemans Road to the east. The location and extent of the site is shown in **Figure 1**.

1.2 Purpose and scope of work

The tree assessment is required to inform the detailed landscape design and various planning application documents. The scope of work was a preliminary tree assessment as per Australian Standard AS 4970-2009 *Protection of trees on development sites* (Standards Australia 2009)..

As part of the scope of work the following tasks were completed:

- A field survey to record attributes of all trees with a trunk diameter at breast height (DBH) of at least 15 centimetres (cm).
- Recommendation of the retention value of each tree.
- Calculation of tree protection zones and structural root zones for each tree.
- Documentation of the methodology and results into a report.

2 METHODS

2.1 Field survey

Three ecologists from Emerge visited the site on 18 May 2021 to conduct the field survey.

During the survey the site was traversed on foot and all trees with a DBH of at least 15 cm were assessed. An aluminium tag with a unique number was attached to each tree, as shown in **Plate 1**.



Plate 1: Example ID tag affixed to trees within the site

The attributes in **Table 1** were recorded for each tree.

Table 1: Attributes recorded for each tree

Attribute	Details
Unique ID	Aluminium tag number
Spatial location	XY coordinates using GPS receiver $\pm 5m^{\wedge}$
Image	Oblique digital photograph (12 megapixel or greater)
Species name	Using WA herbarium nomenclature
Common name	Using WA herbarium nomenclature
Height	1-5 m, 1-10 m, 10-15 m, 15-20 m, 20-25 m, 25 +m
Canopy spread (width)	1-5 m, 1-10 m, 10-15 m, 15-20 m
Trunk diameter	Diameter at breast height (DBH) (cm)
Health	Dead, poor, average, good, excellent
Structure	Poor, acceptable, good
Notes	Safety concerns, tree defects, presence of hollows, pruning requirements, whether the tree is a 'habitat tree' for threatened species of black cockatoo [#] , suitability of hollows for threatened species of black cockatoo, further ecologist/arborist assessment recommended etc.

[^]location updated after field survey with feature survey data; [#]defined as trees of a species known to support black cockatoo breeding and with a DBH of ≥ 50 centimetres (cm) for most tree species used by black cockatoos.

2.2 Mapping and analysis

Following the field survey, an inventory of all trees within the site was compiled. The location of each tree was mapped on an aerial image.

2.2.1 Retention value

Each tree was assigned a 'retention value' of 'high', 'medium' or 'low', based on the attributes recorded during the field survey. The criteria for each retention category are provided in **Table 2**.

Table 2: Tree retention category criteria

Retention category	Criteria
High	<ul style="list-style-type: none"> • DBH ≥50 cm • Local native or Australian native • 'Excellent' or 'good' health • 'Good' or 'acceptable' structure <p>OR</p> <ul style="list-style-type: none"> • Tree is a 'habitat tree' for species of threatened black cockatoo
Moderate	<ul style="list-style-type: none"> • At least 'average' health • At least 'acceptable' structure • Any size DBH • Local/Australian native or exotic
Low	<ul style="list-style-type: none"> • 'Poor' or 'dead' health and/or 'poor' structure • Any size DBH • Local/Australian native or exotic

2.2.2 Protection zones

2.2.2.1 Tree protection zone

Tree protection zones (TPZ), as defined by AS 4970-2009, are the principal means of protecting trees on development sites (Standards Australia 2009).

A TPZ is a circular area defined around a tree to isolate its roots and crown from construction disturbance. The radius of a TPZ is calculated by multiplying the DBH of a tree's trunk by 12, where DBH is measured in metres at a height of 1.4 m above the ground (Standards Australia 2009).

According to AS 4970-2009 a TPZ should not be less than 2 m, nor greater than 15 m except where crown protection is required.

The TPZ was calculated for all trees within the site and was displayed on an aerial image.

2.2.2.1 Structural root zone

The structural root zone (SRZ) is the minimum volume of roots required by a tree to remain stable in the ground (Standards Australia 2009). If the SRZ is breached the chances of windthrow are significantly increased, especially if roots are cut on the same side as prevailing winds. Windthrow is an event where the entire tree fails/falls over.

While an SRZ is typically drawn as a circular area it should be understood as a cylinder, designating the root soil volume required to support a tree. The radius of an SRZ (top of the cylinder) is calculated by the following formula: $SRZ = (D \times 50)^{0.42} \times 0.64$, where D is the trunk diameter in metres (Standards Australia 2009). According to AS 4970-2009 an SRZ should not be less than 1.5 m.

The SRZ was calculated for all trees within the site and was displayed on an aerial image.

3 RESULTS

3.1 Inventory

A total of 109 trees were recorded in the site, comprising three local native species, 16 non-native species (i.e. native to other parts of Australia or other countries) and stags (dead trees).

A summary of the trees recorded within the site is provided in **Table 2**. An inventory of the trees recorded within the site is provided in **Appendix A**.

Table 3: Tree species recorded within the site

Species name	Common name	Number of individuals
<i>Agonis flexuosa</i>	Peppermint	32
* <i>Callistemon</i> sp.	Bottlebrush	1
* <i>Citharexylum spinosum</i>	Spiny fiddlewood	2
* <i>Corymbia maculata</i>	Spotted gum	4
* <i>Eucalyptus ?leucoxydon rosea</i>	Red-flowering yellow gum	1
* <i>Eucalyptus botryoides</i>	Bangalay	19
* <i>Eucalyptus camaldulensis</i>	River gum	5
* <i>Eucalyptus camaldulensis</i> subsp. <i>camaldulensis</i>	River red gum	4
* <i>Eucalyptus camaldulensis</i> subsp. <i>obtusa</i>	Blunt-budded river red gum	3
<i>Eucalyptus gomphocephala</i>	Tuart	18
* <i>Eucalyptus grandis</i>	Rose gum	3
<i>Eucalyptus rudis</i>	Flooded gum	1
* <i>Eucalyptus</i> sp.	Eucalypt	1
* <i>Ficus</i> sp.	Fig	2
* <i>Lophostemon confertus</i>	Queensland box	1
<i>Melaleuca lanceolata</i>	Rottnest teatree	4
* <i>Metrosideros excelsa</i>	New Zealand Christmas tree	3
* <i>Platanus acerifolia</i>	London plane tree	1
* <i>Quercus robur</i>	Common oak	2
Stag (dead tree)	N/A	2

*indicates non-native.

3.2 Retention value

Most of the trees were assigned a high or moderate retention value.

A summary of the retention values of trees within the site is provided in **Table 4**. The retention value assigned to each tree is shown in **Figure 2**.

Table 4: Retention value of trees within the site

Retention value	Number of individuals
High [^]	45
Moderate	48
Low	16
Total	109

[^]includes seven trees which qualify as black cockatoo habitat trees (without hollows).

3.3 Protection zones

TPZs and SRZs for each tree are shown in **Figure 3**.

4 CONCLUSIONS

A total of 109 trees were recorded within the site, comprising three local native species, 16 non-native species (i.e. native to other parts of Australia or other countries) and stags (dead trees).

Seven black cockatoo habitat trees were recorded in the site. These trees were all *Eucalyptus gomphocephala* (tuart). No trees contain hollows suitable for breeding by black cockatoos.

The majority of the trees (93) were assigned a high or moderate retention value. The remaining 16 trees were assigned a low retention value.

TPZs and SRZs in accordance with AS 4970-2009 are provided for each tree.

5 REFERENCES

Standards Australia 2009, *AS 4970-2009 Protection of trees on development sites* Sydney.

Figures



Figure 1: Site Location

Figure 2: Tree Retention Value

Figure 3: Tree Protection Zones and Structural Root Zones



Figure 1: Site Location

Project: Tree Assessment
 Christ Church Grammar School Mount Claremont Playing Fields
Client: Christ Church Grammar School

Plan Number: EP21-045(03)--F17
Drawn: GAR
Date: 07/07/2021
Checked: RAW
Approved: TAA
Date: 13/07/2021



0 40 80
 Metres
 Scale: 1:3,000@A4
 GDA 1994 MGA Zone 50

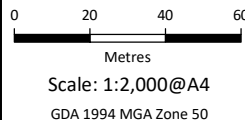




Figure 2: Tree Retention Value

Project: Tree Assessment
 Christ Church Grammar School Mount Claremont Playing Fields
Client: Christ Church Grammar School

Plan Number: EP21-045(03)--F18a
Drawn: SCM
Date: 16/08/2021
Checked: RAW
Approved: TAA
Date: 16/08/2021



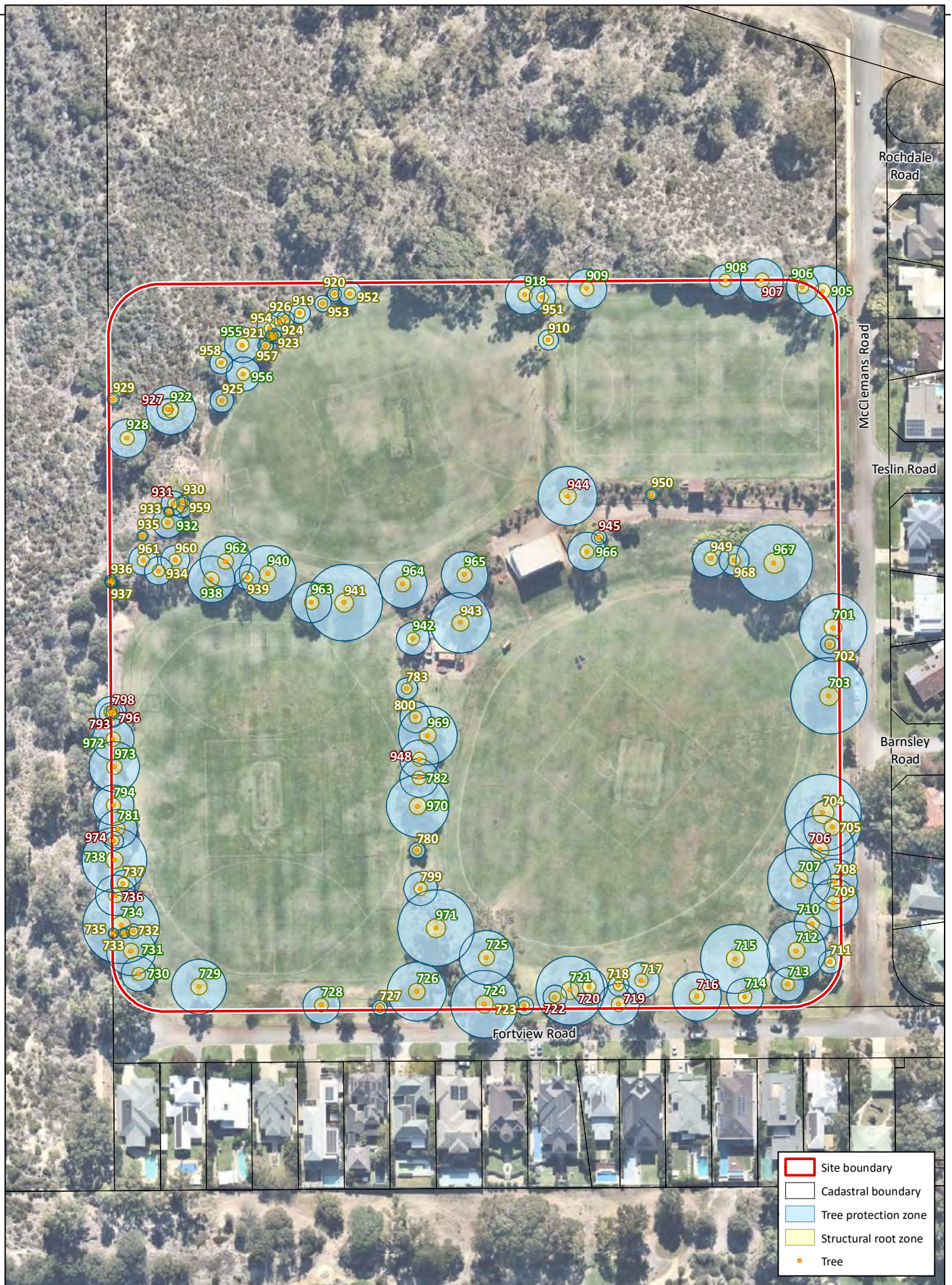


Figure 3: Tree Protection Zones and Structural Root Zones

Project: Tree Assessment
 Christ Church Grammar School Mount Claremont Playing Fields

