

ECU Job 27 Engineering Annexe Stage 2: 16-163/130

EPBC Act Referral Supporting Document

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1 Introduction

1.1 Background and Project Overview

Edith Cowan University (ECU) are proposing to develop an Environmental Engineering Teaching Laboratory at it's Joondalup campus, over Lot 504 and Lot 14593 Joondalup Drive. The Site is a small portion (0.05 ha) of land within the campus and located approximately 24 km north of Perth's Central Business District (CBD) (Figure 1). The Project will involve clearing of vegetation and the construction of a building.

The development is part of a larger project involving the development of Engineering facilities within this area. A Maritime Engineering Teaching Lab and Petroleum Engineering Research Facility will also be constructed to the south of the Site. These additional developments will occur on land already cleared and are not included in this referral.

1.2 Document Purpose and Scope

This document's purpose is to provide supporting information of the Engineering Annexe Development (the proposal) referral under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This document will address the Matters of National Environmental Significance (MNES) as listed under the EPBC Act, and whether the proposal is likely to impact upon them, or have a significant impact on the environment using significant impact criteria as outlined in the Significant Impact Guidelines 1.1 (DotEE 2013). If there is potential for significant impact, the relevant MNES will be addressed in an EPBC referral.



2 MNES Assessment

The following section addresses the MNES as protected under the EPBC Act and their significance, or lack thereof to the proposal.

2.1 World Heritage Properties

There are no World Heritage Properties within the vicinity of the proposal.

2.2 National Heritage Places

No National Heritage Places are listed as occurring within the proposal area.

2.3 Wetlands of International Importance (Ramsar)

The proposal area does not intersect with any Wetlands of International Importance.

2.4 Nationally Threatened Species and Ecological Communities

No Threatened Ecological Communities occur within the Site. The proposal is likely to impact on listed Threatened species', the Black Cockatoo, potential breeding habitat. However, this impact is not considered to be significant.

2.5 Migratory Species

A total of 15 migratory species listed under the EPBC Act were identified in the PMST report as potentially occurring in proximity to proposal site (Appendix A). The proposal is considered not likely to impact on these species.

2.6 Commonwealth Marine Area

There are no Commonwealth Marine areas surrounding the Site.

2.7 The Great Barrier Reef Marine Park

The proposal does not intersect with the Great Barrier Reef Marine Park.

2.8 Nuclear Actions

The proposal does not involve any nuclear actions.



2.9 A water resource, in relation to coal seam gas development and large coal mining development.

This proposal does not involve any coal seam gas development or coal mining development.

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Likelihood of Impacts to Matters of National Environmental Significance

3.1 Threatened Ecological Communities

Desktop searches of the Protected Matters Search Tool (PMST) and the (then) Department of Parks and Wildlife's (DPaW) Threatened and Priority Ecological Communities (TEC and PEC) data identified no TECs listed under the EPBC Act as occurring within the Site (DotEE 2017a; DPaW 2017a).

The 'Banksia Woodlands of the Swan Coastal Plain' ecological community is listed (as at 16 September 2016) as an Endangered community under the EPBC Act. The PMST report identified that this TEC is likely to occur within the area. However, a search of DPaW's TEC and PEC database has identified that no TECs or PECs and their associated buffers exist across the Site (DPaW 2017a).

The survey did not identify the Site as containing the Banksia Woodlands TEC.

3.2 Threatened Species

The Significant Impact Guidelines provides a significant impact criteria to evaluate whether an action is likely to have a significant impact on Critically Endangered and Endangered species (DotEE 2013). These include:

- Lead to a long-term decrease in the size of a population;
- Reduce the area of occupancy of the species;
- Fragment an existing population into two or more populations;
- Adversely affect habitat critical to the survival of a species;
- Disrupt the breeding cycle of a population;
- Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;
- Result in invasive species that are harmful to a Critically Endangered or Endangered species becoming established in the Endangered or Critically Endangered species habitat;
- Introduce disease that may cause the species to decline; and
- Interfere with the recovery of the species.

Preliminary evaluation of the proposed action against these criteria indicates that the action is unlikely to cause a significant impact to Critically Endangered or Endangered species.



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3.2.1 Flora and Vegetation

Desktop searches of the PMST (DotEE 2017a), (then) DPaW's NatureMap (DPaW 2017b) and DPaW's Threatened and Priority Flora databases (DPaW 2017c) identified that 25 conservation significant flora species may occur within a 5 km radius of the Site.

A likelihood assessment was undertaken to determine the species that are 'Likely', 'Possible' and 'Unlikely' to occur within the Site. The assessment was carried out through analysis of regional soil characteristics and the nearest record of the species from the Site (Table 1).

The Likelihood assessment was carried out with the following criteria:

- Recorded: Recorded during the assessment;
- Likely: Suitable habitat present and records less than 5 km from the Site;
- Possible: Suitable habitat present and records between 5 km and 10 km from the Site; and
- Unlikely: No suitable habitat present and/or records greater than 10 km from the Site.

Table 1: Likelihood Assessment of Conservation Significant Flora Occurring within the Site (DotEE 2017a) (DPaW 2017b,c)

Таха	STATE STATUS	EPBC STATUS	NEAREST RECORD (KM)	Likelihood
Slender Andersonia (Andersonia gracilis)	Vulnerable	Endangered	34.62	Unlikely
Dwarf Kangaroo Paw (Anigozanthos viridis subsp. terraspectans)	Vulnerable	Vulnerable	64.13	Unlikely
King Spider Orchid (Caladenia huegelii)	Critically Endangered	Endangered	10.18	Possible
Dwarf Bee-Orchid (Diuris micrantha)	Vulnerable	Vulnerable	49.89	Unlikely
Purdie's Donkey Orchid (Diuris purdiei)	Endangered	Endangered	32.88	Unlikely
Glossy-leafed Hammer Orchid (<i>Drakaea elastica</i>)	Critically Endangered	Endangered	40.82	Unlikely
Dwarf Hammer Orchid (Drakaea micrantha)	Endangered	Vulnerable	39.39	Unlikely
Keighery's Eleocharis (Eleocharis keigheryi)	Vulnerable	Vulnerable	23.08	Unlikely
Yanchep Mallee (Eucalyptus argutifolia)	Vulnerable	Vulnerable	6.59	Possible
Beaked Lepidosperma (Lepidosperma rostratum)	Endangered	Endangered	35.29	Unlikely



Таха	STATE STATUS	EPBC STATUS	NEAREST RECORD (KM)	Likelihood
Acacia benthamii	Priority 2	-	2.58	Likely
Austrostipa mundula	Priority 3	-	0.31	Likely
Baeckea sp. Limestone	Priority 1	-	0.92	Likely
Conostylis bracteata	Priority 3	-	1.04	Likely
Fabronia hampeana	Priority 2	-	4.63	Likely
Grevillea sp. Ocean Reef	Priority 1	-	3.99	Likely
Jacksonia sericea	Priority 4	-	0.71	Likely
Leucopogon maritimus	Priority 1	-	4.98	Likely
Marianthus paralius	Vulnerable	-	0.71	Likely
Pimelea calcicola	Priority 3	-	2.58	Likely
Sarcozona bicarinata	Priority 3	-	4.37	Likely
Stylidium paludicola	Priority 3	-	0.71	Likely
Styphelia filifolia	Priority 3	-	3.39	Likely
Tetraria sp. Chandala	Priority 2	-	2.61	Likely
Thelymitra variegata	Priority 2	-	2.58	Likely

The likelihood assessment identified there are 15 conservation significant flora species considered 'Likely', two species considered 'Possible' and eight species considered 'Unlikely' to occur on the Site.

Although 15 of the 25 are considered 'Likely' to occur within the area, the Black Cockatoo habitat assessment did not identify any flora species of conservation significance during the survey (360 Environmental, 2017).

3.2.2 Fauna

Desktop searches of the PMST, NatureMap and DPaW's Threatened and Priority Fauna databases identified conservation significant fauna species potentially occurring within a 5 km radius of the Site.



The search returned a number of marine birds and waders, as well as the Water Rat, that require specific habitats including wetlands, oceans, shorelines and waterways. These listings may be associated with the coastline and nearby Lake Joondalup. As the Site does not contain these suitable habitats, these species have been omitted from the Likelihood assessment (DotEE 2017a; DPaW 2017a,d).

In addition, a number of species returned in the databases were historical records of extinct species (ie. Malleefowl) and these have been omitted from further discussion.

A likelihood assessment was undertaken to determine the likelihood of these species occurring on Site based on suitable habitat and the species known distribution (Table 3).

The likelihood of each species is based on the following criteria:

- Likely: Suitable habitat is present in the Site and the Site is within the species' known distribution;
- Possible: Limited or no suitable habitat is present in the Site, but is nearby. The species has good dispersal abilities, but is known from the general area; and
- Unlikely: No suitable habitat present in Site, but is nearby. Species has poor dispersal abilities, but is known from the general areal or suitable habitat present; however the Site is outside of the species' known distribution.

Table 2. Likelihood Assessment of Conservation Significant Fauna Occurring within the Site (DotEE 2017a) (DPaW 2017b,d)

Таха	STATE STATUS	EPBC STATUS	LIKELIHOOD
Forest Red-tailed Black Cockatoo (Calyptorhynchus banksii naso)	Vulnerable	Vunerable	Likely
Baudin's Cockatoo (Calyptorhynchus baudinii)	Endangered	Vulnerable	Likely
Carnaby's Cockatoo (Calyptorhynchus latirostris)	Endangered	Endangered	Likely
Australian Painted Snipe (Rostratula australis)	Endangered	Endangered	Unlikely
Chuditch (Dasyurus geoffroii)	Vulnerable	Vulnerable	Unlikely
Cattle Egret (Ardea ibis)	International Agreement	Marine	Unlikely
Eastern Great Egret <i>(Ardea modesta)</i>	International Agreement	Marine	Unlikely
Great Sand Plover (Charadrius Ieschenaultia)	International Agreement	-	Unlikely
Southern Brown Bandicoot (Isoodon obesulus)	Priority 4	-	Unlikely
Quenda (Isoodon obesulus fusciventer)	Priority 4	_	Unlikely



Таха	STATE STATUS	EPBC STATUS	Likelihood
Australian Little Bittern (Ixobrychus dubius)	Priority 4	-	Unlikely
Australian Black Bittern (Ixobrychus flavicollis australis)	Priority 1	-	Unlikely
Rainbow Bee-eater (Merops ornatus)	International Agreement	Marine	Possible
Black-striped Snake (Neelaps calonotos)	Priority 3	-	Possible
Glossy Ibis (Plegadis falcinellus)	International Agreement	Marine	Unlikely
Graceful Sun Moth (Synemon gratiosa)	Priority 4	-	Possible
Common Greenshank (Tringa nebularia)	International Agreement	Marine/Migratory	Unlikely

The likelihood assessment identified 17 conservation significant fauna species that are potentially occurring on the Site. A total of three species were considered 'Likely' to occur, three were considered 'Possible' occurring and 11 species considered 'Unlikely' to occur within the Site.