Client: Christ Church Grammar School

Plan Number: EP21-045(03)--F19a
Drawn: SCM
Date: 16/08/2021
Checked: RAW
Approved: TAA
Date: 16/08/2021

0 20 40 60
 Metres
 Scale: 1:2,000@A4
 GDA 1994 MGA Zone 50



While Emmerge Associates makes every attempt to ensure the accuracy and completeness of data, Emmerge accepts no responsibility for externally sourced data used.
 © Landgate (2021). Nearmap Imagery date: 25/04/2021

Appendix A

Tree Inventory



Tag No.	Species	Easting	Northing	DBH (cm)	Photo No.	Height (m)	Width (m)	Health	Structure	Hollows	Hollows suitable for black cockatoos	Black cockatoo foraging species	Origin	Notes	Retention Value	TPZ (m)	SRZ (m)
701	<i>Eucalyptus camaldulensis</i>	383886	6463260	111	186 -187	20-25	10-15	good	good	no	No suitable hollow/s	Yes	Australian native		High	13.32	3.46
702	<i>Metrosideros excelsa</i>	383885	6463253	31	188 - 189	1-5	1-5	average	acceptable	no	No suitable hollow/s	No	Exotic		Moderate	3.72	2.02
703	<i>Agonis flexuosa</i>	383884	6463233	133	190	5-10	15-20	good	good	yes	No suitable hollow/s	Yes	Local native	splitting at base, hollow has formed	High	15.00	3.73
704	<i>Agonis flexuosa</i>	383882	6463187	184	191	5-10	10-15	average	good	no	No suitable hollow/s	Yes	Local native		Moderate	15.00	4.28
705	<i>Agonis flexuosa</i>	383886	6463182	93	192	5-10	5-10	average	acceptable	no	No suitable hollow/s	Yes	Local native	splits below bh, measured around largest trunks	Moderate	11.16	3.21
706	<i>Agonis flexuosa</i>	383881	6463173	113	193	5-10	10-15	poor	acceptable	yes	No suitable hollow/s	Yes	Local native	splitting at base, hollow has formed	Low	13.56	3.48
707	<i>Eucalyptus camaldulensis</i>	383873	6463161	104	194 -195	20-25	10-15	good	good	no	No suitable hollow/s	Yes	Australian native		High	12.48	3.36
708	<i>Agonis flexuosa</i>	383887	6463160	73	196	5-10	5-10	average	good	no	No suitable hollow/s	Yes	Local native		Moderate	8.76	2.90
709	<i>Eucalyptus botryoides</i>	383886	6463152	79	197	10-15	5-10	average	good	no	No suitable hollow/s	No	Australian native		Moderate	9.48	3.00
710	<i>Eucalyptus botryoides</i>	383878	6463144	60	198	5-10	5-10	good	good	no	No suitable hollow/s	No	Australian native		High	7.20	2.67
711	<i>Eucalyptus ?leucoxylon rosea</i>	383885	6463129	38	199 - 202	5-10	1-5	good	good	no	No suitable hollow/s	Yes	Australian native		Moderate	4.56	2.20
712	<i>Eucalyptus camaldulensis</i>	383872	6463133	96	203	15-20	15-20	good	good	no	No suitable hollow/s	Yes	Australian native		High	11.52	3.25
713	<i>Eucalyptus botryoides</i>	383868	6463120	55	204	10-15	5-10	good	good	no	No suitable hollow/s	No	Australian native		High	6.60	2.57
714	<i>Eucalyptus botryoides</i>	383852	6463115	60	205	10-15	5-10	good	good	no	No suitable hollow/s	No	Australian native	has a stick nest	High	7.20	2.67
715	<i>Eucalyptus gomphocephala</i>	383848	6463130	113	206	1-5	1-5	average	poor	no	No suitable hollow/s	Yes	Local native	has recently been pruned at about 4m. regrowth starting to occur	High	13.56	3.48
716	<i>Eucalyptus sp.</i>	383833	6463115	80	207 - 209	10-15	5-10	poor	poor	no	No suitable hollow/s	No	Australian native		Low	9.60	3.01
717	<i>Agonis flexuosa</i>	383811	6463122	58	210	1-5	1-5	average	acceptable	no	No suitable hollow/s	Yes	Local native		Moderate	6.96	2.63
718	<i>Corymbia ?maculata</i>	383802	6463120	34	211 - 212	10-15	10-15	average	acceptable	no	No suitable hollow/s	No	Australian native		Moderate	4.08	2.10
719	<i>Quercus robur</i>	383802	6463112	68	213 - 214	5-10	5-10	poor	poor	no	No suitable hollow/s	Yes	Exotic		Low	8.16	2.81
720	<i>Stag</i>	383791	6463119	60	216 - 217	5-10	1-5	dead	poor	no	No suitable hollow/s	No	N/A		Low	7.20	2.67
721	<i>Eucalyptus camaldulensis</i>	383783	6463118	112	219 - 220	20-25	15-20	good	good	no	No suitable hollow/s	Yes	Australian native		High	13.44	3.47
722	<i>Quercus robur</i>	383777	6463115	39	221	5-10	5-10	poor	poor	no	No suitable hollow/s	Yes	Exotic		Low	4.68	2.23
723	<i>Lophostemon confertus</i>	383765	6463112	30	222 - 224	1-5	1-5	good	good	no	No suitable hollow/s	No	Australian native		Moderate	3.60	2.00
724	<i>Eucalyptus gomphocephala</i>	383749	6463112	110	225 - 226	20-25	15-20	good	good	yes	No suitable hollow/s	Yes	Local native	several smaller hollows, bees in one	High	13.20	3.44
725	<i>Eucalyptus gomphocephala</i>	383750	6463131	89	227	20-25	20-25	good	good	yes	No suitable hollow/s	Yes	Local native	smaller hollows	High	10.68	3.15
726	<i>Agonis flexuosa</i>	383723	6463117	96	228	5-10	5-10	good	good	no	No suitable hollow/s	Yes	Local native		High	11.52	3.25
727	<i>Metrosideros excelsa</i>	383709	6463111	24	229 - 230	5-10	5-10	good	good	no	No suitable hollow/s	No	Exotic		Moderate	2.88	1.82
728	<i>Agonis flexuosa</i>	383686	6463112	60	231	5-10	10-15	good	good	no	No suitable hollow/s	Yes	Local native		High	7.20	2.67
729	<i>Eucalyptus botryoides</i>	383638	6463119	89	232	15-20	10-15	good	good	no	No suitable hollow/s	No	Australian native		High	10.68	3.15
730	<i>Eucalyptus botryoides</i>	383614	6463124	57	234	15-20	10-15	good	good	no	No suitable hollow/s	No	Australian native		High	6.84	2.61
731	<i>Eucalyptus botryoides</i>	383611	6463133	80	235	15-20	20-25	good	good	no	No suitable hollow/s	No	Australian native		High	9.60	3.01
732	<i>Eucalyptus gomphocephala</i>	383612	6463141	24	236	10-15	1-5	good	good	no	No suitable hollow/s	Yes	Local native		Moderate	2.88	1.82
733	<i>Eucalyptus gomphocephala</i>	383609	6463140	17	237 - 240	5-10	1-5	average	good	no	No suitable hollow/s	Yes	Local native		Moderate	2.04	1.57
734	<i>Eucalyptus gomphocephala</i>	383607	6463143	135	241	15-20	20-25	good	good	no	No suitable hollow/s	Yes	Local native	dbh measure approx based on level changes and sticking out branches	High	15.00	3.75
735	<i>Eucalyptus gomphocephala</i>	383604	6463140	17	242	1-5	1-5	average	good	no	No suitable hollow/s	Yes	Local native		Moderate	2.04	1.57
736	<i>Agonis flexuosa</i>	383605	6463155	66	247	5-10	10-15	poor	poor	no	No suitable hollow/s	Yes	Local native		Low	7.92	2.78
737	<i>Melaleuca lanceolata</i>	383608	6463160	42	243 - 246	15-20	20-25	average	acceptable	no	No suitable hollow/s	No	Local native	half the tree has snapped at base	Moderate	5.04	2.30
738	<i>Agonis flexuosa</i>	383605	6463169	106	248	10-15	5-10	good	good	no	No suitable hollow/s	Yes	Local native		High	12.72	3.39