The three species considered 'Likely' to occur include; Carnaby's Cockatoo, Forest Redtailed Black Cockatoo and Baudin's Cockatoo. However, the Black Cockatoo Habitat Assessment did not identify any Black Cockatoo species utilising the Site (360 Environmental, 2017).

3.2.2.1 Black Cockatoos

A Black Cockatoo Habitat Assessment was undertaken on 26 May 2017 to determine the extent and type of habitat suitable for Black Cockatoos within the survey area. No Black Cockatoos were observed flying or heard within the survey area (360 Environmental 2017).

The survey considered Carnaby's Cockatoo (Calyptorhynchus latirostris), Forest Redtailed Black Cockatoo (Calyptorhynchus banksii naso) and Baudin's Black Cockatoo (Calyptorhynchus baudinii) listed under the EPBC Act.

The field survey did not identify any Threatened species listed under the EPBC Act or the *Wildlife Conservation Act 1950* (WC Act). All three Black Cockatoo species that occur within the south west of Australia are listed under the EPBC Act: Carnaby's Cockatoo is listed as Endangered and Baudin's Cockatoo and the Forest Red-tailed Black Cockatoo are listed as Vulnerable. The Site is outside but adjacent to the modelled Breeding Habitat for Carnaby's Cockatoo, nevertheless all three species of Black Cockatoo have been included for consideration in this document, particularly given that



they are all highly mobile and the DotEE distribution maps are indicative only (360 Environmental, 2017).

Under the DotEE's *Referral Guidelines for Three Threatened Black Cockatoo Species* (DSEWPaC 2012), it is recommended a proposal be referred to the DotEE for assessment whereby the clearing of more than 1 ha of quality foraging habitat or the clearing or degradation of a breeding habitat is proposed.

Foraging Habitat

The survey area contains two Black Cockatoo foraging species; approximately 20 Marri trees with a DBH of < 500 mm, two Marri trees with a DBH of >500 mm and *Xanthorrhoea preissii*. However, this area contains approximately 0.05 ha of Black Cockatoo foraging habitat which is less than the threshold of '1 ha of quality foraging habitat' as under the Referral guidelines for the Black Cockatoo (DSEWPaC 2012). As the area is below the threshold, it is not included in this referral.

Breeding Habitat

Black Cockatoos breed in large hollow-bearing trees, generally within woodlands or forests (Johnstone et al. 2013). The size of the tree can be a useful indication of the hollow bearing potential of the tree. Trees of suitable DBH are potentially important for maintaining breeding in the long-term, through mainitaining the integrity of the habitat and allowing trees to provide suitable nest hollows is particularly important in woodland stands that are known to support Black Cockatoo breeding (DSEWPaC 2012).

The Black Cockatoo habitat assessment identified two Marri trees considered to be potential breeding habitats for Black Cockatoos under the EPBC Act Black Cockatoo referral guidelines (Figure 2). These trees had a DBH of > 500 mm and one of these trees contained one hollow with an entrance diameter of > 100 mm at a height of 5 m, however, this hollow is considered to be too low to be utilised by Black Cockatoos (360 Environmental 2017).

Significant Impact Criteria Evaluation

Preliminary evaluation of the proposed action against these criteria indicates that the presence of Black Cockatoo breeding habitat does not trigger any of the significant impact criteria for the species.

The Site contains two potential breeding trees with a DBH > 500 mm and contains less than 0.05 ha of foraging habitat for Black Cockatoos where a small quanity of old foraging evidence was observed. This foraging evidence was in the form of one chewed pine cone that was considered likely to have been dropped from outside the Site. The Site also contains less than 0.05 ha of Black Cockatoo foraging habitat consisting of two species, Marri and *Xanthorrhoea preissii*. In addition to the two potential breeding trees, the Site contained approximately 20 Marri trees with a DBH of less than 500 mm was recorded in the Site considered to be foraging habitat. The foraging habitat of the area is



less than 0.05 ha, it is considerably smaller than '1 ha of good quality foraging habitat' as under the *EPBC Act Referral guidelines for three threatened black cockatoo species* (2012). One of the two potential breeding trees contains one observable hollow located at a height of 5 m with an entrance diameter of > 100 mm. This hollow is considered too low to be utilised by the Black Cockatoos for breeding (360 Environmental, 2017).

The proposed development will result in the clearing of two potential breeding trees and 0.05 ha of foraging habitat. No Black Cockatoos were heard or sighted during the survey. Mapping shows that there are six Bush Forever Sites and Regional Reserves within a 4 km radius of the Site to have surveyed or inferred floristic community types that are the same or similar to the breeding and foraging habitat for the Black Cockatoo (DPaW 2014a,b; Government of Western Australia, 2000). These Bush Forever sites range between 10 ha and 380 ha in size and they are in mostly Excellent to Good condition, this suggests that these conservation areas may provide more suitable Black Cockatoo habitat than the subject Site (Government of Western Australia, 2000). A number of the Bush Forever sites are vested as reserves with the Department of Biodiversity, Conservation and Attractions (DBCA) or Local Government to ensure the long term protection and conservation of bushland (DPaW 2014a,b). It is possible that these surrounding Bush Forever sites and Reserves would provide a larger area of occupancy of the Black Cockatoos. In addition, these areas are managed in conservation programs to ensure the long term protection of the area's environmental values.

The proposal to clear two potential Black Cockatoo breeding trees will not result in significant population impacts to the Black Cockatoo. This is mainly due to the lack of sighted or heard Black Cockatoos during the survey and the unsuitability of the one observable hollow that is considered too low to be utilised by the species for breeding (360 Environmental, 2017). In addition, breeding of Carnaby's Cockatoo is generally restricted to Eucalypt woodlands in the Wheatbelt (DSEWPaC 2012). This suggests the habitat may not be the primary use for breeding and may be utilised occasionally by the Black Cockatoo for foraging.

The Site also contains foraging habitat of approximately 20 Marri trees with a DBH of less than 500 mm, 2 Marri trees with a DBH of more than 500 mm and *Xanthorrhoea preissi*, however, this is not considered to be significant as it considerably less than 1 ha of good quality foraging habitat as under the EPBC Act referral guidelines (360 Environmental, 2017; DSEWPaC 2012).

The proposed clearing within the project area will not result in the fragmentation of an existing population into two or more populations. This is due to the Site and surrounding landscape as heavily urbanised and containing little remnant native vegetation.

The extent of clearing is not considered to be significant to the maintainence of Black Cockatoo species. The EPBC Act Referral guidelines for the black cockatoos state that creating a gap of greater than 4 km between patches of Black Cockatoo habitat is at a high risk of causing significant impact (DSEWPaC 2012). Clearing of the Site will not



create a gap of more than 4 km between patches of Black Cockatoo Habitat as there are numerous areas of native vegetation within a 4 km radius of the Site.

The seasonal movements of Black Cockatoos mean they require large areas of habitat for breeding, roosting and foraging, as well as connectivity between habitats to assist their movement through the landscape (DSEWPaC 2012). Based on the EPBC Act Referral Guidelines for three threatened Black Cockatoo species, critical habitat for the Black Cockatoos is defined as providing breeding, roosting and foraging habitat which also provides connectivity between the habitats. Habitat that accommodates all three Black Cockatoo species would be defined as most critical (DSEWPaC 2012). Its is not considered that the proposed clearing will adversely affect the habitat critical to the survival of Black Cockatoos as only two potential breeding trees are present within the Site, and one containing a hollow considered unsuitable for breeding by the Black Cockatoo.

The proposed action alone is unlikely to introduce or spread invasive species that are harmful to Black Cockatoos. The Site is already in a heavily urbanised landscape and as such, clearing of the entire Site is unlikely to introduce or spread invasive species. The clearing of the Site may ameliorate any weed species.

The proposed action to clear and develop an Engineering Building is unlikely to introduce disease that may cause the Black Cockatoo to decline. The Site is a stand alone area within a highly urbanised landscape, it is unlikely that the proposed action will introduce disease that may cause the Black Cockatoo to decline. The only possible disease and parasite vector associated with the Site would be the attraction of cats and foxes which are known to favour 'edge' effects created from fragmented habitats (DSEWPaC 2012). The proposed development is unlikely to be an ideal habitat for foxes or cats due to the presence of humans and traffic within the Site and surrounding urban areas. Clearing of the land and construction can result in the spread of dieback, however, there is minimal native vegetation remaining within the vicinity of the Site. Therefore, the proposed clearing of the Site is unlikely to introduce disease that may cause the ecological community to decline.

It is unlikely that the proposed action will interfere with the recovery of the Black Cockatoo species. Although one of the two potential breeding trees contain a hollow, it is considered to be at a height too low for use by the Black Cockatoo species (360 Environmental, 2017). In addition, the lack of recent evidence of the species using the Site and no Black Cockatoos were heard or observed flying overhead during the survey, suggests that the Site is not a primary habitat. The two potential breeding trees are not considered to be significant in the recovery of the species.

In summary, the proposal to clear 0.05 ha of Black Cockatoo habitat is not considered to represent a significant impact to the Black Cockatoos.



3.2.3 Introduced Species

A desktop search of the EPBC PMST indicated that a total of 15 weed species as potentially occurring within a 2 km radius of the Site (Table 2) (DotEE 2017a).

Of the 15 weed species potentially occurring on the Site, seven species are Declared under the *Biosecurity and Agriculture Management Act 2007* (BAM Act) and 11 are listed under the Commonwealth's Weeds of National Significance (WONS).

Table 3: Weed species potentially occurring within 2 km of the Site (DotEE 2017a).				
Таха	COMMON NAME	WONS	DECLARED UNDER THE BAM ACT	
*Asparagus aethiopicus	Asparagus Fern	Yes	-	
*Asparagus asparagoides	Bridal Creeper	Yes	s22(2) C3	
*Brachiaria mutica	Para Grass	-	-	
*Cenchrus ciliaris	Buffel-Grass	-	s11	
*Chrysanthemoides monilifera	Bitou Bush	Yes	s12 C1	
*Chrysanthemoides monilifera subsp. monilifera	Boneseed	Yes	s12 C2	
*Genista sp. X Genista monspessulana	Broom	Yes	-	
*Lantana camara	Wild Sage	Yes	s22(2) C3	
*Lycium ferocissimum	African Boxthorn	Yes	s11	
*Olea europaea	Olive	-	s11	
*Pinus radiata	Radiata Pine	-	s11	
*Rubus fruticosus aggregate	Blackberry	Yes	-	
*Salix sp except S.babylonica, S. x calodendron & S. x reichardtii	Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow	Yes	s12 C1	
*Salvinia molesta	Giant Salvinia	Yes	s12 C2	
*Tamarix aphylla	Athel Pine	Yes	s22(2) C3	

Table 3: Weed species potentially occurring within 2 km of the Site (DotEE 2017a).

*The (then) DAFWA maintains a list of Declared Plants for Western Australia under the *Biosecurity and Agriculture Management Act 2007* (BAM Act). If a plant is declared for the whole of the State or for particular Local Government Areas, all landholders are obliged to comply with the relevant species-specific control measures.



*The (then) DAFWA maintains a list of Declared Plants for Western Australia under the BAM Act. If a plant is declared for the whole of the State or for particular Local Government Areas, all landholders are obliged to comply with the relevant species-specific control measures.