Tag No.	Species	Easting	Northing	DBH (cm)	Photo No.	Height (m)	Width (m)	Health	Structure	Hollows	Hollows suitable for black cockatoos	Black cockatoo foraging species	Origin	Notes	Retention Value	TPZ (m)	SRZ (m)
780	<i>Metrosideros excelsa</i>	383723	6463173	26	52 to 56	5-10	5-10	good	acceptable	no	No suitable hollow/s	No	Exotic	Tree on a lean	Moderate	3.12	1.88
781	<i>Melaleuca lanceolata</i>	383606	6463181	63	63	10-15	5-10	good	acceptable	no	No suitable hollow/s	No	Local native		High	7.56	2.73
782	<i>Eucalyptus botryoides</i>	383724	6463201	63	51	10-15	10-15	good	good	no	No suitable hollow/s	No	Australian native		High	7.56	2.73
783	<i>Citharexylum spinosum</i>	383719	6463236	35	42 to 48	10-15	5-10	good	good	no	No suitable hollow/s	No	Exotic		Moderate	4.20	2.13
793	<i>Agonis flexuosa</i>	383603	6463227	51	60	5-10	10-15	average	poor	no	No suitable hollow/s	Yes	Local native	Tree on a lean	Low	6.12	2.49
794	<i>Agonis flexuosa</i>	383604	6463190	66	62	10-15	10-15	good	acceptable	no	No suitable hollow/s	Yes	Local native		High	7.92	2.78
796	<i>Agonis flexuosa</i>	383603	6463226	39	59	10-15	10-15	average	poor	no	No suitable hollow/s	Yes	Local native		Low	4.68	2.23
798	<i>Agonis flexuosa</i>	383604	6463227	22	58	5-10	1-5	average	poor	no	No suitable hollow/s	Yes	Local native		Low	2.64	1.75
799	<i>Agonis flexuosa</i>	383725	6463158	55	57	5-10	5-10	average	good	no	No suitable hollow/s	Yes	Local native		Moderate	6.60	2.57
800	<i>Citharexylum spinosum</i>	383723	6463225	51	49	10-15	5-10	good	good	no	No suitable hollow/s	No	Exotic		Moderate	6.12	2.49
905	<i>Eucalyptus camaldulensis subsp. camaldulensis</i>	383882	6463392	82	1	10-15	5-10	excellent	acceptable	no	No suitable hollow/s	Yes	Australian native		High	9.84	3.04
906	<i>Eucalyptus botryoides</i>	383874	6463393	53	2	10-15	5-10	excellent	acceptable	no	No suitable hollow/s	No	Australian native		High	6.36	2.53
907	<i>Agonis flexuosa</i>	383858	6463396	70	3	5-10	10-15	good	poor	no	No suitable hollow/s	Yes	Local native	Leaning	Low	8.40	2.85
908	<i>Agonis flexuosa</i>	383844	6463396	51	4	5-10	5-10	good	good	no	No suitable hollow/s	Yes	Local native		High	6.12	2.49
909	<i>Eucalyptus camaldulensis subsp. camaldulensis</i>	383790	6463393	65	5	10-15	5-10	excellent	acceptable	no	No suitable hollow/s	Yes	Australian native		High	7.80	2.76
910	<i>Eucalyptus camaldulensis subsp. obtusa</i>	383775	6463373	33	1	5-10	5-10	excellent	good	no	No suitable hollow/s	Yes	Australian native		Moderate	3.96	2.08
918	<i>Eucalyptus botryoides</i>	383765	6463390	64	2	5-10	5-10	good	good	no	No suitable hollow/s	No	Australian native		High	7.68	2.74
919	<i>Eucalyptus botryoides</i>	383677	6463383	34	4	5-10	1-5	average	good	no	No suitable hollow/s	No	Australian native		Moderate	4.08	2.10
920	<i>Eucalyptus camaldulensis</i>	383691	6463391	23	3	5-10	1-5	average	acceptable	no	No suitable hollow/s	Yes	Australian native		Moderate	2.76	1.79
921	<i>Eucalyptus gomphocephala</i>	383666	6463374	20	8	10-15	5-10	excellent	acceptable	no	No suitable hollow/s	Yes	Local native		Moderate	2.40	1.68
922	<i>Eucalyptus gomphocephala</i>	383627	6463345	81	11	10-15	10-15	poor	poor	no	No suitable hollow/s	Yes	Local native	lots of dead wood and severe lean	High	9.72	3.03
923	<i>Eucalyptus gomphocephala</i>	383667	6463374	25	7	10-15	5-10	excellent	acceptable	no	No suitable hollow/s	Yes	Local native		Moderate	3.00	1.85
924	<i>Eucalyptus gomphocephala</i>	383666	6463377	43	6	10-15	5-10	good	acceptable	no	No suitable hollow/s	Yes	Local native		Moderate	5.16	2.32
925	<i>Agonis flexuosa</i>	383647	6463349	38	13	5-10	5-10	good	acceptable	no	No suitable hollow/s	Yes	Local native	Slight lean	Moderate	4.56	2.20
926	<i>Eucalyptus gomphocephala</i>	383672	6463381	28	5	5-10	1-5	good	acceptable	no	No suitable hollow/s	Yes	Local native		Moderate	3.36	1.94
927	<i>Eucalyptus gomphocephala</i>	383625	6463345	35	12	5-10	5-10	dead	poor	no	No suitable hollow/s	Yes	Local native	Tree on a lean	Low	4.20	2.13
928	<i>Eucalyptus gomphocephala</i>	383610	6463334	63	10	10-15	15-20	good	poor	no	No suitable hollow/s	Yes	Local native	leans out quite a bit but balanced	High	7.56	2.73
929	<i>Eucalyptus gomphocephala</i>	383604	6463349	20	9	5-10	1-5	good	acceptable	no	No suitable hollow/s	Yes	Local native		Moderate	2.40	1.68
930	<i>Eucalyptus grandis</i>	383632	6463309	21	14	10-15	5-10	excellent	good	no	No suitable hollow/s	Yes	Australian native		Moderate	2.52	1.72
931	<i>Eucalyptus camaldulensis subsp. obtusa</i>	383628	6463308	40	15	5-10	10-15	good	poor	no	No suitable hollow/s	Yes	Australian native	severe lean	Low	4.80	2.25
932	<i>Eucalyptus botryoides</i>	383626	6463301	50	16	10-15	5-10	good	acceptable	no	No suitable hollow/s	No	Australian native		High	6.00	2.47
933	<i>Eucalyptus grandis</i>	383626	6463305	17	17	10-15	5-10	excellent	good	no	No suitable hollow/s	Yes	Australian native		Moderate	2.04	1.57
934	<i>Corymbia maculata</i>	383622	6463282	46	18	10-15	10-15	good	good	no	No suitable hollow/s	No	Australian native		Moderate	5.52	2.39
935	<i>Platanus acerifolia</i>	383616	6463296	18	19	5-10	5-10	good	good	no	No suitable hollow/s	No	Exotic		Moderate	2.16	1.61
936	<i>Melaleuca lanceolata</i>	383603	6463278	20	22	5-10	1-5	excellent	good	no	No suitable hollow/s	No	Local native		Moderate	2.40	1.68
937	<i>Melaleuca lanceolata</i>	383603	6463278	19	23	5-10	1-5	excellent	good	no	No suitable hollow/s	No	Local native		Moderate	2.28	1.65
938	<i>Agonis flexuosa</i>	383643	6463279	76	24	5-10	10-15	good	acceptable	no	No suitable hollow/s	Yes	Local native		High	9.12	2.95
939	<i>Eucalyptus botryoides</i>	383657	6463280	41	25	10-15	5-10	good	acceptable	no	No suitable hollow/s	No	Australian native		Moderate	4.92	2.28
940	<i>Agonis flexuosa</i>	383665	6463281	92	26	10-15	10-15	good	acceptable	no	No suitable hollow/s	Yes	Local native		High	11.04	3.20
941	<i>Agonis flexuosa</i>	383695	6463270	128	29	5-10	10-15	average	acceptable	yes	No suitable hollow/s	Yes	Local native	lorikeets or ring neck nesting in hollow in middle of the tree	Moderate	15.00	3.67

Tag No.	Species	Easting	Northing	DBH (cm)	Photo No.	Height (m)	Width (m)	Health	Structure	Hollows	Hollows suitable for black cockatoos	Black cockatoo foraging species	Origin	Notes	Retention Value	TPZ (m)	SRZ (m)
942	<i>Eucalyptus botryoides</i>	383722	6463255	54	30	10-15	5-10	good	good	no	No suitable hollow/s	No	Australian native		High	6.48	2.55
943	<i>Eucalyptus rudis</i>	383740	6463262	99	31	5-10	10-15	average	acceptable	no	No suitable hollow/s	No	Australian native	Habitat tree. growth on main trunk	Moderate	11.88	3.30
944	<i>Stag</i>	383782	6463311	97	32	5-10	1-5	dead	acceptable	yes	No suitable hollow/s	No	N/A		Low	11.64	3.27
945	<i>Callistemon sp.</i>	383794	6463295	24	34 to 36	5-10	5-10	poor	acceptable	no	No suitable hollow/s	Yes	Australian native		Low	2.88	1.82
948	<i>Agonis flexuosa</i>	383724	6463208	63	50	5-10	10-15	average	poor	no	No suitable hollow/s	Yes	Local native	Tree on a lean	Low	7.56	2.73
949	<i>Ficus sp.</i>	383838	6463287	60	37	10-15	10-15	excellent	acceptable	no	No suitable hollow/s	Yes	Exotic		Moderate	7.20	2.67
950	<i>Corymbia maculata</i>	383815	6463312	19	33	5-10	5-10	excellent	good	no	No suitable hollow/s	No	Australian native		Moderate	2.28	1.65
951	<i>Eucalyptus camaldulensis subsp. obtusa</i>	383772	6463389	43	6	5-10	5-10	excellent	acceptable	no	No suitable hollow/s	Yes	Australian native		Moderate	5.16	2.32
952	<i>Agonis flexuosa</i>	383697	6463391	39	7	5-10	5-10	good	acceptable	no	No suitable hollow/s	Yes	Local native		Moderate	4.68	2.23
953	<i>Eucalyptus botryoides</i>	383686	6463387	27	8	5-10	1-5	average	acceptable	no	No suitable hollow/s	No	Australian native		Moderate	3.24	1.91
954	<i>Eucalyptus gomphocephala</i>	383669	6463380	33	9	5-10	1-5	good	acceptable	no	No suitable hollow/s	Yes	Local native		Moderate	3.96	2.08
955	<i>Eucalyptus botryoides</i>	383655	6463371	58	10	5-10	5-10	good	acceptable	no	No suitable hollow/s	No	Australian native		High	6.96	2.63
956	<i>Eucalyptus botryoides</i>	383655	6463359	56	11	5-10	5-10	good	good	no	No suitable hollow/s	No	Australian native		High	6.72	2.59
957	<i>Eucalyptus gomphocephala</i>	383664	6463370	25	12	5-10	1-5	good	acceptable	no	No suitable hollow/s	Yes	Local native		Moderate	3.00	1.85
958	<i>Agonis flexuosa</i>	383646	6463364	37	13	5-10	5-10	good	acceptable	no	No suitable hollow/s	Yes	Local native		Moderate	4.44	2.18
959	<i>Eucalyptus grandis</i>	383631	6463307	33	23	10-15	1-5	excellent	acceptable	no	No suitable hollow/s	Yes	Australian native		Moderate	3.96	2.08
960	<i>Eucalyptus camaldulensis subsp. camaldulensis</i>	383628	6463286	47	24	5-10	5-10	good	acceptable	no	No suitable hollow/s	Yes	Australian native		Moderate	5.64	2.41
961	<i>Corymbia maculata</i>	383616	6463286	47	25	10-15	5-10	good	good	no	No suitable hollow/s	No	Australian native		Moderate	5.64	2.41
962	<i>Agonis flexuosa</i>	383648	6463286	83	27	5-10	5-10	good	acceptable	no	No suitable hollow/s	Yes	Local native		High	9.96	3.06
963	<i>Agonis flexuosa</i>	383682	6463270	66	28	5-10	5-10	good	acceptable	no	No suitable hollow/s	Yes	Local native		High	7.92	2.78
964	<i>Agonis flexuosa</i>	383718	6463277	78	29	5-10	5-10	excellent	good	no	No suitable hollow/s	Yes	Local native		High	9.36	2.98
965	<i>Eucalyptus botryoides</i>	383742	6463281	76	30	10-15	10-15	excellent	good	no	No suitable hollow/s	No	Australian native		High	9.12	2.95
966	<i>Eucalyptus botryoides</i>	383790	6463290	63	31	5-10	5-10	good	good	no	No suitable hollow/s	No	Australian native		High	7.56	2.73
967	<i>Eucalyptus camaldulensis subsp. camaldulensis</i>	383863	6463285	161	32	10-15	10-15	good	good	no	No suitable hollow/s	Yes	Australian native		High	15.00	4.04
968	<i>Ficus sp.</i>	383847	6463286	49	33	5-10	10-15	excellent	good	no	No suitable hollow/s	Yes	Exotic		Moderate	5.88	2.45
969	<i>Agonis flexuosa</i>	383727	6463218	96	34	5-10	5-10	good	good	no	No suitable hollow/s	Yes	Local native		High	11.52	3.25
970	<i>Agonis flexuosa</i>	383723	6463190	102	35	5-10	5-10	good	acceptable	no	No suitable hollow/s	Yes	Local native		High	12.24	3.34
971	<i>Eucalyptus gomphocephala</i>	383731	6463142	134	36	15-20	10-15	good	good	yes	No suitable hollow/s	Yes	Local native		High	15.00	3.74
972	<i>Agonis flexuosa</i>	383604	6463216	68	37	5-10	10-15	good	acceptable	no	No suitable hollow/s	Yes	Local native		High	8.16	2.81
973	<i>Agonis flexuosa</i>	383605	6463205	82	38	5-10	5-10	good	good	no	No suitable hollow/s	Yes	Local native		High	9.84	3.04
974	<i>Agonis flexuosa</i>	383604	6463176	31	39	5-10	1-5	poor	poor	no	No suitable hollow/s	Yes	Local native	two large sections of the tree are dead	Low	3.72	2.02

Appendix C

Preliminary concept plan





Preliminary Concept Plan

Lot 2 (2) McClemans Road, Mount Claremont

Date: 16 Jul 2021 Scale: 1:1500 @ A3 1:750 @ A1 File: 20-228 CP-1 Staff: AH AL Checked: AL



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Environmental Assessment Report