¹Declared Pest - s22(2), Declared Pest Prohibited – s12, Permitted – s11.

Declared pests must satisfy any applicable import requirements when imported, and may be subject to an import permit if they are potential carriers of high-risk organisms. They may also be subject to control and keeping requirements once within Western Australia.

Under the BAM Act, all declared pests are placed in one of three categories, namely C1 (exclusion), C2 (eradication) or C3 (management) (DAFWA 2017).

Preliminary evaluation of the following significant impact critiera identified that the proposed action is not likely to have a significant impact on the environment (DotEE 2013):

Result in invasive species that are harmful to a Critically Endangered or Endangered species becoming established in the Endangered or Critically Endangered species habitat.

It is not likely that the weeds listed in Table 2 will occur within the Site and the proposed action is unlikely to introduce or spread invasive sprecies. The Site is already within a heavily urbanised landscape and as such, clearing and development of the entire isolated Site is unlikely to introduce or spread invasive sprecies. In addition, the clearing and subsequent urbanisation of the Site may ameliorate any weed species.

3.3 Migratory Species

A search of the EPBC PMST identified 15 Migratory species as potentially occurring within a 5 km radius of the Site as summarised in Table 4.

Table 4: Migratory Species potentially occurring within a 5 km radius of the Site (DotEE	
2017a)	

ΤΑΧΑ	CONSERVATION STATUS AS LISTED UNDER THE EPBC ACT
Common Noddy (Anous stolidus)	Marine/Migratory
Fork-Tailed Swift (Apus pacificus)	Marine/Migratory
Flesh-footed Shearwater (Ardenna carneipes)	Marine/Migratory
Amsterdam Albatross (Diomedea amsterdamensis)	Endangered
Southern Royal Albatross (Diomedea epomophora)	Vulnerable
Wandering Albatross (Diomedea exulans)	Vulnerable
Caspian Tern (Hydroprogne caspia)	Marine/Migratory



ΤΑΧΑ	CONSERVATION STATUS AS LISTED UNDER THE EPBC ACT
Southern Giant Petrel (Macronectes giganteus)	Endangered
Northern Giant Petrel (Macronectes halli)	Vulnerable
Bridled Tern (Onychoprion anaethetus)	Marine/Migratory
Sooty Albatross (Phoebetria fusca)	Vulnerable
Roseate Tern (<i>Sterna dougallii</i>)	Marine/Migratory
Tasmanian Shy Albatross (<i>Thalassarche cauta</i>)	Vulnerable
Black Browed Albatross (Thalassarche melanophris)	Vulnerable
Grey Wagtail (Motacilla cinerea)	Migratory

The significant impact criteria to evaluate whether an action is likely to have a significant impact on a migratory species include (DotEE 2013):

- Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for migratory species;
- Result in an invasive species that is harmful to migratory species becoming established in an area of important habitat for the migratory species; or
- Seriously disrupt the lifecycle (breeding, feeding, migration or resting behavious) of an ecologically significant proportion of the poplation of a migratory species.

A preliminary evaluation of the proposed action against these criteria indicate that the action is unliklely to trigger any of the significant impact criteria for migratory species.

14 out of the 15 Listed Migratory species identified in Table 4 are associated with coastal, wetland or creekline environments (DotEE 2017b). The Site does not contain any wetland habitat or surface water features and is located in excess of 4.3 km from the coast and 900 m from the nearest wetland (Lake Joondalup). The Proposed Development Area does not contain any vegetation or habitat suitable for most of the species listed in Table 4.

Birds are also unlikely to be impacted by the development of the small Site due to their high mobility and extensive home range, in addition to the already fragmented surrounding urban environment (DotEE 2017b). The proposed action is unlikely to be a significant impact upon migratory species.



4 Conclusion

It is concluded that the risk of significant impacts to the majority of the MNES species potentially occurring at the Site is not significant, given the small scale Site with limited native vegetation. However, the presence of Black Cockatoo breeding habitat within the Site triggers that the proposal is likely to have an impact on the MNES, however, it is considered that this impact is not significant. This is further addressed in the referral under the EPBC Act.



5 Limitations

This report is produced strictly in accordance with the scope of services set out in the contract or otherwise agreed in accordance with the contract. 360 Environmental makes no representations or warranties in relation to the nature and quality of soil and water other than the visual observation and analytical data in this report.

In the preparation of this report, 360 Environmental has relied upon documents, information, data and analyses ("client's information") provided by the client and other individuals and entities. In most cases where client's information has been relied upon, such reliance has been indicated in this report. Unless expressly set out in this report, 360 Environmental has not verified that the client's information is accurate, exhaustive or current and the validity and accuracy of any aspect of the report including, or based upon, any part of the client's information is contingent upon the accuracy, exhaustiveness and currency of the client's information. 360 Environmental shall not be liable to the client or any other person in connection with any invalid or inaccurate aspect of this report where that invalidity or inaccuracy arose because the client's information was not accurate, exhaustive and current or arose because of any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available to 360 Environmental.

Aspects of this report, including the opinions, conclusions and recommendations it contains, are based on the results of the investigation, sampling and testing set out in the contract and otherwise in accordance with normal practices and standards. The investigation, sampling and testing are designed to produce results that represent a reasonable interpretation of the general conditions of the site that is the subject of this report. However, due to the characteristics of the site, including natural variations in site conditions, the results of the investigation, sampling and testing may not accurately represent the actual state of the whole site at all points.

It is important to recognise that site conditions, including the extent and concentration of contaminants, can change with time. This is particularly relevant if this report, including the data, opinions, conclusions and recommendations it contains, are to be used a considerable time after it was prepared. In these circumstances, further investigation of the site may be necessary.

Subject to the terms of the contract between the Client and 360 Environmental Pty Ltd, copying, reproducing, disclosing or disseminating parts of this report is prohibited (except to the extent required by law) unless the report is produced in its entirety including this page, without the prior written consent of 360 Environmental Pty Ltd.



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FIGURES







APPENDIX A

Protected Matters Search Tool Report

360 Environmental Pty Ltd

Australian Government



Department of the Environment and Energy

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 <u>Environment Assessments</u> and the EPBC Act including significance guidelines, forms and application process details.

Report created: 19/06/17 17:38:58

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 2010

Coordinates Buffer: 5.0Km



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 <u>Administrative Guidelines on Significance</u>.

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:	1
Listed Threatened Species:	45
Listed Migratory Species:	40

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 <u>permit</u> 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:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	70
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	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:	5
Regional Forest Agreements:	None
Invasive Species:	41
Nationally Important Wetlands:	1
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
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
Calidris canutus		
Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calyptorhynchus banksii naso		
Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat likely to occur within area
Calyptorhynchus latirostris		
Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Species or species habitat 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	Forgaina feeding or related

Diomedea epomophora		
Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<u>Diomedea exulans</u>		
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
Leipoa ocellata		
Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica baueri		
Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within

Name	Status	Type of Presence
		area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may 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 may occur within area
Pachyptila turtur subantarctica		
Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Phoebetria fusca		
Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Rostratula australis		
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Sternula nereis nereis		
Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour known to occur
Thalassarche cauta cauta		within area
Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta steadi		
White-capped Albatross [82344]	Vulnerable	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

Mammals		
<u>Balaenoptera musculus</u> Blue Whale [36]	Endangered	Species or species habitat
Dasyurus geoffroii		likely to occur within area
Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat likely to 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]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Plants		
Andersonia gracilis		
Slender Andersonia [14470]	Endangered	Species or species habitat may occur within

Name	Status	Type of Presence
		area
Anigozanthos viridis subsp. terraspectans Dwarf Green Kangaroo Paw [3435]	Vulnerable	Species or species habitat may occur within area
<u>Caladenia huegelii</u> King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	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-leafed 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 may occur within area
<u>Eleocharis keigheryi</u> Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat may occur within area
Eucalyptus argutifolia Yanchep Mallee, Wabling Hill Mallee [24263]	Vulnerable	Species or species habitat likely to occur within area
Lepidosperma rostratum Beaked Lepidosperma [14152]	Endangered	Species or species habitat likely to occur within area
Reptiles		
<u>Caretta caretta</u> Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
<u>Chelonia mydas</u> Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat 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 * Species is listed under a different scientific name on	the FPRC Act - Threatened	[<u>Resource Information</u>]
Name	Threatened	Type of Presence
Migratory Marine Birds		

Name	Threatened	Type of Presence
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]		Species or species habitat 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
<u>Hydroprogne caspia</u>		
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
<u>Phoebetria fusca</u> 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
<u>Thalassarche cauta</u> Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Balaena glacialis australis Southorn Dight Whole [75520]		Droading known to com
Southern Right Whale [75529]	Endangered*	Breeding known to occur within area
<u>Balaenoptera edeni</u> 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

Name	Threatened	Type of Presence
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
<u>Caretta caretta</u> Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
<u>Chelonia mydas</u> Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
<u>Lamna nasus</u> Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
<u>Manta alfredi</u> 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
<u>Manta birostris</u> 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	Species or species habitat known to occur within area
<u>Orcinus orca</u> Killer Whale, Orca [46]		Species or species habitat may occur within area
<u>Rhincodon typus</u> 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

Species or species habitat known to occur within area

Species or species habitat known to occur within area

Species or species habitat likely to occur within area

Species or species habitat known to occur within area

> Species or species habitat may occur within area

> Species or species habitat known to occur

Migratory Wetlands Species Actitis hypoleucos Common Sandpiper [59309]

Calidris acuminata Sharp-tailed Sandpiper [874]

Calidris canutus Red Knot, Knot [855]

Calidris ferruginea Curlew Sandpiper [856]

Calidris melanotos Pectoral Sandpiper [858]

Calidris ruficollis Red-necked Stint [860] Endangered

Critically Endangered

Name	Threatened	Type of Presence
		within area
Limosa lapponica		
Bar-tailed Godwit [844]		Species or species habitat may occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus		
Osprey [952]		Species or species habitat known to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]		Species or species habitat 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 -Listed Marine Species [Resource Information] Species is listed under a different scientific name on the EPBC Act - Threatened Species list. Type of Presence Name Threatened 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

Anota l'an la san Na da 100000

Vulnerable

Species or species habitat may occur within area

Australian Lesser Noddy [26000]

Apus pacificus Fork-tailed Swift [678]

<u>Ardea alba</u> Great Egret, White Egret [59541]

Ardea ibis Cattle Egret [59542]

Calidris acuminata Sharp-tailed Sandpiper [874]

Calidris canutus Red Knot, Knot [855]

<u>Calidris ferruginea</u> Curlew Sandpiper [856] Species or species habitat likely to occur within area

Species or species habitat known to occur within area

Species or species habitat may occur within area

Species or species habitat known to occur within area

Endangered Species or species habitat likely to occur within area

Critically Endangered

Species or species habitat known to occur

Name	Threatened	Type of Presence
		within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calidris ruficollis		
Red-necked Stint [860]		Species or species habitat 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	Vulnerable	Earonian fooding or related
Wandering Albatross [89223]	vuirierable	Foraging, feeding or related behaviour likely to occur within area
<u>Diomedea sanfordi</u> Northern Royal Albatross [64456]	Endangered	Ecracing fooding or related
Haliaeetus leucogaster	Lindangered	Foraging, feeding or related behaviour likely to occur within area
White-bellied Sea-Eagle [943]		Species or species habitat
		known to occur within area
Himantopus himantopus Black-winged Stilt [870]		Species or species habitat
		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 may 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]