Lot 2 McClemons Road, Mount Claremont Scheme Amendment



Appendix 5

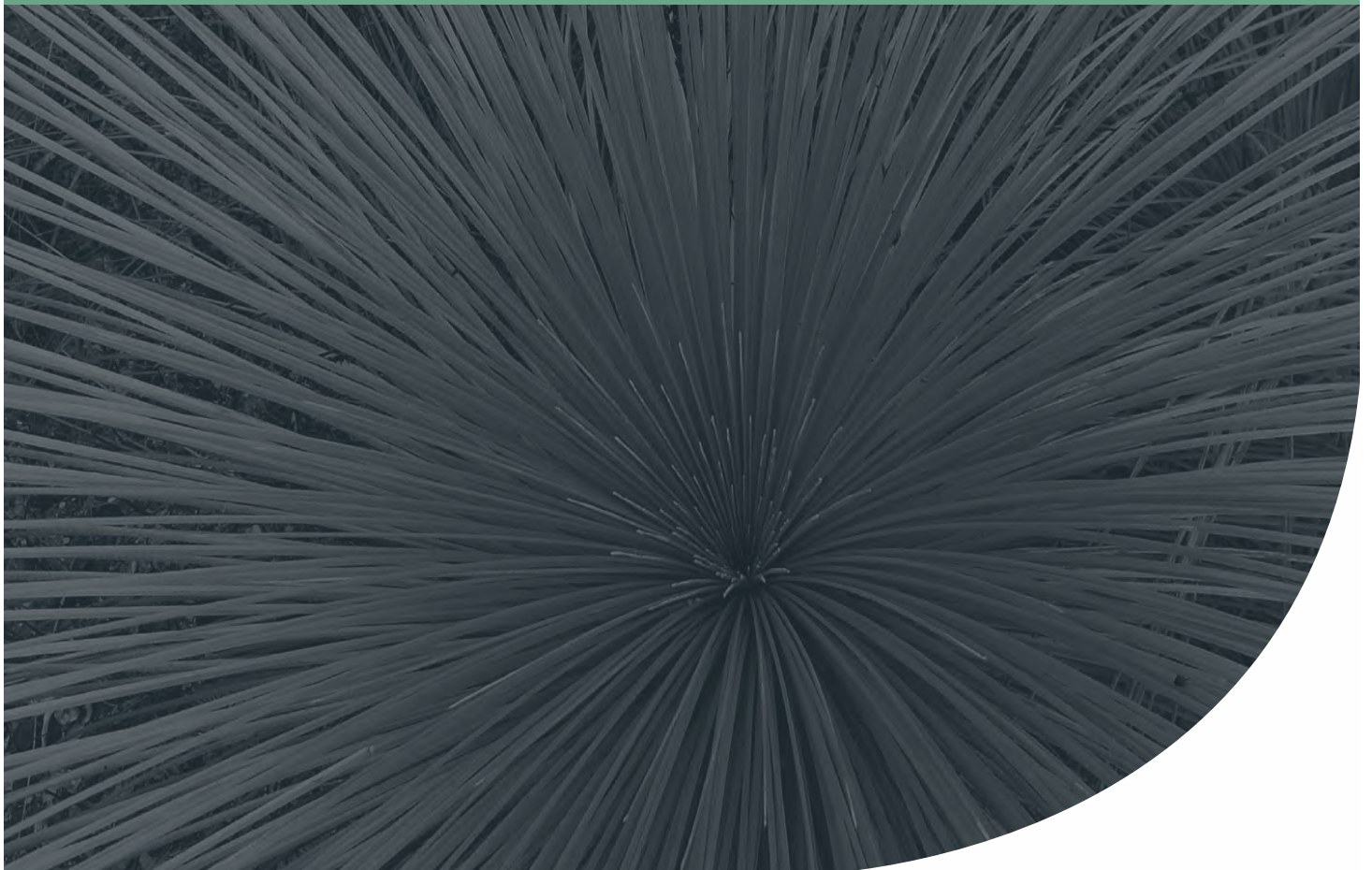
District Water Management Strategy (DWMS)

Lot 2 McClemens Road, Mount Claremont Scheme Amendment

District Water Management Strategy

Project No: EP21-045(06)

**Prepared for Christ Church Grammar School
July 2021**



Lot 2 McClemens Road, Mount Claremont Scheme Amendment

District Water Management Strategy



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Executive Summary

Christ Church Grammar School (CCGS) are preparing a *Local Planning Scheme No.1* (LPS No. 1 (LPS No.1) amendment request for the CCGS playing fields (referred to herein as ‘the site’) within the Town of Cambridge (ToC). The site is approximately 8.1 hectares (ha) in area and is currently zoned ‘Parks and Recreation’ and ‘Urban’ under the ToC LPS No.1 and Metropolitan Region Scheme. CCGS propose to rezone the site to ‘Development zone with a Special Control Area’ under the ToC LPS No.1.

This Scheme Amendment proposes the rezoning of the site to facilitate redevelopment in the form of residential development and public open space. The proposal will deliver a residential development outcome in a landscape setting including a landscape transition on the eastern (McClemens Road) and southern (Fortview Road) boundaries of the site to existing development. A key objective is the retention of the existing trees throughout the site to facilitate the landscape setting and transition to surrounding residential development and Bold Park.

This district water management strategy (DWMS) details the water management approach proposed for the development. The DWMS has been prepared in accordance with *Better Urban Water Management* (WAPC 2008), and *State Planning Policy 2.9 Water Resources* (WAPC 2006).

The key environmental attributes and values within and adjacent to the proposed site relevant to water management are summarised below:

- The site experiences an annual average rainfall of 711 mm.
- An embankment of 8 m separates the site into two playing fields. The elevation of the northern playing field ranges between 30 m AHD to 32 m AHD and the southern playing field elevation ranges between 26 m AHD in the south western portion to 24 m AHD in the south eastern portion.
- The entire site is underlain with calcareous sand and is assumed to have high permeability.
- There is no risk of encountering ASS within 3 m of the natural ground surface.
- No wetlands or surface water features have been identified within or near the site.
- Several drainage pits and connecting pipe exists at the intersection of McClemens Road and Barnsley Road. The discharge location for these is unclear however they likely overtop into the site. As the site sits within the low-point of the wider catchment area, a small portion of overland flow from McClemens Road reserve discharges to the site. A minor pit and pipe network exists beneath Fortview Road along the southern site boundary, collecting runoff from the road reserve via side entry pits. Runoff collected in the pit and pipe network along Fortview Road is conveyed towards the end of the cul-de-sac and discharges to the adjacent vegetated area via bubble-up pits.

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District Water Management Strategy



- Stormwater runoff generated within the site is expected to either infiltrate within lots of the site.
- Groundwater levels have a large clearance from the natural surface, with a minimum depth to groundwater of 21.5 m (at the lowest point of the site).
- Bush Forever Site (No. 315) lies to the north and west of the site.

The objectives and principles proposed in this DWMS are based on the characteristics of the existing environment and a contemporary best-practice approach to integrated water cycle management.

This DWMS adopts an integrated water cycle management approach, which seeks to deliver best practice outcomes for:

- Water supply and conservation
- Flood mitigation
- Surface water quality
- Groundwater management.

The existing environmental attributes of the site have guided development of design criteria which address the above aspects and which aim to meet the overall development objectives for the site.

The primary water management approach for the site is to mimic the existing hydrology, which infiltrates runoff at source, within the site. To manage the drainage within the site, a water sensitive urban design (WSUD) approach will be utilised within the site to maintain the pre-existing hydrology, including (but are not limited to):

- WSUD features including lot scale soakage (soakwells), bio-retention areas (BRAs) and subsurface soakage installed higher in the catchment to accommodate the small rainfall event (i.e. first 15 mm).
- Flood storage areas (FSAs) to provide storage and infiltration for the major rainfall event (i.e. 1% annual exceedance probability (AEP)). These will be integrated with surrounding public open space.

Future local water management strategy (LWMS) and urban water management plan (UWMP) documents will provide more detail regarding a number of aspects of water management, including (but are not limited to):

- WSUD strategies to be adopted.
- Design and location of flood storage/infiltration areas.
- Modelling of local road drainage network to reflect future Precinct Structure Plan and design approach.
- Non-potable water supply strategy.
- Water conservation strategy selection and implementation.
- Non-structural water quality improvement measures.

This DWMS is a key supportive document for the proposed rezoning and subsequent development. It has been prepared with the intention of providing a structure within which subsequent development can occur consistent with the integrated water cycle management approach, establishing water management methods that have been based on site-specific investigations, and

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are consistent with relevant state and ToC. It is also intended to provide guidance to the development of future LWMS and UWMP documents.

Lot 2 McClemens Road, Mount Claremont Scheme Amendment

District Water Management Strategy



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Appendices

Appendix A

Preliminary Concept Plan – Element

Appendix B

Landscape Concept Plan – Emerge 2021

Appendix C

Cut and fill depths – TABEC 2021

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Abbreviation Tables

Table A1: Abbreviations – Organisations

Organisations	
ANZECC	Australian and New Zealand Environment and Conservation Council
DoW	Department of Water
WAPC	Western Australia Planning Commission

Table A2: Abbreviations – General terms

General terms	
AEP	Annual exceedance probability
CCW	Conservation category wetland
DWMS	District Water Management Strategy
ESA	Environmentally sensitive area
LWMS	Local Water Management Strategy
MGL	Maximum groundwater level
MUW	Multiple use wetland
PEC	Priority Ecological Community
POS	Public open space
REW	Resource enhancement wetland
UFI	Unique feature identifier
UWMP	Urban Water Management Plan
WEFA	Water efficient fixtures and appliances
WSUD	Water sensitive urban design
WWG	Water wise garden

Table A4: Abbreviations – units of measurement

Units of measurement	
cm	Centimetre
ha	Hectare
m	Metre
m ²	square metre
m AHD	m in relation to the Australian height datum
mm	Millimetre

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1 Introduction

1.1 Background

Christ Church Grammar School (CCGS) is proposing to rezone the CCGS Mount Claremont playing fields (CCGS playing fields) to facilitate redevelopment in the form of residences and public open space (POS). The CCGS playing fields are located within Lot 2 McClemens Road, Mount Claremont (herein referred to as 'the site'). The site is located approximately 9 km west of the Perth Central Business District within the Town of Cambridge (ToC).

The site is approximately 8.1 hectares (ha) in size and is surrounded by remnant vegetation and Rochdale Road to the north, remnant vegetation and West Coast Highway to the west, urban development and Cottesloe Golf Course to the south and urban development adjacent McClemens Road to the east. The location of the site is shown in **Figure 1**.

1.2 Proposed scheme amendment

The Scheme Amendment proposes the rezoning of the site to facilitate redevelopment in the form of residential development and POS. The proposal will deliver a residential development outcome in a landscape setting including a landscape transition on the eastern (McClemens Road) and southern (Fortview Road) boundaries of the site to existing development. A key objective is the retention of existing trees throughout the site to facilitate the landscape setting and transition to surrounding residential development and Bold Park.

The site is comprised of a single lot and is zoned 'Urban' under the Metropolitan Region Scheme (MRS) and 'Parks and Recreation' under the ToC *Local Planning Scheme No. 1* (LPS No.1). An amendment to the ToC LPS No.1 has been submitted to rezone the site to 'Development Zone with a Special Control Area'. The preliminary concept plan is attached as **Appendix A**.

1.3 Purpose of this report

This District Water Management Strategy (DWMS) provides an overview of relevant considerations and the responsive water management approach proposed for the development to support a local scheme amendment application to rezone the site from 'Parks and Recreation Reserve' to 'Development zone with a Special Control Area', and has been prepared in accordance with *Better Urban Water Management* (WAPC 2008). The DWMS aims to demonstrate that the land is capable of being developed for the proposed land use and to identify any additional works that will be required to support Precinct Structure Planning and ultimately construction on site.

1.4 Policy framework

There are a number of State Government policies of relevance to the site. These policies include:

- *State Water Strategy (Government of WA 2003)*
- *State Water Plan (Government of WA 2007)*
- *State Planning Policy 2.9 Water Resources (WAPC 2006)*

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- *Guidance Statement No. 33: Environmental Guidance for Planning and Development* (EPA 2008)
- *Liveable Neighbourhoods Edition 4* (WAPC 2007)
- *Planning Bulletin No. 64: Acid Sulfate Soils* (WAPC 2009)

In addition to the above policies, there are a number of published guidelines and standards available that provide direction regarding the water discharge characteristics that residential developments should aim to achieve.

These are key inputs that relate either directly or indirectly to the site and include:

- *Better Urban Water Management* (WAPC 2008)
- *Australian Runoff Quality* (Engineers Australia 2006)
- *Australian Rainfall and Runoff* (Ball et al 2019)
- *Decision Process for Stormwater Management in Western Australia* (DoW 2017)
- *National Water Quality Management Strategy (NWQMS)* (ANZG 2018)
- *Stormwater Management Manual for Western Australia* (DoW 2007)
- *Guidelines for District Water Management Strategies* (DoW 2013)

2 Development Proposal

2.1 Local context

The site is comprised of level playing fields with trees running north/south and east/west between the fields and around a central pavilion area. The general locality of the site is characterised by a mixture of residential, recreational land uses and conservation areas.

2.2 Proposed development

The site is proposed to be developed into low-density residential lots between 360 m² to 717 m² in size and a large allocation (greater than 20%) of POS area. The preliminary development concept is attached as **Appendix A**. The site contains remnant vegetation and the development approach aims to avoid significant changes to the site elevation in order to retain a number of trees within the site. The landscape concept which demonstrates retention of trees is contained in **Appendix B**.

The earthworks approach seeks to retain as much of the existing surface elevation within the site as possible to facilitate tree retention, and a cut to fill approach is proposed to minimise the extent of imported fill required. This will also assist integrating with existing and surrounding roads and lot levels. The finished surface contour plan with preliminary cut and fill depths is shown in **Appendix C**.

The stormwater and groundwater management approach will ensure the post-development hydrology will mimic that of the pre-development hydrological environment. The site is located in a low point of the local catchment area, is underlain by permeable sand and has a significant clearance to groundwater and therefore in order to mimic the site hydrology stormwater will need to be retained on-site. Water quality treatment for small rainfall events (i.e. the first 15 mm) will be addressed at source or as close to source as possible within permeable portions of the site and dedicated surface and/or subsurface water retention/infiltration structures. Retention of the 1% annual exceedance probability (AEP) event within the site will be achieved through on-site infiltration within storage areas that are integrated into the landscape design/open spaces.

3 Existing Environment

3.1 Climate

The closest weather station to the site which records rainfall data is located in Subiaco (Bureau of Meteorology (BoM) station number 9151), situated approximately 3 km to the east. Based on weather data collected from 1967 to 2021, the local area experiences an average of 711.6 mm of annual rainfall, with a majority of rainfall occurring between June and August (BoM 2021).

3.2 Topography, landform and soils

3.2.1 Topography

The site has two main levels; the northern playing field elevation ranging from 30 m Australian Height Datum (m AHD) to 32 m AHD, and the southern playing field elevation ranging from 26 m AHD in the south western portion to 24 m AHD in the south eastern portion. The two levels of playing fields are separated by an 8 m embankment centrally within the site.

The north western portion of the site contains a steep embankment which rises from 36 m AHD to 46 m AHD. The topography of the site is shown in **Figure 2**.

3.2.2 Soils

Regional soil landscape mapping (DPIRD 2018) identifies the site as being situated on one soil-unit, being **Calcareous Sand (S2)**, which is described as white, fine to medium-grained, sub-rounded quartz and shell debris, of eolian origin.

The sandy soils beneath the site are known to have generally high permeability. Regional soil and landscape mapping is shown in **Figure 3**.

3.2.3 Acid sulfate soils

A review of the acid sulfate soil (ASS) risk mapping (DWER 2021) indicates that there is no risk of ASS occurring within 3 m of the natural surface of the site.

3.3 Hydrology

3.3.1 Groundwater

The site is within the Town of Cambridge Groundwater Management Area. Information on the regional groundwater resources obtained from DWER (2021) indicate that the site is underlain by a multi-layered aquifer system comprised of the following resources:

- Perth - Superficial Swan (unconfined).
- Perth – Yarragadee North (confined).

A review of the regional groundwater contours shown in the *Perth Groundwater Map* (DWER 2021) indicates that the maximum groundwater level (MGL) across the sites ranges between 2 m AHD to 3

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m AHD. There is a large clearance to the MGL from the natural surface with a minimum depth to groundwater of approximately 21.5 m (at the lowest point of the site). The MGL mapping is shown in **Figure 2**.

3.3.2 Surface water

No surface water features have been identified within the site.

Several drainage pits and connecting pipe exists at the intersection of McClemens Road and Barnsley Road. The discharge location for these is unclear however they likely overtop into the site. As the site sits within the low-point of the wider catchment area, a small portion of overland flow from McClemens Road reserve discharges to the site. A minor pit and pipe network exists beneath Fortview Road along the southern site boundary, collecting runoff from the road reserve via side entry pits. Runoff collected in the pit and pipe network along Fortview Road is conveyed towards the end of the cul-de-sac and discharges to the adjacent vegetated area via bubble-up pits. Existing stormwater infrastructure is shown in **Figure 4**.

3.3.3 Wetlands

There are no wetlands mapped within the site nor the immediate surrounding area.

3.3.4 Public drinking water source areas

Publicly available Public Drinking Water Source Area (PDWSA) mapping (DoW 2015) indicates that the site is not located within or adjacent to any declared PDWSA.

3.4 Natural assets

3.4.1 Bush Forever

Bush Forever Site 315 (Town of Cambridge) lies to the north and west of the site. Bush Forever mapping shown in **Figure 5**.

3.5 Summary of existing environment

In summary, the environmental investigations conducted to date indicate that:

- The site receives an annual average rainfall of 711 mm. The majority of rainfall is received between June and August.
- An embankment of 8 m separates the site into two main areas of playing fields. The elevation of the northern playing fields range between 30 m AHD to 32 m AHD and the southern playing fields elevation range between 26 m AHD in the south western portion to 24 m AHD in the south eastern portion.
- The entire site is underlain with calcareous sand which is typically characterised by high infiltration capacity.
- ASS risk mapping indicates that there is no risk of encountering ASS within 3 m of the natural ground surface.
- No wetlands or surface water features have been identified within or near the site.

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- Several drainage pits and connecting pipe exists at the intersection of McClemens Road and Barnsley Road. The discharge location for these is unclear however they likely overtop into the site. A small portion of overland flow from McClemens Road reserve discharges to the site. A minor pit and pipe network exists beneath Fortview Road along the southern site boundary, collecting runoff from the road reserve via side entry pits. Runoff collected in the pit and pipe network along Fortview Road is conveyed towards the end of the cul-de-sac and discharges to the adjacent vegetated area via bubble-up pits.
- Stormwater runoff generated within the site is expected to infiltrate at source.
- The natural surface has a large clearance from MGL, with a minimum depth to groundwater of 21.5 m (at the lowest point of the site).
- Bush Forever Site (No. 315) lies to the north and west of the site.

4 Design Criteria and Objectives

This section outlines the objectives and design criteria that this DWMS and future management strategies must achieve. The water management strategy covers stormwater management, groundwater management and water supply and conservation.

4.1 Integrated water cycle management

The *State Water Strategy (Government of WA 2003)* and *Better Urban Water Management (WAPC 2008)* endorse the promotion of integrated water cycle management and application of water sensitive urban design (WSUD) principles to provide improvements in the management of stormwater, and to increase the efficient use of other existing water supplies.

Integrated water cycle management addresses not only physical and environmental aspects of water resource use and planning, but also integrates other social and economic concerns. Stormwater management design objectives should therefore seek to deliver best practice outcomes in terms of:

- Water supply and conservation
- Flood mitigation
- Surface water quality
- Groundwater management.

The first step in applying integrated water cycle management in urban areas is to establish agreed environmental values for receiving environments. The existing environmental context of the site has been discussed in **Section 3**. Guidance regarding environmental values and criteria is provided by a number of national and State policies and guidelines, as detailed in **Section 1.4**.

The design criteria discussed in the following sections are based on the assessment of the existing environment within the site and the surrounding area, and have the aim of achieving the integrated water cycle outcomes discussed above.

4.2 Water supply and conservation

This DWMS proposes the following water conservation criteria.

Criteria WC1 Utilise fit for purpose water sources throughout the development.

Criteria WC2 POS to be irrigated at no more than 7,500kL/ha/year

Criteria WC3 Consumption target for in lot uses of water of 100 kL/person/year.

The manner in which these objectives will be achieved is further detailed in **Section 5**.

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4.3 Stormwater management

The principle behind stormwater management at the site is to mimic the pre-development hydrological conditions, described in **Section 3.3**. This DWMS proposes the following stormwater management criteria:

Criteria SW1 Retain and treat the small rainfall event (first 15 mm) as close to source as possible.

Criteria SW2 Retain runoff from the major (1% AEP) event from the site.

Criteria SW3 Accommodate runoff from existing contributing catchments during the major rainfall event.

Criteria SW4 Habitable floor levels should provide 500 mm clearance above the major event flood levels within onsite water management infrastructure.

Criteria SW5 Utilise appropriate non-structural measures to reduce nutrient loads.

The manner in which these objectives will be achieved is further detailed in **Section 6**.

4.4 Groundwater management

The principle behind the groundwater management strategy is to maintain the existing groundwater hydrology. This DWMS proposes the following groundwater management criteria:

Criteria GW1 Maintain or improve the quality of groundwater beneath the site.

The manner in which these objectives will be achieved is further detailed in **Section 7**.

5 Water Conservation Strategy

5.1 Fit-for-purpose water use

Conservation of water through fit-for-purpose use and best management practices is encouraged so that water is not wasted. Fit-for-purpose principles have been utilised in the water conservation strategy for the site and will achieve **Criteria WC1**.

5.1.1 Scheme water

The Water Corporation owns and maintains the existing water reticulation system in Mount Claremont. An existing NB460 RC distribution main is located in McClemens Road, and there are NB100 water reticulation lines in both McClemens Road and Fortview Road. The water reticulation system is proposed to be extended to service the site. The design will need to be approved by the Water Corporation and all construction will need to be undertaken in accordance with Water Corporation specifications, as outlined in the Servicing Report (TABEC 2021).

5.1.2 Groundwater

The proponent currently holds a licence to take 65,250 kL per annum from the Perth Superficial Aquifer (GWL154876). Some of this allocation may be used to support the construction of the proposed site (for dust suppression purposes), and a smaller portion of the licence may be available to provide irrigation for POS.

The development proposal includes 2.94 ha of POS area. In order to achieve the irrigation target of 7,500 kL/ha/year, the total irrigation demand would be 22,050 kL/year. This annual irrigation requirement is within the site groundwater allocation licence and will achieve **Criteria WC2**.

The irrigation requirements of POS area may be subject to change at the subdivision stage and the target to meet 7,500 kL/ha/year will need to be implemented in the planning and design stages as development progresses.

5.1.3 Rainwater

Collection of rainwater from lot roof surfaces can potentially be undertaken, with this water stored within rainwater tanks for later use. Rainwater can potentially be utilised for at-lot non-potable purposes including hot water systems, toilets and other ex-house uses.

It is not proposed that the installation of rainwater tanks will be mandated given that scheme water is envisaged to be available. However, some lot owners may elect to install rainwater tanks to supplement scheme water use. If rainwater tanks are to be included in the proposed water conservation strategy, this will be described in the future LWMS.

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5.2 Water conservation measures

5.2.1 Water efficient fixtures and appliances

A significant reduction of in-house water consumption can be achieved with the adoption of water efficient fixtures and appliances (WEFA). The water conservation strategy for the site proposes that all dwellings implement WEFA. Water efficient fittings will be mandated through the building licence, while uptake of water efficient appliances can be encouraged by state and local government rebates, as well as education from the developer at point of sale.