Merops ornatus Rainbow Bee-eater [670]

Motacilla cinerea Grey Wagtail [642]

Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]

Pachyptila turtur Fairy Prion [1066]

Pandion haliaetus Osprey [952]

Phoebetria fusca Sooty Albatross [1075] Vulnerable

Species or species habitat may occur within area

Species or species habitat may occur within area

Species or species habitat may occur within area

Critically Endangered Species or species habitat may occur within area

Species or species habitat likely to occur within area

Species or species habitat known to occur within area

Vulnerable

Species or species habitat may occur within area

Name	Threatened	Type of Presence
Puffinus assimilis		
Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur within area
[]		
Recurvirostra novaehollandiae		
Red-necked Avocet [871]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato)		
Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Sterna anaethetus		
Bridled Tern [814]		Foraging, feeding or related behaviour likely to occur within area
Sterna caspia		Fananian, faadin manualatad
Caspian Tern [59467]		Foraging, feeding or related behaviour known to occur within area
<u>Sterna dougallii</u> Roseate Tern [817]		Foraging, feeding or related
		behaviour likely to occur within area
Thalassarche cauta	\/ulporoblo*	Chanica ar anaciaa habitat
Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may 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
<u>Thinornis rubricollis</u> Hooded Plover [59510]		Species or species habitat

Hooded Plover [59510]

Species or species habitat may occur within area

Tringa nebularia

Common Greenshank, Greenshank [832]

Fish

Acentronura australe Southern Pygmy Pipehorse [66185]

Campichthys galei Gale's Pipefish [66191]

Choeroichthys suillus Pig-snouted Pipefish [66198]

Halicampus brocki Brock's Pipefish [66219]

Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]

Species or species habitat known to occur within area

Species or species habitat may occur within area

Name	Threatened	Type of Presence
<u>Hippocampus breviceps</u> Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
<u>Hippocampus subelongatus</u> West Australian Seahorse [66722]		Species or species habitat may occur within area
<u>Lissocampus fatiloquus</u> Prophet's Pipefish [66250]		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
<u>Nannocampus subosseus</u> Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
<u>Phycodurus eques</u> 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
<u>Pugnaso curtirostris</u> Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
<u>Solegnathus lettiensis</u> Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
<u>Stigmatopora argus</u> 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

Stigmatopora olivacea a pipefish [74966]

Syngnathoides biaculeatus

Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]

Urocampus carinirostris Hairy Pipefish [66282]

Vanacampus margaritifer Mother-of-pearl Pipefish [66283]

Mammals <u>Arctocephalus forsteri</u> Long-nosed Fur-seal, New Zealand Fur-seal [20]

Neophoca cinerea

Australian Sea-lion, Australian Sea Lion [22]

Vulnerable

Species or species habitat may occur within area

Foraging, feeding or related behaviour likely to occur within area

Name	Threatened	Type of Presence
Reptiles		
<u>Aipysurus pooleorum</u> Shark Bay Seasnake [66061]		Species or species habitat may occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
<u>Chelonia mydas</u>		
Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Disteira kingii		
Spectacled Seasnake [1123]		Species or species habitat may occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat 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]

Delphinus delphis Common Dophin, Short-beaked Common Dolphin [60]

Eubalaena australis Southern Right Whale [40]

<u>Grampus griseus</u> Risso's Dolphin, Grampus [64]

Megaptera novaeangliae Humpback Whale [38]

Orcinus orca Killer Whale, Orca [46]

Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51] Species or species habitat may occur within area

Species or species habitat may occur within area

ale [40]EndangeredBreeding known to occur
within areaampus [64]Species or species habitat
may occur within areaangliae
38]VulnerableSpecies or species habitat
known to occur within area46]Species or species habitat
may occur within area

Species or species habitat may occur within area
Name	Status	Type of Presence
<u>Tursiops aduncus</u> 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
Lake Joondalup	WA
Neerabup	WA
Unnamed WA21176	WA
Unnamed WA43290	WA
Woodvale Nature Reserve	WA

Inva	sive	Species					Ĺ	Re	sour	<u>ce Ir</u>	nform	<u>nation</u>	1
			 ~ ~		 								

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 Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis		
Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos		
Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis		
Europe and Oaldfinals [400]		On a size on an a size habitat

European Goldfinch [403]

Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]

Passer domesticus House Sparrow [405]

Passer montanus Eurasian Tree Sparrow [406]

Streptopelia chinensis Spotted Turtle-Dove [780]

Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]

Sturnus vulgaris Common Starling [389] likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat likely to occur

Name	Status	Type of Presence
		within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus		On a size, an an a size, habitat
Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Funambulus pennantii		
Northern Palm Squirrel, Five-striped Palm Squirrel [129]		Species or species habitat likely to occur within area
Mus musculus		
House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus		
Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus		
Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus		
Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Vulpes vulpes		
Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Anredera cordifolia		
Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine,	,	Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425] Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]

Asparagus Fern, Ground Asparagus, Basket Fern,

Asparagus declinatus Bridal Veil, Bridal Veil Creeper, Pale Berry Asparagus Fern, Asparagus Fern, South African Creeper [66908]

Asparagus plumosus Climbing Asparagus-fern [48993]

Brachiaria mutica Para Grass [5879]

Potato Vine [2643]

Asparagus aethiopicus

Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]

Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]

Chrysanthemoides monilifera subsp. monilifera Boneseed [16905] Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat may occur within area

Species or species habitat may occur within area

Species or species habitat may occur within area

Species or species

Name	Status	Type of Presence
Operator en X Operator en en en en el en el		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 Sag [10892] Lycium ferocissimum	k	Species or species habitat likely to occur within area
African Boxthorn, Boxthorn [19235]		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
Protasparagus densiflorus Asparagus Fern, Plume Asparagus [5015]		Species or species habitat likely to occur within area
Protasparagus plumosus Climbing Asparagus-fern, Ferny Asparagus [11747]		Species or species habitat likely to occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]	S.x reichardtii	Species or species habitat likely to occur within area
Salvinia malasta		

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 Cypress, Salt Cedar [16018] Reptiles

Hemidactylus frenatus Asian House Gecko [1708]

Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]

Nationally Important Wetlands Name

Joondalup Lake

Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

Species or species habitat likely to occur within area

[Resource Information]
State
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

-31.75364 115.77304

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 Government National Environmental Scien

-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.

Please feel free to provide feedback via the Contact Us page.

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APPENDIX B

Naturemap Search Tool Report

360 Environmental Pty Ltd



NatureMap Species Report

Created By Guest user on 19/06/2017

Current Names Only Yes Core Datasets Only Yes Method 'By Circle' Centre 115° 46' 23" E,31° 45' 14" S Buffer 5km Group By Kingdom

Kingdom	Species	Records
Animalia Chromista Fungi Plantae Protozoa	310 4 16 478 13	12693 4 19 819 19
TOTAL	821	13554

Name ID Species Name

Naturalised	Conservation Code	1

Conservation Code ¹Endemic To Query Area

museum

Department of Parks and Wildlife

Anim	alia				
	1.	24559	Acanthagenys rufogularis (Spiny-cheeked Honeyeater)		
	2.		Acanthistius pardalotus		
	3.		Acanthistius serratus		
	4.	24260	Acanthiza apicalis (Broad-tailed Thornbill, Inland Thornbill)		
	5.	24261	Acanthiza chrysorrhoa (Yellow-rumped Thornbill)		
	6.	24262	Acanthiza inornata (Western Thornbill)		
	7.	24560	Acanthorhynchus superciliosus (Western Spinebill)		
	8.	25535	Accipiter cirrocephalus (Collared Sparrowhawk)		
	9.	24281	Accipiter cirrocephalus subsp. cirrocephalus (Collared Sparrowhawk)		
	10.	25536	Accipiter fasciatus (Brown Goshawk)		
	11.	42368	Acritoscincus trilineatus (Western Three-lined Skink)		
	12.	25755	Acrocephalus australis (Australian Reed Warbler)		
	13.	41323	Actitis hypoleucos (Common Sandpiper)	IA	
	14.		Amblyomma triguttatum		
	15.		Aname mainae		
	16.		Aname tepperi		
	17.	24310	Anas castanea (Chestnut Teal)		
	18.	24312	Anas gracilis (Grey Teal)		
	19.	24313	Anas platyrhynchos (Mallard)		
			Anas rhynchotis (Australasian Shoveler)		
		24316	Anas superciliosa (Pacific Black Duck)		
		47414	Anhinga novaehollandiae (Australasian Darter)		
	23.		Anser anser		
		24561	Anthochaera carunculata (Red Wattlebird)		
			Anthochaera lunulata (Western Little Wattlebird)		
			Aprasia repens (Sand-plain Worm-lizard)		
			Apus pacificus (Fork-tailed Swift, Pacific Swift)	IA	
		24285	Aquila audax (Wedge-tailed Eagle)		
	29.		Araneus cyphoxis		
			Arctocephalus tropicalis (Subantarctic fur-seal)	Т	
			Ardea ibis (Cattle Egret)	IA	
			Ardea modesta (Eastern Great Egret)	IA	
			Ardea novaehollandiae (White-faced Heron)		
			Ardea pacifica (White-necked Heron)		
			Artamus cinereus (Black-faced Woodswallow)		
		24353	Artamus cyanopterus (Dusky Woodswallow)		
	37.		Artoria linnaei		
	38.		Austracantha minax		
		24318	Aythya australis (Hardhead)		
	40.		Ballarra longipalpus		
	41.	04040	Barnardius zonarius		
	42.	24319	Biziura lobata (Musk Duck)		