5.2.2 Water wise gardens

Water use efficiency measures can significantly reduce the total consumption for irrigation purposes. Water use can be reduced on a development scale by employing water wise gardening (WWG) measures within both POS and lots, and these measures include:

- Improve soil with conditioner certified to *Australian Standard AS4454* to a minimum depth of 150 mm where turf is to be planted and a minimum depth of 300 mm for garden beds.
- Design and install the irrigation system according to best water efficient practices.
 - Control systems must be able to irrigate different zones with different irrigation rates.
 - Emitters must disperse coarse droplets or be subterranean.
 - Utilise subsoil irrigation where appropriate.
- Minimise the amount of turf areas. It is noted that some measure of turf will be retained/utilised to maintain some of the existing amenity provided by the site.
- Mulch garden beds to 75 mm with a product certified to *Australian Standard AS4454*.
- Retain remnant native trees and vegetation where practicable.
- Minimise use of fertiliser and/or utilise slow release fertilisers.

WWG principles should be promoted to lot owners at point of sale.

The adoption of WEFA and WWG principles will assist in achieving **Criteria WC2**.

5.2.3 Educational material

Educational material will be provided to lot purchasers to provide information on water efficiency and water quality protection measures that they can implement. Provision of educational material will assist in achieving **Criteria WC2** and **Criteria GW1**.

Specific water conservation and protection topics may include:

- Water use reduction
- Water efficient technologies
- Fertiliser use
- Water wise planting species selection.

5.3 Wastewater

The site is proposed to be connected to existing sewer connections located in McClemens Road and Fortview Road.

6 Stormwater Management

The principle behind the stormwater management strategy is to maintain the existing hydrology of the site. The adoption of the development drainage system and the utilisation of various WSUD strategies will achieve the design criteria stated in **Section 4.3**.

6.1 WSUD strategies

Examples of possible WSUD techniques that may be utilised include:

- Lot scale infiltration
- Bio-retention areas (BRAs)
- Subsurface storage
- Flood storage areas (FSAs)

Further WSUD measures which may be suitable for the site will be investigated at future planning stages. If adopted these measures will be described in future LWMS and UWMP documents.

6.2 Lot scale infiltration

A primary objective in the stormwater management strategy is to maintain pre-development hydrology. Within lots, the small rainfall event is to be retained and treated within the lot or as close to source as possible. It is expected the high permeability of the sandy soil beneath the site will have the capacity to infiltrate the first 15 mm within lots, typically within soakwells. Runoff from events larger than this will infiltrate at source within the surrounding permeable (garden) areas within the lot.

Infiltration of runoff through the underlying soils will provide treatment through filtration and adsorption of pollutants/nutrients to sand particles. Other lot scale storage systems may also be considered, and where proposed will be detailed in future LWMS and UWMP documents.

6.3 Development drainage

As the site is at a low point of the local drainage catchment, there is no external outfall or discharge opportunity and therefore the development will need to cater for the 1% AEP rainfall event. Drainage from the proposed road network will first need to be treated to manage water quality. This will occur within either vegetated BRAs at the surface, or subsurface storage/infiltration cells; whichever provides the appropriate amenity and management outcomes for the location. Sub-surface storage structures may be favoured over surface structures as they increase the area that can be utilised for POS.

For rainfall events greater than the first 15 mm of rainfall and up to the 1% AEP event, the site will need to cater for runoff from the site and existing contributing catchments. This will occur within FSAs that will be integrated into open spaces in a manner which contributes to the amenity of the POS and facilitates retention of existing trees. This will discharge into FSAs via a pipe network designed for the 20% AEP event and overland flow events up to the 1% AEP. The stormwater

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drainage system for the local road network will need to be designed and constructed in accordance with the ToC requirements.

The development of the site will result in approximately 0.76 ha of the site becoming road pavement. The development will need to install structural measures (BRAs/subsurface storage/FSA) to ensure the site is capable of treating the first 15 mm of rainfall from the road reserves and provide flood retention for the major (1% AEP) event within the site. The approximate volume of runoff required for stormwater infrastructure (including runoff from McClemens Road) is summarised in **Table 1** and **Table 2**. Indicative locations of treatment and storage areas to receive upstream catchment runoff is shown in **Figure 6**.

Table 1: Approximate volume and spatial requirements for the small rainfall event.

Catchment area	Total catchment area (ha)	Storage volume required for the small event (m ³)	BRA surface area assuming 1:3 side slopes (m ²)	BRA reference
Ct-A	0.22	32	128	BRA1A
Ct-B	0.11	16	68	
Ct-C	0.12	19	76	BRA1B
Ct-D	0.29	43	165	BRA2
Ct-E	0.03	5	24	BRA3
McClemens Rd contributing sub-catchment	0.30	46	173	-
Total*	0.77	384	461	-
Total**	0.30	152	634	-

*Not including the sub-catchment area of McClemens Road

**Only applies to the sub-catchment of McClemens Road

Table 2: Approximate volume and spatial requirements for major rainfall event runoff.

Catchment area	Total catchment area (ha)	Storage volume required for the minor event (m ³)	Storage volume required for the major event (m ³)	FSA surface area (m ²)	FSA reference
Ct-A	0.22	79	148	514	FSA1
Ct-B	0.11	39	74		
Ct-C	0.12	45	84		
McClemens Rd contributing sub-catchment	0.30	111	208		
Ct-D	0.29	104	195	195	FSA2
Ct-E	0.03	12	22	22	FSA3
Total	1.07	390	731	731	-

The stormwater estimates provided in **Table 1** and **Table 2** assume the following:

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- 3-hour duration rainfall event
- BRAs are 0.3 m deep with 1:3 side slopes
- FSAs are 1.0 m deep
- No infiltration at the base of infiltration structures - to provide a conservative assessment at this early stage. It will be appropriate for the volumes and surface areas required to be revised during future design process and reported on in the future LWMS and UWMP documents.

Based on the lot levels of 25.50 m AHD adjacent to the central POS, the invert of the FSA will be approximately 24.0 m AHD, which is the approximate elevation of the existing turf area. The configuration could be revised in the future to provide a shallower storage area to suit other objectives of the surrounding POS and to maximise the infiltration capacity of the underlying site soils.

Further detail of 500 mm clearance between habitable floor levels and the top water level of the 1% AEP event in flood retention areas will be provided in future LWMS and UWMP documents.

7 Groundwater Management

The main objective for the management of groundwater is to maintain or improve the existing groundwater quality. Improvements to groundwater quality can be achieved by reducing the total nutrient load directly to groundwater and by the treatment of surface water runoff prior to infiltration to groundwater. Treatment of surface runoff will be achieved by the use of the WSUD measures discussed in **Section 6** and will be achieved by the following approaches

- **Infiltration at source.** As discussed in **Section 6**, the proposed stormwater management approach includes retaining the small rainfall event as close to source as possible within lots, within BRAs/subsurface infiltration cells and within FSAs designed to integrate into surrounding POS. Infiltration within residential lots and drainage treatment areas will assist in nutrient removal where the underlying soils will provide treatment through filtration and adsorption of pollutants/nutrients to sand particles.
- **Change of land use.** As detailed in **Section 2**, the site is currently used for parks and recreation (i.e. playing fields) purposes. The use of fertilisers associated with turf ovals provides a source of nutrient loads to the underlying groundwater system and downstream environment. The proposed residential development will result in a significant reduction in the amount of turf requiring ongoing use of fertilisers. This will reduce the total nutrient load to the underlying groundwater.
- **Waterwise landscaping.** The site is surrounded by native and remnant vegetation and trees will be retained where possible within the site. POS areas proposed within the site will adopt the use of WWG principles to minimise the overall fertiliser requirements and therefore the nutrient load to groundwater. Lot owners will be encouraged to implement WWG principles and minimise fertiliser use within lot through provision of promotional material (discussed in **Section 5.2.3**). The reduction of nutrients applied across the site will improve the underlying groundwater and assist in achieving **Criteria GW1**.
- **Non-structural measures.** Non-structural measures that may also be implemented to assist with the management of nutrient loads to underlying groundwater may include:
 - Stormwater system maintenance
 - Provision of educational material to residents
 - Street sweeping to reduce particulate and sediment loads

8 Matters to be addressed in LWMS stage

It is anticipated that future LWMS and UWMP documents will provide significantly more detail regarding a number of aspects of water management. These will include (but are not limited to):

- WSUD strategies
- Design and location of stormwater drainage structures
- Modelling of local road drainage network
- Water allocation and supply
- Water conservation strategies
- Non-structural water quality improvement measures
- Monitoring.

8.1 WSUD strategies

WSUD strategies for the site will focus on maintaining the pre-development hydrology for the site, utilising in-lot retention and drainage/infiltration areas (i.e. BRAs and/or subsurface storage, FSAs) where required as outlined in **Section 6**.

Further WSUD measures will be investigated at future planning stages.

8.2 Design and location of drainage structures

This DWMS has proposed nominally located and sized areas for drainage in **Section 6.1.2**. Future LWMS and UWMP documents will provide specific details on location, configuration and required volumes of infiltration/retention structures, ensuring that the stormwater management system can achieve all of the required objectives and integrate into the surrounding environment.

8.3 Modelling of local road drainage

Surface runoff modelling for the local road drainage network will need to be undertaken out for the 20% and 1% AEP rainfall events to demonstrate compliance with the stormwater management criteria, detailed in **Section 4.3**. This should include the latest spatial plan for the site, design intent for the open spaces and drainage infrastructure and should utilise measured infiltration rates at the intended location of the infiltration structures.

8.4 Water allocation and supply

The current landowner holds a licence to take 65,250 kL per annum from the Perth Superficial Aquifer (GWL154876), which is assumed will be available to support construction and irrigation uses. Confirmation of the volumes to be transferred to project uses (construction) and to ToC for future irrigation should be provided at future design stages as the spatial, landscape and engineering designs progress.

8.5 Water conservation strategies

A number of potential measures have been discussed in **Section 5.2** that can assist in reducing total water consumption. It is expected that future LWMS documents will clarify which measures are proposed to be integrated into the future built system.

8.6 Non-structural water quality improvement measures

Guidance for the development and implementation of non-structural water quality improvement measures is provided within the *Stormwater Management Manual for Western Australia* (DoW 2007). Some measures will be more appropriately implemented by the ToC, however many can be implemented relatively easily within the design and maintenance of the development.

It is expected that future LWMS and UWMP documents will provide reference to measures in relation to groundwater quality. It is also expected that future UWMPs will provide detailed management and maintenance plans that will set out maintenance actions (e.g. rubbish removal from drainage basins), timing (when actions are to occur), locations (where actions will occur) and responsibilities (party responsible for implementing the actions).

Approval for the proposed measures will need to be sought from the ToC and DWER. It is therefore anticipated that consultation with these agencies will be undertaken and referral to guiding policies and documents will be made.

8.7 Monitoring

Given the large separation between MGL and natural surface, and the absence of any surface water features within the site, pre-development hydrological monitoring of the site is not warranted.

With regard to post-development monitoring, the change in land use from fertilised turf/playing fields to low-density residential development, it is anticipated that there will be a reduction in nutrients migrating to groundwater beneath the site. Given the significant depth to groundwater and surrounding land uses (residences, golf course) it will be difficult to attribute any pollutants/nutrients detected within groundwater to the management approaches being taken within the site. Post development monitoring is therefore more likely to be focused on the condition and activities undertaken within the site. The requirement for any post-development groundwater monitoring program will be further discussed in future LWMS and UWMP documents.

9 Implementation

This DWMS is a key supportive document for the proposed development. It has been prepared with the intention of providing a structure within which subsequent development can occur consistent with the integrated water cycle management approach, establishing water management approaches that have been based on site-specific investigations, and are consistent with relevant State and ToC policies. It is also intended to guide the development of future LWMS and UWMP documents.

The responsibility for working within the framework established within the DWMS rests with the developers of the land, although it is anticipated that future LWMS and UWMP documents will be developed in consultation with the ToC, DWER and any other relevant authorities (e.g. Water Corporation) and in consideration of other relevant policies and documents.

The future implementation framework, inclusive of management plans for relevant aspects of the site will be guided by the planning scheme provisions and subdivision conditions. The management framework, the issues addressed within these plans and the responsibility for their preparation and implementation is summarised in **Table 3**.

Table 3: Summary of implementation framework

Planning Stage	Supportive technical document	Purpose of technical document	Portion of development to which document applies	Entity responsible for preparation	Approving authority	Entity responsible for implementation
Precinct Structure Plan	LWMS	Refine water management design objectives from DWMS, demonstrate spatial allocation of land to manage water to achieve design objectives.	Precinct Structure Plan area	Proponent and ToC	WAPC on advice from DWER/ToC	Proponent
Subdivision	UWMP	Demonstrate compliance with design objectives, implementation and ongoing management requirements. Identify roles and responsibilities for ongoing management.	Approved subdivision area	Proponent	ToC	Proponent
House construction	Building designs	Demonstrate that detailed designs comply with design criteria in UWMP.	Private lots	Lot owner	ToC	Lot owner

9.1 Funding

The DWMS area comprises a single landholding, and the proposed development will be privately funded by the developer.

Lot 2 McClemens Road, Mount Claremont Scheme Amendment

District Water Management Strategy



9.2 Review

It is not anticipated that this DWMS will be reviewed. The next stage of development will be supported by a Subdivision Guide Plan or Precinct Structure Plan. Where a Subdivision Guide Plan or Precinct Structure Plan is produced this should be supported by a LWMS. The LWMS will largely be an extension of the DWMS as it should provide designs and measures for water management from the options proposed within the DWMS.

The next stage of development following the LWMS is lot planning through subdivision which is to be supported by an UWMP. It is recognised that certain elements (i.e. non-structural controls) of the DWMS and LWMS will not be finalised until this late stage and that there is little or no statutory control that can be applied to ensure the implementation of any remaining measures. While the remaining measures are unlikely to be enforced at this stage, their implementation could be encouraged by the ToC through policy (or modification of these where necessary) or awareness programs.

10 References

10.1 General references

The references listed below have been considered as part of preparing this document.

Australian and New Zealand Governments and Australian state and territory governments (ANZG) 2018, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Canberra ACT.

Department of Water (DoW) 2007, *Stormwater Management Manual for Western Australia*, Department of Water.

Department of Water (DoW) 2013, *Guidelines for District Water Management Strategies*, Perth.

Engineers Australia 2006, *Australian Runoff Quality: A guide to Water Sensitive Urban Design*, National Committee for Water Engineering, Engineers Australia, Canberra.

Environmental Protection Authority (EPA) 2008, *Guidance Statement No. 33: Environmental Guidance for Planning and Development*, Environmental Protection Authority.

Government of WA 2007, *State Water Plan*, Perth.

TABEC 2021, *Engineering servicing letter report*.

Western Australian Planning Commission (WAPC) 2006, *State Planning Policy 2.9: Water Resources*, Gazetted in December 2006. Western Australian Planning Commission.

Western Australian Planning Commission (WAPC) 2007, *Liveable Neighbourhoods (Edition 4)*, Western Australian Planning Commission and Department for Planning and Infrastructure.

Western Australian Planning Commission (WAPC) 2008, *Better Urban Water Management*, Western Australian Planning Commission.

Western Australian Planning Commission (WAPC) 2009, *Planning Bulletin No. 64 Acid Sulfate Soils*, January 2009, Perth.

10.2 Online references

Bureau of Meteorology (BOM) 2021 *Climate Averages*, viewed June 2021, <http://www.bom.gov.au/climate/data/>

Department of Primary Industries and Regional Development (DPRID) 2018, *Soil Landscape Mapping Systems database*, viewed June 2021, <https://catalogue.data.wa.gov.au/dataset/soil-landscape-mapping-systems>

Lot 2 McClemens Road, Mount Claremont Scheme Amendment

District Water Management Strategy



Department of Water and Environmental Regulation (DWER) 2017, *Acid Sulfate Soil – Swan Coastal Plain Database*, viewed June 2021

<<https://catalogue.data.wa.gov.au/dataset/acid-sulphate-soil-risk-map-swan-coastal-plain>>.

Department of Water and Environmental Regulation (DWER) 2001, *Perth Groundwater Map*, viewed June 2021 <<https://maps.water.wa.gov.au/#/webmap/gwm>>.

Department of Water and Environmental Regulation (DWER) 2015, *Perth Public Drinking Water Source Areas*, viewed June 2021,

<<https://maps.water.wa.gov.au/#/webmap/gwm>>.

Lot 2 McClemens Road, Mount Claremont Scheme Amendment
District Water Management Strategy



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Figures



Figure 1: Site Location.

Figure 2: Topography and Maximum Groundwater Levels.

Figure 3: Environmental Geology.

Figure 4: Existing Stormwater Infrastructure.

Figure 5: Bush Forever

Figure 6: Stormwater Management Plan.



Figure 1: Site Location

Project: District Water Management Strategy
 Lot 2 McClemons Road, Mount Claremont Scheme Amendment
Client: Christ Church Grammar School

Plan Number: EP21-045(06)--F05
Drawn: GAR
Date: 06/07/2021
Checked: AII
Approved: DPC
Date: 13/07/2021



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 Scale: 1:3,000@A4
 GDA 1994 MGA Zone 50



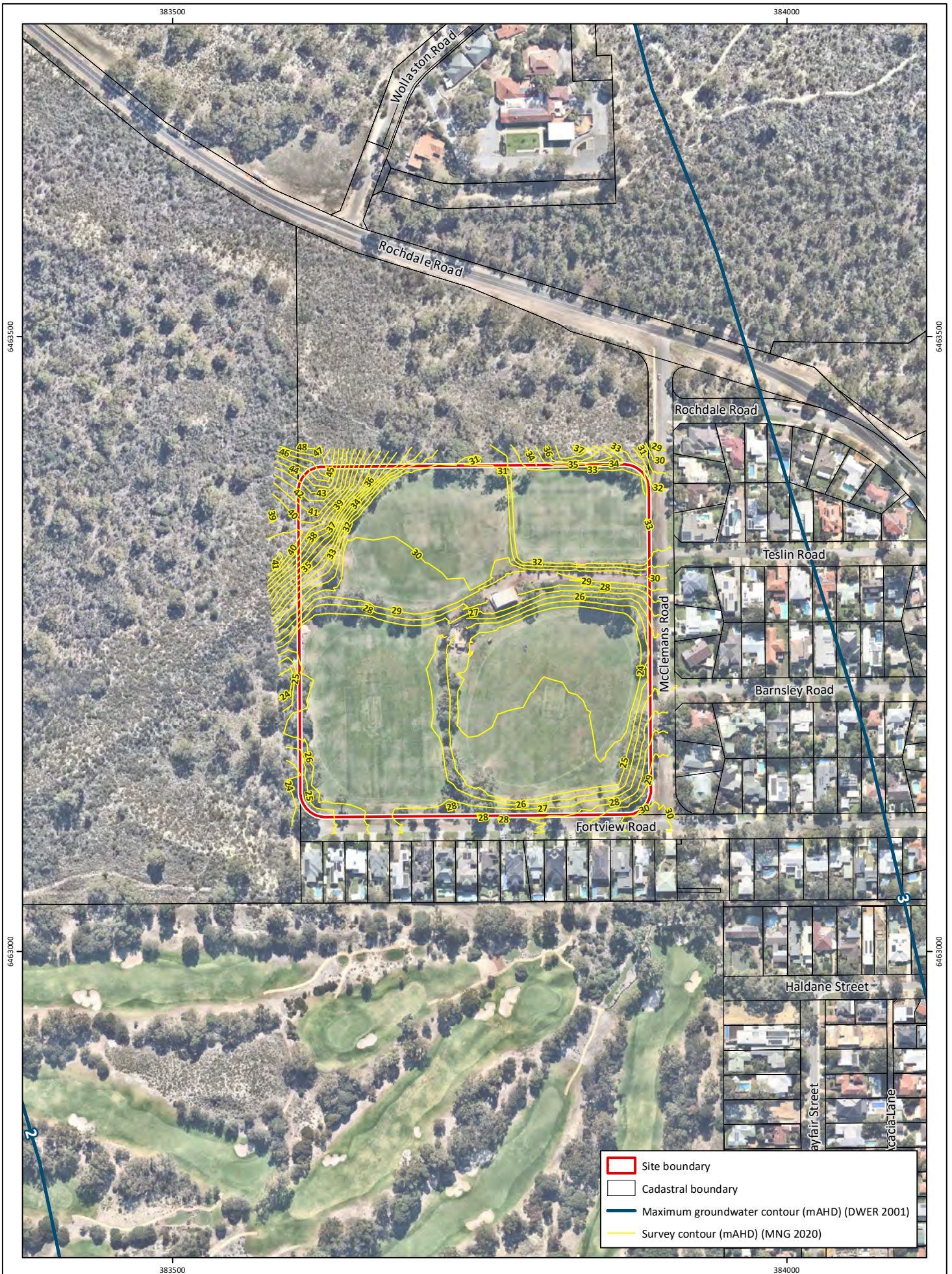


Figure 2: Topography and Maximum Groundwater Level

Project: District Water Management Strategy
 Lot 2 McClemens Road, Mount Claremont Scheme Amendment
Client: Christ Church Grammar School

Plan Number: EP21-045(06)--F06
Drawn: GAR
Date: 06/07/2021
Checked: AJI
Approved: DPC
Date: 13/07/2021



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 Scale: 1:4,000@A4
 GDA 1994 MGA Zone 50





Figure 3: Environmental Geology

Project: District Water Management Strategy
 Lot 2 McClemons Road, Mount Claremont Scheme Amendment
Client: Christ Church Grammar School

Plan Number: EP21-045(06)--F07
Drawn: GAR
Date: 06/07/2021
Checked: AJI
Approved: DPC
Date: 13/07/2021



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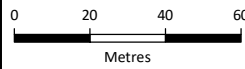




Figure 4: Existing Stormwater Infrastructure

Project: District Water Management Strategy
 Lot 2 McClemons Road, Mount Claremont Scheme Amendment
Client: Christ Church Grammar School

Plan Number: EP21-045(06)--F09
Drawn: GAR
Date: 06/07/2021
Checked: AJI
Approved: DPC
Date: 13/07/2021



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 GDA 1994 MGA Zone 50



While Emerge Associates makes every attempt to ensure the accuracy and completeness of data, Emerge accepts no responsibility for externally sourced data used.
 ©Landgate (2021). Nearmap Imagery date: 25/04/2021



Figure 5: Bush Forever Sites

Project: District Water Management Strategy
 Lot 2 McClemons Road, Mount Claremont Scheme Amendment
Client: Christ Church Grammar School

Plan Number: EP21-045(06)--F08
Drawn: GAR
Date: 06/07/2021
Checked: AJI
Approved: DPC
Date: 13/07/2021



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 GDA 1994 MGA Zone 50



While Emerge Associates makes every attempt to ensure the accuracy and completeness of data, Emerge accepts no responsibility for externally sourced data used.
 ©Landgate (2021). Nearmap Imagery date: 25/04/2021