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
43.	42381	Brachyurophis semifasciatus (Southern Shovel-nosed Snake)			
44.		Cacatua galerita (Sulphur-crested Cockatoo)			
45. 46.		Cacatua galerita subsp. galerita (Sulphur-crested Cockatoo) Cacatua pastinator (Western Long-billed Corella)	Y		
40.		Cacatua pasunato (western Long-billed Coleila) Cacatua roseicapilla (Galah)			
48.		Cacatua sanguinea (Little Corella)			
49.	24729	Cacatua tenuirostris (Eastern Long-billed Corella)	Y		
50.		Cacomantis flabelliformis (Fan-tailed Cuckoo)			
51.		Cacomantis flabelliformis subsp. flabelliformis (Fan-tailed Cuckoo)			
52. 53.		Cacomantis pallidus (Pallid Cuckoo) Calidris ferruginea (Curlew Sandpiper)		т	
54.		Calidris ruficollis (Red-necked Stint)		IA	
55.	25717	Calyptorhynchus banksii (Red-tailed Black-Cockatoo)			
56.	24733	Calyptorhynchus baudinii (Baudin's Cockatoo (long-billed black-cockatoo), Baudin's		т	
-7	0.470.4	Cockatoo)			
57.	24734	Calyptorhynchus latirostris (Carnaby's Cockatoo (short-billed black-cockatoo), Carnaby's Cockatoo)		т	
58.	30883	Canis lupus subsp. familiaris (Dog)	Y		
59.		Capropygia unistriata			
60.		Carassius auratus			
61.	25335	Caretta caretta (Loggerhead Turtle)		т	
62.	0.4000	Centroberyx australis			
63. 64.	24086	Cercartetus concinnus (Western Pygmy-possum, Mundarda) Cercophonius sulcatus			
65.	24186	Chalinolobus gouldii (Gould's Wattled Bat)			
66.		Charadrius leschenaultii (Greater Sand Plover)		IA	
67.	24377	Charadrius ruficapillus (Red-capped Plover)			
68.		Chelodina colliei (South-western Snake-necked Turtle)			
69.		Chenonetta jubata (Australian Wood Duck, Wood Duck)			
70. 71.		Cheramoeca leucosterna (White-backed Swallow) Christinus marmoratus (Marbled Gecko)			
71.	24900	Chroicocephalus novaehollandiae			
73.	24432	Chrysococcyx lucidus subsp. plagosus (Shining Bronze Cuckoo)			
74.	24288	Circus approximans (Swamp Harrier)			
75.		Cladorhynchus leucocephalus (Banded Stilt)			
76.		Colluricincla harmonica (Grey Shrike-thrush)			
77. 78.		Colluricincla harmonica subsp. rufiventris (Grey Shrike-thrush) Columba livia (Domestic Pigeon)	Y		
79.		Coracina novaehollandiae (Black-faced Cuckoo-shrike)			
80.		Cormocephalus aurantiipes			
81.	24416	Corvus bennetti (Little Crow)			
82.		Corvus coronoides (Australian Raven)			
83. 84.		Coturnix ypsilophora (Brown Quail) Cracticus nigrogularis (Pied Butcherbird)			
85.		Cracticus tibicen (Australian Magpie)			
86.		Cracticus torquatus (Grey Butcherbird)			
87.	24918	Crenadactylus ocellatus subsp. ocellatus (Clawless Gecko)			
88.		Crinia insignifera (Squelching Froglet)			
89.		Cryptoblepharus buchananii			
90. 91.		Cryptoblepharus plagiocephalus Ctenophorus adelaidensis (Southern Heath Dragon, Western Heath Dragon)			
91.		Ctenotus australis			
93.		Ctenotus fallens			
94.	25047	Ctenotus impar			
95.		Cyclodomorphus celatus (Western Slender Blue-tongue)			
96.		Cygnus atratus (Black Swan)	X		
97. 98.		Dacelo novaeguineae (Laughing Kookaburra) Daphoenositta chrysoptera (Varied Sittella)	Y		
98. 99.		Delma grayii			
100.		Demansia psammophis subsp. reticulata (Yellow-faced Whipsnake)			
101.	24325	Dendrocygna eytoni (Plumed Whistling Duck)			
102.	25607	Dicaeum hirundinaceum (Mistletoebird)			
103.	0.100-	Dingosa serrata			
104. 105.		Diplodactylus granariensis subsp. granariensis Diplodactylus polyophthalmus			
105.		Echiopsis curta (Bardick)			
107.		Egernia napoleonis			
108.		Egretta garzetta			
109.		Egretta novaehollandiae			
110.		Elanus axillaris			
		NatureMap is a collaborative project of the Department of Parks and Wildlife and the Wester	n Australian Muse	um. Departmen Parks and	t of Wildlife museum

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
111.	24290	Elanus caeruleus subsp. axillaris (Australian Black-shouldered Kite)			
112.	25250	Elapognathus coronatus (Crowned Snake)			
113.	47937	Elseyornis melanops (Black-fronted Dotterel)			
114. 115.		Eodelena convexa			
115.	24652	Eolophus roseicapillus Eopsaltria georgiana (White-breasted Robin)			
117.		Epthianura albifrons (White-fronted Chat)			
118.		Eriophora biapicata			
119.	24379	Erythrogonys cinctus (Red-kneed Dotterel)			
120.		Ethmostigmus rubripes			
121.		Falco berigora (Brown Falcon)			
122.		Falco cenchroides (Australian Kestrel, Nankeen Kestrel)			
123. 124.		Falco cenchroides subsp. cenchroides (Australian Kestrel, Nankeen Kestrel) Falco longipennis (Australian Hobby)			
125.		Falco peregrinus (Peregrine Falcon)		S	
126.		Falco peregrinus subsp. macropus (Australian Peregrine Falcon)		S	
127.		Falcunculus frontatus subsp. leucogaster (Western Shrike-tit, Crested Shrike-tit)			
128.	24041	Felis catus (Cat)	Y		
129.		Fulica atra (Eurasian Coot)			
130.		Fulica atra subsp. australis (Eurasian Coot)			
131. 132.		Gallinula tenebrosa (Dusky Moorhen)			
132.		Gallinula tenebrosa subsp. tenebrosa (Dusky Moorhen) Gallirallus philippensis (Buff-banded Rail)			
134.	20100	Gambusia affinis			
135.	25530	Gerygone fusca (Western Gerygone)			
136.	24443	Grallina cyanoleuca (Magpie-lark)			
137.		Gymnothorax woodwardi			
138.		Haliaeetus leucogaster (White-bellied Sea-Eagle)			
139. 140.		Halastur sphenurus (Whistling Kite)			
140.		Halobaena caerulea (Blue Petrel) Heleioporus eyrei (Moaning Frog)			
142.		Hemiergis quadrilineata			
143.		Henicops dentatus			
144.		Heterodontus portusjacksoni			
145.		Hieraaetus morphnoides (Little Eagle)			
146.		Himantopus himantopus (Black-winged Stilt)			
147. 148.	24491	Hirundo neoxena (Welcome Swallow) Hogna crispipes			
149.	24215	Hydromys chrysogaster (Water-rat, Rakali)		P4	
150.		Hydrophis platurus (Yellow-bellied Seasnake)			
151.		Hydroprogne caspia			
152.		Idiommata blackwalli			
153.	05 170	Isometroides vescus			
154. 155.		Isoodon obesulus (Southern Brown Bandicoot) Isoodon obesulus subsp. fusciventer (Quenda, Southern Brown Bandicoot)		P4 P4	
155.	24100	Isopeda leishmanni		F 4	
157.	47975	Ixobrychus dubius (Australian Little Bittern)		P4	
158.	24347	Ixobrychus flavicollis subsp. australis (Australian Black Bittern)		P1	
159.	24070	Kogia breviceps (Pygmy Sperm Whale)			
160.		Lampona cylindrata			
161.		Larus novaehollandiae (Silver Gull)			
162. 163.	25638	Larus pacificus (Pacific Gull) Latrodectus hasseltii			
164.	25133	Lerista elegans			
165.		Lerista lineopunctulata			
166.	25165	Lerista praepedita			
167.	25005	Lialis burtonis			
168.		Lichmera indistincta (Brown Honeyeater)			
169.		Limnodynastes dorsalis (Western Banjo Frog)			
170. 171.		Limosa limosa (Black-tailed Godwit) Litoria adelaidensis (Slender Tree Frog)		IA	
171.		Litoria moorei (Motorbike Frog)			
172.	20000	Lophoictinia isura			
174.		Lycosa australicola			
175.		Lycosa gilberta			
176.		Macronectes giganteus (Southern Giant Petrel)		IA	
177.		Macropus fuliginosus (Western Grey Kangaroo)			
178. 179.		Malacorhynchus membranaceus (Pink-eared Duck) Malurus lamberti (Variegated Fairy-wren)			
179.		Malurus lamberti (vanegated Fairy-wien) Malurus leucopterus (White-winged Fairy-wren)			
	20002				

NatureMap is a collaborative project of the Department of Parks and Wildlife and the Western Australian Museum.

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	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
181.	25654	Malurus splendens (Splendid Fairy-wren)			
182.	24583	Manorina flavigula (Yellow-throated Miner)			
183.		Masasteron sampeyae			
184.	05750	Masasteron tuart			
185. 186.		Megalurus gramineus (Little Grassbird) Melithreptus brevirostris (Brown-headed Honeyeater)			
187.		Menetia greyii			
188.		Merops ornatus (Rainbow Bee-eater)		IA	
189.		Meuschenia freycineti			
190.		Microcarbo melanoleucos			
191.	25693	Microeca fascinans (Jacky Winter)			
192.		Missulena granulosa			
193.	25240	Morelia spilota subsp. imbricata (Carpet Python)			
194.		Morethia obscura			
195.	24223	Mus musculus (House Mouse)	Y		
196.	25610	Myandra cambridgei Mujarra inquijata (Bootloop Ekrootaber)			
197. 198.		Myiagra inquieta (Restless Flycatcher) Myobatrachus gouldii (Turtle Frog)			
199.		Natator depressus (Flatback Turtle)		т	
200.	20011	Neatypus obliquus		•	
201.	25248	Neelaps bimaculatus (Black-naped Snake)			
202.	25249	Neelaps calonotos (Black-striped Snake)		P3	
203.	24738	Neophema elegans (Elegant Parrot)			
204.		Nephila edulis			
205.	25252	Notechis scutatus (Tiger Snake)			
206.	05504	Notiasemus glauerti			
207.	25564	Nycticorax caledonicus (Rufous Night Heron)			
208. 209.	24407	Ocrisiona leucocomis Ocyphaps lophotes (Crested Pigeon)			
200.		Oryctolagus cuniculus (Rabbit)	Y		
211.		Oxyura australis (Blue-billed Duck)		P4	
212.		Pachycephala rufiventris (Rufous Whistler)			
213.	24624	Pachycephala rufiventris subsp. rufiventris (Rufous Whistler)			
214.	24693	Pachyptila desolata (Antarctic Prion)			
215.		Pandion cristatus			
216.		Parasuta gouldii			
217.		Parasuta nigriceps			
218. 219.		Pardalotus punctatus (Spotted Pardalote)			
219.		Pardalotus striatus (Striated Pardalote) Passer domesticus (House Sparrow)	Y		
221.		Passer domesticus subsp. domesticus (House Sparrow)	Y		Y
222.		Pelecanus conspicillatus (Australian Pelican)			
223.	48060	Petrochelidon ariel (Fairy Martin)			
224.	48061	Petrochelidon nigricans (Tree Martin)			
225.		Petroica boodang (Scarlet Robin)			
226.		Petroica goodenovii (Red-capped Robin)			
227.		Phalacrocorax carbo (Great Cormorant)			
228. 229.		Phalacrocorax melanoleucos (Little Pied Cormorant) Phalacrocorax sulcirostris (Little Black Cormorant)			
229.		Phalacrocorax sulcirostris (Little Black Cormorant) Phalacrocorax varius (Pied Cormorant)			
231.		Phaps chalcoptera (Common Bronzewing)			
232.		Phylidonyris niger (White-cheeked Honeyeater)			
233.		Phylidonyris novaehollandiae (New Holland Honeyeater)			
234.		Phyllopteryx taeniolatus			
235.		Platalea flavipes (Yellow-billed Spoonbill)			
236.	24842	Platalea regia (Royal Spoonbill)			
237.		Platycephalus endrachtensis			
238.	24747	Platycephalus sp. Platycercus spurius (Pod control Porrot)			
239. 240.		Platycercus spurius (Red-capped Parrot) Platycercus zonarius (Australian Ringneck, Ring-necked Parrot)			
240.		Plegadis falcinellus (Glossy Ibis)		IA	
242.		Pletholax gracilis subsp. gracilis (Keeled Legless Lizard)			
243.		Podargus strigoides (Tawny Frogmouth)			
244.	24679	Podargus strigoides subsp. brachypterus (Tawny Frogmouth)			
245.	25704	Podiceps cristatus (Great Crested Grebe)			
246.		Podiceps cristatus subsp. australis (Great Crested Grebe)			
247.		Pogona minor subsp. minor (Dwarf Bearded Dragon)			
248.		Poliocephalus poliocephalus (Hoary-headed Grebe)			
249. 250.		Polytelis anthopeplus (Regent Parrot) Porphyrio porphyrio (Purple Swamphen)			
200.	25/31	י אואואין אויאיז איזאין אויאיז איזאיז אויאיזאין אויאיזאין אויאיזאין אויאיזאין אויאיזאין איזאיזאין איזאיזאין אי			

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	Name ID	Species Name Natura	alised	Conservation Code	¹ Endemic To Query Area
251.	24767	Porphyrio porphyrio subsp. bellus (Purple Swamphen)			
252.	24769	Porzana fluminea (Australian Spotted Crake)			
253.		Porzana pusilla (Baillon's Crake)			
254.		Porzana tabuensis (Spotless Crake)		_	
255.	25708	Procellaria aequinoctialis (White-chinned Petrel)		Т	
256. 257.	2/230	Pseudogobius olorum Pseudomys albocinereus (Ash-grey Mouse)			
258.		Pseudonaja affinis (Dugite)			
259.		Pseudonaja affinis subsp. affinis (Dugite)			
260.		Pseudophryne guentheri (Crawling Toadlet)			
261.		Pseudorhombus jenynsii			
262.	24702	Pterodroma brevirostris (Kerguelen Petrel)			
263.		Purpureicephalus spurius			
264.	25008	Pygopus lepidopodus (Common Scaly Foot)			
265.	24243	Rattus fuscipes (Western Bush Rat)			
266.	24245	Rattus rattus (Black Rat)	Y		
267.		Recurvirostra novaehollandiae (Red-necked Avocet)			
268.		Rhipidura albiscapa (Grey Fantail)			
269.		Rhipidura leucophrys (Willie Wagtail)			
270. 271.		Rhipidura leucophrys subsp. leucophrys (Willie Wagtail)			
	20034	Sericornis frontalis (White-browed Scrubwren)			V
272. 273.	25266	Simonus lineatus Simoselaps bertholdi (Jan's Banded Snake)			Y
273.		Smicrornis brevirostris (Weebill)			
275.		Sterna nereis subsp. nereis (Fairy Tern)		т	
276.		Stictonetta naevosa (Freckled Duck)			
277.		Strepera versicolor (Grey Currawong)			
278.	25589	Streptopelia chinensis (Spotted Turtle-Dove)	Y		
279.	25590	Streptopelia senegalensis (Laughing Turtle-Dove)	Y		
280.		Strongylura leiura			
281.	24943	Strophurus spinigerus subsp. inornatus			
282.		Strophurus spinigerus subsp. spinigerus			
283.	33992	Synemon gratiosa (Graceful Sunmoth)		P4	
284.	05705	Synothele mullaloo			
285.		Tachybaptus novaehollandiae (Australasian Grebe, Black-throated Grebe)			
286.	24082	Tachybaptus novaehollandiae subsp. novaehollandiae (Australasian Grebe, Black- throated Grebe)			
287.	24207	Tachyglossus aculeatus (Short-beaked Echidna)			
288.		Tadorna tadornoides (Australian Shelduck, Mountain Duck)			
289.		Thalasseus bergii			
290.	24845	Threskiornis spinicollis (Straw-necked Ibis)			
291.		Thysanophrys cirronasus			
292.	25519	Tiliqua rugosa			
293.	25207	Tiliqua rugosa subsp. rugosa			
294.	25549	Todiramphus sanctus (Sacred Kingfisher)			
295.		Torquigener vicinus			
296.		Tribonyx ventralis (Black-tailed Native-hen)			
297.		Trichoglossus haematodus (Rainbow Lorikeet)			
298.		Trichoglossus haematodus subsp. moluccanus (Rainbow Lorikeet)	ŕ		
299.		Trichosurus vulpecula (Common Brushtail Possum)			
300. 301.		Trichosurus vulpecula subsp. vulpecula (Common Brushtail Possum) Tringa nebularia (Common Greenshank)		14	
301. 302.		Tursiops truncatus (Bottlenose Dolphin)		IA	
302.		Tyto alba subsp. delicatula (Barn Owl)			
304.		Underwoodisaurus milii (Barking Gecko)			
305.		Urodacus novaehollandiae			
306.	25218	Varanus gouldii (Bungarra or Sand Monitor)			
307.	25526	Varanus tristis (Racehorse Monitor)			
308.		Venator immansueta			
309.		Venatrix pullastra			
310.	25765	Zosterops lateralis (Grey-breasted White-eye, Silvereye)			
Chromista					
311.	27117	Padina gymnospora			
312.	27258	Sargassum spinuligerum			
313.	27260	Sargassum tristichum			
314.	27273	Scytothalia dorycarpa			
Fungi					
•	38771	Coltriciella dependens			
315.					
315. 316.	38780	Crepidotus eucalyptorum			
	38780	Crepidotus eucalyptorum		Department Parks and 1	

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317. 318.	47215	Entoloma byssisedum Gymnopilus allantopus			
319.		Gymnopilus purpuratus			
320.	38791	Hebeloma crustuliniforme			
321.	46454	Leucoagaricus leucothites			
322.		Panus fasciatus			
323.		Phellinus gilvus			
324.	38830	Psilocybe coprophila			
325. 326.	38835	Pycnoporus coccineus Royoporus badius			
327.	00000	Schizophyllum commune			
328.	38840	Stereum hirsutum			
329.		Tremella mesenterica			
330.	45907	Ustilago trichophora			Y
Plantae					
331.	15466	Acacia applanata			
332.		Acacia benthamii		P2	
333.	3262	Acacia cochlearis (Rigid Wattle)			
334.	3282	Acacia cyclops (Coastal Wattle)			
335.		Acacia lasiocarpa var. lasiocarpa			
336.		Acacia lasiocarpa var. sedifolia			
337. 338.		Acacia longifolia	Y Y		
339.		Acacia longifolia subsp. longifolia Acacia pulchella var. glaberrima	r		
340.		Acacia rostellifera (Summer-scented Wattle)			
341.		Acacia saligna (Orange Wattle, Kudjong)			
342.	30032	Acacia saligna subsp. saligna			
343.	3541	Acacia sessilis			
344.	3584	Acacia truncata			
345.		Acacia willdenowiana (Grass Wattle)			
346.		Acanthocarpus preissii			
347. 348.		Adenanthos cygnorum subsp. cygnorum (Common Woollybush) Aira caryophyllea (Silvery Hairgrass)	Y		
349.		Alexgeorgea nitens	1		
350.		Allocasuarina fraseriana (Sheoak, Kondil)			
351.	2652	Alternanthera nodiflora (Common Joyweed)			
352.	2653	Alternanthera pungens (Khaki Weed)	Y		
353.		Alyxia buxifolia (Dysentery Bush)			
354.		Amaranthus blitum	Y		
355. 356.		Amphipogon laguroides subsp. laguroides			
357.		Andersonia heterophylla Anigozanthos humilis subsp. humilis			
358.		Anigozanthos manglesii subsp. manglesii			
359.		Apium annuum			
360.	8595	Apium graveolens (Wild Celery)	Y		
361.		Arctotheca calendula (Cape Weed, African Marigold)	Y		
362.	7839	Arctotheca populifolia (Dune Arctotheca, Beach Pumpkin, Coast Capeweed, Beach	Y		
363.	7940	Daisy) Arctatis stocchadifelia (M/hite Arctatis, Silver Arctatis)	V		
363. 364.		Arctotis stoechadifolia (White Arctotis, Silver Arctotis) Arnocrinum preissii	Y		
365.		Asparagus aethiopicus	Y		
366.		Astartea scoparia (Common Astartea)			
367.		Astroloma ciliatum (Candle Cranberry)			
368.		Astroloma microcalyx (Native Cranberry)			
369.		Astroloma pallidum (Kick Bush)			
370.		Astroloma xerophyllum		Da	
371. 372.		Austrostipa mundula Austrostipa nitida		P3	
373.		Austrostipa Initia Austrostipa tenuifolia			
374.		Bacopa monnieri	Y		
375.	34161	Baeckea sp. Limestone (N. Gibson & M.N. Lyons 1425)		P1	
376.	1800	Banksia attenuata (Slender Banksia, Piara)			
377.	1822	Banksia ilicifolia (Holly-leaved Banksia)			
378.		Banksia littoralis (Swamp Banksia, Pungura)			
379.		Banksia menziesii (Firewood Banksia)			
380. 381.		Banksia sessilis var. cygnorum Barbula calycina			
382.		Baumea articulata (Jointed Rush)			
383.		Baumea juncea (Bare Twigrush)			
384.	745	Baumea preissii		-	
				-	