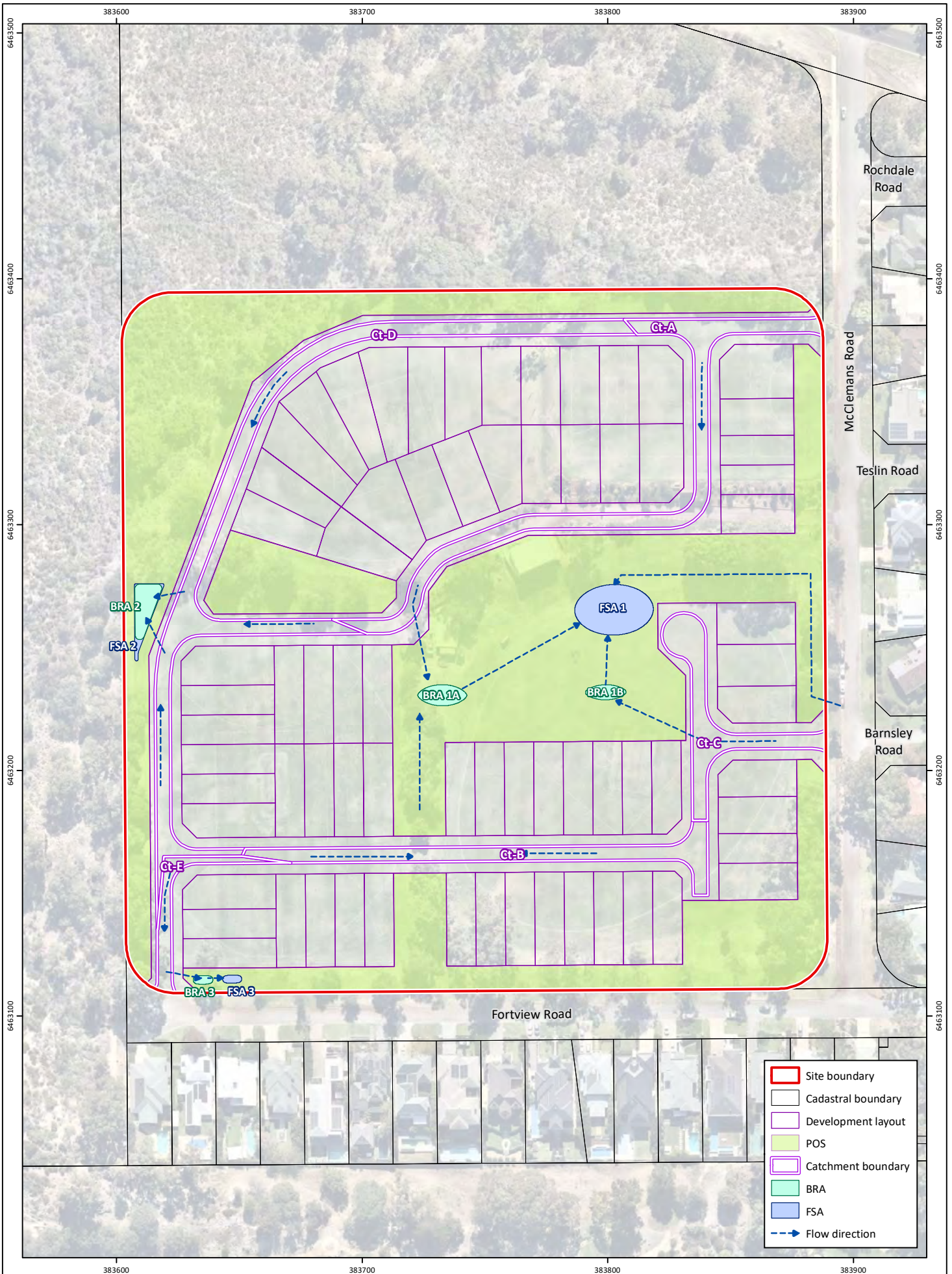


Figure 6: Stormwater Management Plan

Project: District Water Management Strategy
 Lot 2 McClemens Road, Mount Claremont Scheme Amendment
Client: Christ Church Grammar School

Plan Number: EP21-045(06)--F11a
Drawn: GAR
Date: 15/07/2021
Checked: AJI
Approved: DPC
Date: 15/07/2021



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Appendix A

Preliminary Concept Plan – Element

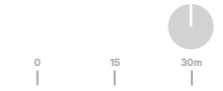




Preliminary Concept Plan

Lot 2 (2) McClemans Road, Mount Claremont

Date: 16 Jul 2021 Scale: 1:1500 @ A3 1:750 @ A1 File: 20-228 CP-1 Staff: AH AL Checked: AL



element.

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Appendix B

Landscape concept – Emerge Associates



1.0 Landscape Concepts

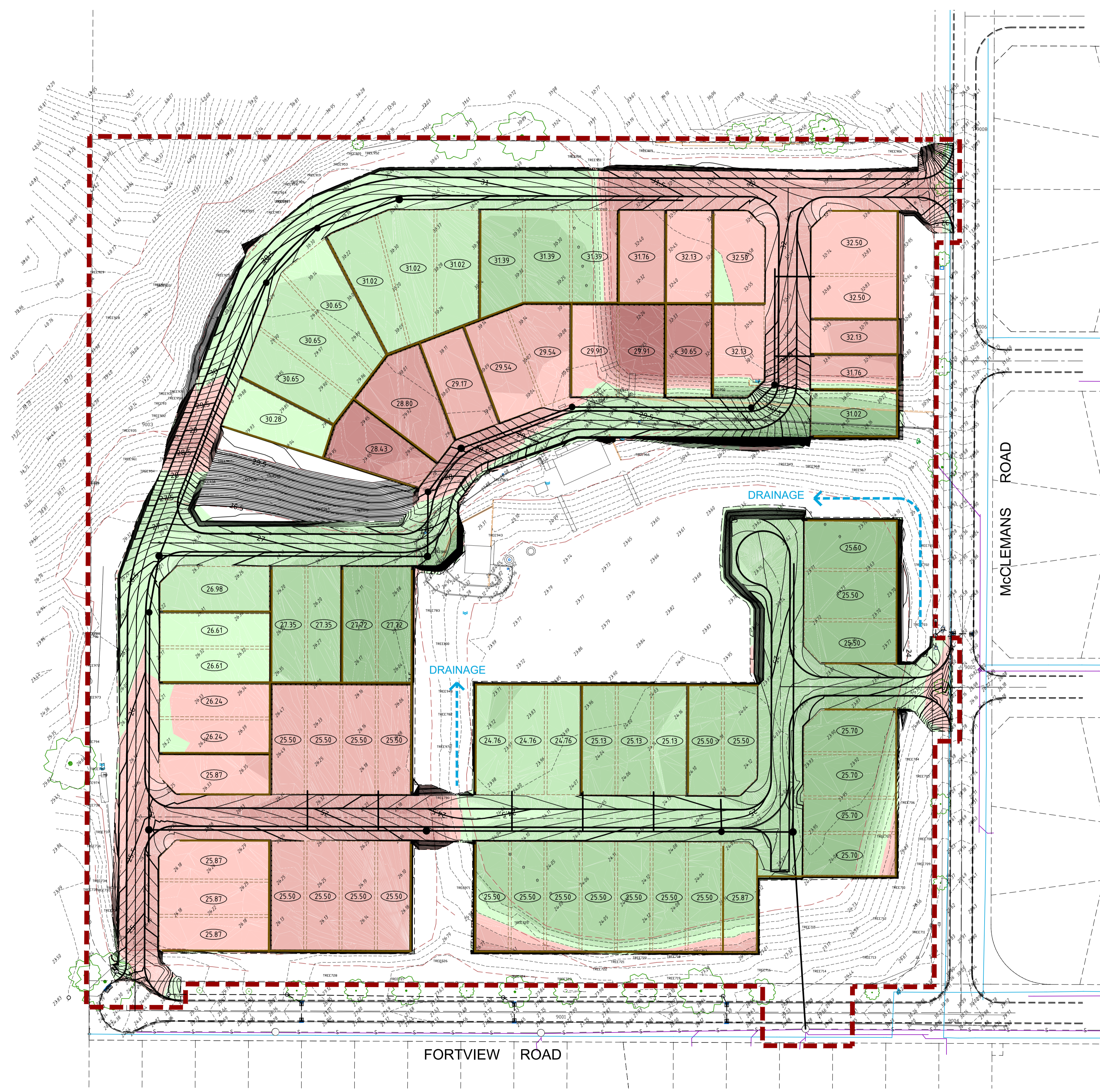
1.1 Overall Masterplan



Appendix D

Cut and fill depths – TABEC 2021



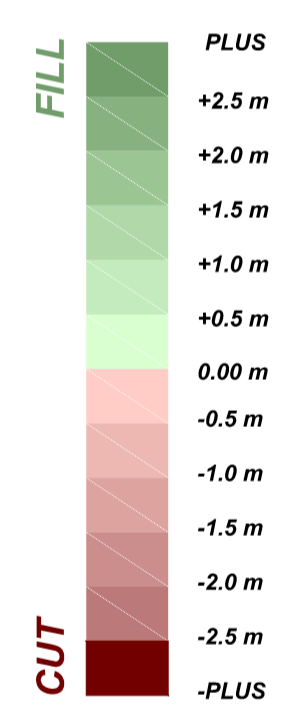


NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE CONTRACT DRAWINGS AND SPECIFICATION.
2. SURVEY CONTOURS PROVIDED BY McMULLEN NOLAN GROUP SURVEYS.
 - 2.1. ALL FINISHED LEVELS ARE IN METRES TO AHD.
 - 2.2. HORIZONTAL DATUM IS PCG-94.
3. PRIOR TO CUTTING OR FILLING, THE SITE AREAS SHALL BE CLEARED.
 - 3.1. EXTENT OF CLEARING TO BE LIMITED TO THE BOUNDARY UNLESS AGREED WITH THE SUPERINTENDENT.
 - 3.2. VEGETATION WHERE NOTED FOR PROTECTION SHALL BE FENCED PRIOR TO CLEARING SURROUNDING AREA. THE CONTRACTOR TO PROTECT THE "VEGETATION PROTECTION AREAS" FROM ANY DAMAGE.
 - 3.3. ALL UNSUITABLE MATERIAL TO BE REMOVED BY THE CONTRACTOR TO APPROVED TIPPING SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION. ALL FEES TO BE PAID BY THE CONTRACTOR.
 - 3.4. ALL CLEARED MATERIAL TO BE MULCHED AND STOCKPILED ON SITE AS DIRECTED BY THE SUPERINTENDENT.
4. ALL LEVELS SHOWN ARE FINISHED LEVELS AFTER FINAL WORKS. ALL ROADS SHALL BE BOXED AS SHOWN ON THE TYPICAL BOXOUT SECTION.
5. CONTRACTOR TO LOCATE ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORKS ON SITE

LEGEND

- EXTENT OF WORKS
- EXISTING SURFACE CONTOUR (0.5m INTERVAL)
- EXISTING SURFACE LEVEL
- PROPOSED SURFACE CONTOUR (0.5m INTERVAL)
- PROPOSED SURFACE CONTOUR (0.1m INTERVAL)
- PROPOSED PAD LEVEL
- PROPOSED LIMESTONE RETAINING WALLS



DEPTH CUT/FILL LEGEND

SCALE 1:750 0 15 30 45 1:1500 @ A3

				This plan shall not to be used for construction unless issued as rev 0 and signed as approved.				CLIENT CHRIST CHURCH GRAMMAR SCHOOL			TABEC Civil Engineering Consultants		PROJECT LOT 2 - McCLEMONS ROAD, MT CLAREMONT	
				COPYRIGHT The concepts and information contained in this document are the Copyright of TABEC Pty. Ltd. Use or copying of the document in whole or part without the written permission of TABEC Pty. Ltd. constitutes an infringement of copyright.				DESIGNED PK			CHECKED BMS		APPROVED	
								DRAWN PK			CHECKED BMS		DATE	
											TABEC PTY LTD ACN 090 796 204		14 Wickham Street, East Perth WA 6004 1 08 9425 5900 info@tabec.com.au www.tabec.com.au	
											TITLE FINISHED SURFACE CONTOUR PLAN & CUT AND FILL DEPTH DIAGRAM		DRAWING NUMBER 2462-00-100	
											ISSUE B			

No.	DATE	DRAWN	APPROVED	AMENDMENT
B	24.06.21	PK	BMS	ISSUED FOR REVIEW WITH COMMENTS ADDRESSED
A	15.06.21	PK	BMS	ISSUED FOR REVIEW