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	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
385.		Beaufortia elegans (Elegant Beaufortia)			
386. 387.		Billardiera fraseri (Elegant Pronaya) Bolboschoenus caldwellii (Marsh Club-rush)			
388.		Boronia purdieana subsp. purdieana			
389.		Boronia ramosa subsp. anethifolia			
390.	3710	Bossiaea eriocarpa (Common Brown Pea)			
391.	7867	Brachyscome bellidioides			
392.		Brachyscome iberidifolia			
393.		Brassica barrelieri subsp. oxyrrhina (Smooth-stem Turnip)	Y		
394. 395.		Brassica tournefortii (Mediterranean Turnip) Briza maxima (Blowfly Grass)	Y		
396.		Briza minor (Shivery Grass)	Y		
397.	247	Bromus arenarius (Sand Brome)			
398.	249	Bromus diandrus (Great Brome)	Y		
399.		Bryum lanatum			
400.		Burchardia congesta			
401. 402.		Burchardia multiflora (Dwarf Burchardia) Caesia micrantha (Pale Grass Lily)			
402.		Cakile maritima (Sea Rocket)	Y		
404.		Caladenia arenicola			
405.	1592	Caladenia flava (Cowslip Orchid)			
406.		Caladenia flava subsp. flava			
407.		Caladenia longicauda subsp. borealis			
408. 409.		Caladenia longicauda subsp. calcigena			
409.		Caladenia reptans subsp. reptans Calandrinia corrigioloides (Strap Purslane)			
411.		Calectasia narragara			
412.	10861	Callistachys lanceolata (Wonnich)			
413.	96	Callitris preissii (Rottnest Island Pine, Maro)			
414.		Callophycus dorsifer			
415. 416.		Calothamnus lateralis			
410.		Calothamnus quadrifidus (One-sided Bottlebrush, Kwowdjard) Calothamnus quadrifidus subsp. quadrifidus			
418.		Calothamnus sanguineus (Silky-leaved Blood flower, Pindak)			
419.	5460	Calytrix fraseri (Pink Summer Calytrix)			
420.		Calytrix sapphirina			
421.		Campylopus introflexus	Y		
422. 423.		Cardamine hirsuta (Common Bittercress) Cardamine sp. Jandakot (P. Luff s.n. 4/7/1969)	Y		
424.		Carex appressa (Tall Sedge)	I		
425.		Carex divisa (Divided Sedge)	Y		
426.	755	Carex fascicularis (Tassel Sedge)			
427.		Carex thecata			
428.		Carpobrotus edulis (Hottentot Fig)	Y		
429. 430.		Carpobrotus virescens (Coastal Pigface, Kolboko, Bain) Cartonema philydroides			
431.		Cassytha flava (Dodder Laurel)			
432.	2957	Cassytha racemosa (Dodder Laurel)			
433.	18314	Casuarina cunninghamiana subsp. cunninghamiana	Y		
434.		Catapodium rigidum (Rigid Fescue)	Y		
435. 436.		Caulerpa sedoides forma geminata Cenchrus ciliaris (Buffel Grass)	Y		
436. 437.		Cenchrus echinatus (Burrgrass) Cenchrus echinatus (Burrgrass)	Y		
438.		Centella asiatica			
439.	1125	Centrolepis drummondiana			
440.		Cerastium glomeratum (Mouse Ear Chickweed)	Y		
441.		Ceratodon purpureus subsp. convolutus	~		
442. 443.		Chamaecytisus palmensis (Tagasaste) Chamelaucium uncinatum (Geraldton Wax)	Y		
443.		Chasmanthe floribunda (African Cornflag)	Y		
445.		Chenopodium glaucum (Glaucous Goosefoot)	Y		
446.	2491	Chenopodium macrospermum	Y		
447.		Chordifex microcodon			
448.		Claviclonium ovatum			
449. 450.		Clematis pubescens (Common Clematis) Codium laminarioides			
451.		Comesperma calymega (Blue-spike Milkwort)			
452.		Conospermum acerosum subsp. acerosum			
453.	15516	Conospermum canaliculatum subsp. canaliculatum			
454.	1876	Conospermum incurvum (Plume Smokebush)			
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445. B34 Constandynum prival space Plant Name/ 45. B34 Constandynum prival Plant Name/ 46. B34 Constandynum prival Plant Name/ 47. B34 Constandynum prival Plant Name/ 48. B34 Constandynum prival Plant Name/ 48. B34 Constandynum prival Plant Name/ 48. B35 Constandynum prival Plant Name/ 48. B35 Constandynum prival Plant Plant Name/ 48. B37 Constandynum prival Plant Plant Name/ 48. B37 Constandynum prival Plant Plant Name/ 48. B37 Constand Plant Name/ 49. B33 Constand Plant Name/ 40. B33 Constand Plant Name/ 41. B37 Constand Plant Name/ 42. B340 Constand Plant Name/ 43. B340 Constand Plant Name/ 44. B33 Constand Plant Name/ 45. B340 Constand Plant Name/ 46. B340 Constand Plant Name/ <t< th=""><th></th><th>Name ID</th><th>Species Name</th><th>Naturalised</th><th>Conservation Code</th><th>¹Endemic To Query Area</th></t<>		Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
447. 448. 148. Composite analysis (protect protect	455	5. 6347	Conostephium minus (Pink-tipped Pearl flower)			
468. 1110 Conceptis auckees (Private Conception) 468. 1125 Conceptis auckees (Private Conception) 478. 1126 Conceptis auckees (Private Conception) 479. 127 128 Conceptis (Private Conceptis (Privat	456	6. 6348	Conostephium pendulum (Pearl Flower)			
4460 1151 Description anxiety and years and year any year of the section of the sect						
440. 142 Conseques Conseques Conseques Conseques 441. 1432 Conseques Conseques Conseques 442. 1148 Conseques Conseques Conseques 443. 1149 Conseques Conseques Conseques 444. 1149 Conseques Conseques Conseques Conseques 446. 1149 Conseques Conseconseques Conseques Conseques Conseques Conseques Conseques Conse						
441. 142 Charles Consolies Control Auto, Canadoma 442. 1436 Consolies Control Auto, Canadoma 443. 1436 Consolies Control Auto, Canadoma 445. 1137 Consolies Control Auto, Canadoma 446. 7037 Consolies Control Auto, Canadoma 447. 1436 Consolies Control Auto, Canadoma 448. 1125 Consolies Control Auto, Canadoma 447. 1437 Consolies Control Auto, Canadoma 448. 1125 Consolies Control Auto, Canadoma 447. 1436 Consolies Control Auto, Canadoma 447. 1436 Consolies Control Auto, Canadoma 447. 1436 Consolies Control Control Auto, Canadoma 447. 1531 Consolies Control Control Auto, Canadoma 447. 1531 Control Auto, Canadoma 447. 1531 Control Auto, Canadoma 447. 1531 Control Auto, Canadoma 448. Control Auto, Canadoma Y 448. Control Auto, Canadoma Y 448. Control Auto, Canadoma Y 449. Decontro					P3	
442 1143 Charge Space and Space Space 443 1149 Charge Space S			•		FJ	
446. 1149 Consults Single Junces Interpretation of the Single Sing						
446. 793 Convas bonchmain (Plastic Plastice) v 446. 4024 Convas bonchma alle, valebana v 447. 4425 Convaster conversal valebana v 448. 1123 Conversal conversal valebana v 448. 1123 Conversal conversal valebana v 447. 3137 Consult conversal valebana v 473. 3146 Consult conversal valebana v 474. 1141 Apprict valebana v 475. 3158 Consult conversal valebana v 476. 1128 Separation valebanas v 477. 11316 Conversal valebanas v 478. 11316 Conversal valebanas v 478. 11316 Conversal valebanas v 478. 11316 Conversal valebanas V 479. 11316 Conversal valebanas V 479. 11320 Conversal valebanas V 479. 11420 <	463					
446. 2007 Convariant surface adop, while adop	464	4. 11597	Conostylis setigera subsp. setigera			
4427 4426 Considering analysis (analysis) Y 4488 7145 Constant and part of an analysis Y 4491 7145 Constant and part of analysis Y 4710 3137 Constant and part of analysis Y 4711 3137 Constant and part of analysis Y 4723 3146 Constant and part of analysis Y 473 1318 Constant and part of analysis Y 473 1318 Constant and part of analysis Y 474 13141 Gondan dampting (Constant) Y 475 1318 Constant and part of analysis Y 476 13141 Gondan dampting (Constant) Y 477 1318 Constant analysis Y 478 Constant analysis Y Y 479 1218 Constant analysis Y 470 1218 Constant analysis Y 471 1218 Constant analysis Y 473 1218 Constant analysis Y 474 1218 Constant analysis Y 475 1258 Constant analysis Y 476 1250 Constant analysis Y </td <td>465</td> <td>5. 7939</td> <td>Conyza bonariensis (Flaxleaf Fleabane)</td> <td>Y</td> <td></td> <td></td>	465	5. 7939	Conyza bonariensis (Flaxleaf Fleabane)	Y		
1436 11312 Conjunction microartha microar			•			
440. 744. 534. γ 471. 3132 Consule ration (Dress Streamsp.)				Y		
470. 3130 20130 Automatic planes Borneys 471. 3137 Dasale dynamics (Done Borneys) 472. 3140 Dasale dynamics N 473. 31410 Dasale dynamics N 474. 11141. Openative dynamics N 475. 11310. Openative dynamics N 476. 11310. Openative dynamics N 477. 11810. Openative dynamics N 478. 11910. Openative dynamics N 479. 11910. Openative dynamics N 479. 11910. Openative dynamics N N 481. 19910. Daviasing dynamics N N N 483. 19910. Daviasing dynamics N N N N N 483. 19910. Daviasing dynamics N N N N N N 484. 19910. Daviasing dynamics N N N N N N N 485. 19910.				V		
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475. 233. Operator Service (Social) Y 476. 1918. Operator Service (Social) Y 477. 1918. Operator Service (Social) Y 478. 1918. Operator Service (Social) Y 478. 1918. Operator Service (Social) Y 470. 1918. Operator Service (Social) Y 480. 1918. Operator Service (Social) Y 481. 3327. Devised individes (Martinal) Y 482. 1960. Devision individes substructuration Y 484. 3328. Devision individes substructuration Y 484. 1970. Decords individes substructuration Y 485. 3490. Decords individes substructuration Y 486. 1970. Seconds (Baubergar) (My) Y 487. 1920. Department individes (Baubergar) (My) Y 488. 31970. Decords individes (Baubergar) (My) Y 488. 31970. Decords individes (Baubergar) (My) Y 489. 220. Degrame individes (Baubergar) (My) Y 480. 1230. Decords individes (Baubergar) (My) Y 481. 1442. Decords individes (Baubergar) Y<	473	3. 3146	Crassula thunbergiana	Y		
147. 19318 Operate involuentates Y 477. 1019 Operate france/actions Y 478. 10191 Operate france/actions Y 481. 3827 Devises in utilities adap, modifiera Y 483. 10863 Devises in utilities adap, modifiera Y 484. 3848 Devises in utilities adap, modifiera Y 485. 1269 Devises in utilities adap, modifiera Y 486. 1279 Devises in utilities adap, modifiera Y 487. 1269 Devises in utilities adap, modifiera Y 488. 2073 Depresent actions from the trance in th	474	4. 15114	Cyanicula gemmata			
147. 816 (βograns transform (Sacay) Sackage) γ 1478. 1121 (Bargyangan bernentific (Phesaphic Buch)	475	5. 283	Cynodon dactylon (Couch)	Y		
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	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
525.	20162	Fabronia hampeana		P2	Alou
526.		Ficinia nodosa (Knotted Club Rush)			
527.	32369	Fissidens tenellus			
528.	11571	Galenia pubescens var. pubescens	Y		
529.		Galinsoga parviflora (Potato Weed)	Y		
530.		Galium murale (Small Goosegrass)	Y		
531. 532.		Gastrolobium capitatum Gastrolobium linearifolium			
533.		Gazania linearis	Y		
534.		Gelinaria ulvoidea	•		
535.	32380	Gemmabryum pachythecum			
536.	32381	Gemmabryum preissianum			
537.	4341	Geranium solanderi (Native Geranium)			
538.		Gladiolus caryophyllaceus (Wild Gladiolus)	Y		
539.		Gomphocarpus physocarpus	Y		
540. 541.		Gompholobium scabrum Gompholobium tomentosum (Hairy Yellow Pea)			
542.		Gonocarpus pithyoides			
543.		Grevillea crithmifolia			
544.	15839	Grevillea preissii subsp. preissii			
545.		Grevillea sp.			
546.	33737	Grevillea sp. Ocean Reef (D. Pike Joon 4)		P1	Y
547.		Grevillea vestita subsp. vestita			
548.		Guichenotia ledifolia			
549. 550.		Haemodorum laxum Hakea costata (Ribbed Hakea)			
551.		Hakea lissocarpha (Honey Bush)			
552.		Hakea trifurcata (Two-leaf Hakea)			
553.		Hardenbergia comptoniana (Native Wisteria)			
554.	3016	Heliophila pusilla	Y		
555.	8084	Helminthotheca echioides (Ox-tongue, Prickly Ox-tongue)	Y		
556.		Hemarthria uncinata (Matgrass)			
557.		Hemiandra incana			
558. 559.		Hemiandra pungens (Snakebush) Hensmania turbinata			
560.		Heteropogon contortus (Bunch Speargrass)			
561.		Hibbertia aurea			
562.	5117	Hibbertia cuneiformis (Cutleaf Hibbertia)			
563.	5134	Hibbertia huegelii			
564.		Hibbertia hypericoides (Yellow Buttercups)			
565.		Hibbertia hypericoides subsp. hypericoides			
566. 567.		Hibbertia perfoliata Hibbertia racemosa (Stalked Guinea Flower)			
568.		Hibbertia sericosepala			
569.		Hibbertia subvaginata			
570.	444	Holcus lanatus (Yorkshire Fog)	Y		
571.	6222	Homalosciadium homalocarpum			
572.		Hordeum leporinum (Barley Grass)	Y		
573.		Hovea pungens (Devil's Pins, Puyenak)			
574. 575.		Hovea trisperma (Common Hovea) Hybanthus calycinus (Wild Violet)			
575.		Hypnea valentiae			
577.		Hypocalymma angustifolium (White Myrtle, Kudjid)			
578.	5825	Hypocalymma robustum (Swan River Myrtle)			
579.		Hypochaeris glabra (Smooth Catsear)	Y		
580.		Isolepis cernua var. setiformis			
581.		Isolepis marginata (Coarse Club-rush)			
582. 583.		Isotropis cuneifolia (Granny Bonnets) Jacksonia floribunda (Holly Pea)			
584.		Jacksonia furcellata (Grey Stinkwood)			
585.		Jacksonia sericea (Waldjumi)		P4	
586.		Jacksonia sternbergiana (Stinkwood, Kapur)			
587.	1188	Juncus pallidus (Pale Rush)			
588.		Kennedia coccinea (Coral Vine)			
589.		Kennedia prostrata (Scarlet Runner)			
590. 591.		Kuetzingia canaliculata Lachenalia reflexa	Y		
591.		Lachnagrostis filiformis	T		
593.		Lactura serriola (Prickly Lettuce)	Y		
594.		Lagenophora huegelii			

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	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
595.		Lagurus ovatus (Hare's Tail Grass)	Y		
596.		Latrobea tenella			
597. 598.		Laurencia elata Laxmannia ramosa subsp. ramosa			
599.		Laxmannia squarrosa			
600.		Lechenaultia floribunda (Free-flowering Leschenaultia)			
601.	6880	Leonotis leonurus (Lion's Ear)	Y		
602.	42742	Lepidosperma calcicola			
603.		Lepidosperma longitudinale (Pithy Sword-sedge)			
604.		Lepidosperma scabrum			
605. 606.		Leptoceras menziesii Leptomeria pauciflora (Sparse-flowered Currant Bush)			
607.		Lessertia frutescens	Y		
608.		Leucopogon australis (Spiked Beard-heath)			
609.	6405	Leucopogon insularis			
610.	40801	Leucopogon maritimus		P1	
611.		Leucopogon oxycedrus			
612.		Leucopogon parviflorus (Coast Beard-heath)			
613.		Leucopogon propinguus			
614. 615.		Leucopogon propinquus Leucopogon squarrosus subsp. squarrosus			
616.		Limonium sinuatum (Perennial Sea Lavender)	Y		
617.		Liparophyllum capitatum			
618.	7408	Lobelia tenuior (Slender Lobelia)			
619.		Lobelia tenuior subsp. dictyosperma			Y
620.		Lolium multiflorum (Italian Ryegrass)	Y		
621.		Lomandra maritima			
622. 623.		Lomandra micrantha (Small-flower Mat-rush) Lomandra nigricans			
624.		Lomandra preissii			
625.		Lomandra suaveolens			
626.	34736	Lysinema pentapetalum			
627.	5281	Lythrum hyssopifolia (Lesser Loosestrife)	Y		
628.		Macarthuria apetala			
629. 630.		Marianthus paralius	X	Т	
630.		Medicago polymorpha (Burr Medic) Meionectes brownii (Swamp Raspwort)	Y		
632.		Melaleuca cardiophylla (Tangling Melaleuca)			
633.		Melaleuca huegelii (Chenille Honeymyrtle)			
634.	13271	Melaleuca huegelii subsp. huegelii			
635.	5952	Melaleuca preissiana (Moonah)			
636.		Melaleuca rhaphiophylla (Swamp Paperbark)			
637.		Melaleuca seriata			
638. 639.		Melaleuca systena Melaleuca trichophylla			
640.		Melia azedarach (White Cedar)			
641.		Melilotus indicus	Y		
642.	953	Mesomelaena graciliceps			
643.		Mesomelaena pseudostygia			
644.		Microlaena stipoides (Weeping Grass)			
645. 646		Microtis media subsp. media Millotia myosotidifolia			
646. 647.		Minotia myosotidirolla Mirbelia spinosa			
648.		Monoculus monstrosus	Y		
649.		Moraea flaccida (One-leaf Cape Tulip)	Y		
650.		Muehlenbeckia polybotrya			
651.		Myoporum caprarioides (Slender Myoporum)			
652.		Myoporum insulare (Blueberry Tree, boobialla)			
653. 654.		Myriophyllum tillaeoides Nemesia strumosa	V		
655.		Nemesia strumosa Nizymenia conferta	Y		
656.		Nuytsia floribunda (Christmas Tree, Mudja)			
657.		Oenothera drummondii subsp. drummondii	Y		
658.		Olea europaea (Olive)	Y		
659.		Olearia axillaris (Coastal Daisybush)			
660.		Olearia rudis (Rough Daisybush)			
661.		Opercularia vaginata (Dog Weed)			
662. 663.		Orobanche minor (Lesser Broomrape) Orthrosanthus laxus var. laxus (Morning Iris)	Y		
664.		Parietaria debilis (Pellitory)			
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	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
665.	532	Paspalum urvillei (Vasey Grass)	Y		
666.		Paspalum vaginatum (Salt Water Couch)			
667.	30472	Patersonia occidentalis var. occidentalis			
668.	4343	Pelargonium capitatum (Rose Pelargonium)	Y		
669.		Pentameris airoides (False Hairgrass)	Y		
670.		Pericalymma ellipticum var. ellipticum			
671.		Persicaria decipiens	Ň		
672.		Persicaria lapathifolia	Y		
673. 674.		Persoonia saccata (Snottygobble) Petrophile axillaris			
675.		Petrophile brevifolia			
676.		Philotheca spicata (Pepper and Salt)			
677.		Phyla nodiflora var. nodiflora	Y		
678.	4675	Phyllanthus calycinus (False Boronia)			
679.	17794	Phyllanthus tenellus	Y		
680.	2793	Phytolacca octandra (Red Ink Plant)	Y		
681.		Pimelea argentea (Silvery Leaved Pimelea)			
682.		Pimelea calcicola		P3	
683.		Pimelea floribunda			
684.		Pimelea leucantha			
685.		Pimelea sulphurea (Yellow Banjine)			
686. 687.		Pithocarpa pulchella var. melanostigma Pithocarpa pulchella var. pulchella			
688.		Pittosporum ligustrifolium			
689.		Plantago major (Greater Plantain)	Y		
690.		Poa annua (Winter Grass)	Y		
691.		Poa poiformis (Coastal Poa)			
692.	578	Poa porphyroclados			
693.	8175	Podolepis gracilis (Slender Podolepis)			
694.	8179	Podolepis nutans (Nodding Podolepis)			
695.	8184	Podotheca gnaphalioides (Golden Long-heads)			
696.	582	Polypogon monspeliensis (Annual Beardgrass)	Y		
697.		Poranthera ericoides (Heath Poranthera)			
698.		Poranthera microphylla (Small Poranthera)			
699.		Potamogeton drummondii			
700. 701.		Prasophyllum fimbria (Fringed Leek Orchid) Pseudognaphalium luteoalbum (Jersey Cudweed)			
701.		Pteridium esculentum subsp. esculentum			
703.		Pterostylis aff. nana			
704.	12217	Pterostylis sanguinea			
705.		Ptilophora prolifera			
706.	2718	Ptilotus drummondii (Narrowleaf Mulla Mulla)			
707.	11260	Ptilotus drummondii var. drummondii (Pussytail)			
708.	2742	Ptilotus manglesii (Pom Poms, Mulamula)			
709.		Ptilotus sericostachyus subsp. sericostachyus			
710.		Pultenaea reticulata			
711.		Pyrorchis nigricans (Red beaks, Elephants ears)			
712.		Racopilum cuspidigerum var. convolutaceum			
713. 714.		Regelia inops Retama raetam	Y		
714.		Realina faetani Rhadinothamnus anceps	T		
716.		Rhagodia baccata subsp. baccata			
717.		Ricinocarpos undulatus			
718.		Romulea rosea (Guildford Grass)	Y		
719.		Rosulabryum billarderii			
720.	2429	Rumex acetosella (Sorrel)	Y		
721.	40426	Rytidosperma occidentale			
722.	2906	Sagina apetala (Annual Pearlwort)	Y		
723.		Sarcocornia blackiana			
724.		Sarcozona bicarinata		P3	
725.		Scaevola canescens (Grey Scaevola)			
726.		Scaevola crassifolia (Thick-leaved Fan-flower)			
727.		Scaevola globulifera			
728. 729.		Scaevola nitida (Shining Fanflower) Scaevola repens var. angustifolia			
729. 730.		Scaevola repens var. angustitolia Scaevola thesioides subsp. thesioides			
730.		Schinus terebinthifolius	Y		
732.		Schizymenia dubyi			
733.		Schoenoplectus validus (Lake Club-rush)			
734.		Schoenus curvifolius			
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	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
735.	992	Schoenus grandiflorus (Large Flowered Bogrush)			
736.	25884	Senecio pinnatifolius var. latilobus			
737.	8220	Senecio vulgaris (Common Groundsel)	Y		
738.	2909	Silene gallica (French Catchfly)	Y		
739.		Silene nocturna (Mediterranean Catchfly)	Y		
740.		Solanum linnaeanum (Apple of Sodom)	Y		
741.		Solanum lycopersicum (Tomato)	Y		
742. 743.	7022	Solanum nigrum (Black Berry Nightshade) Solanum physalifolium var. nitidibaccatum	Y		
743.	7037	Solanum symonii			
745.		Sonchus oleraceus (Common Sowthistle)	Y		
746.		Sowerbaea laxiflora (Purple Tassels)			
747.		Spinifex hirsutus (Hairy Spinifex)			
748.	27301	Spongoclonium conspicuum			
749.	635	Sporobolus virginicus (Marine Couch)			
750.	4828	Spyridium globulosum (Basket Bush)			
751.		Stackhousia huegelii			
752.		Stellaria media (Chickweed)	Y		
753.		Stenanthemum notiale subsp. chamelum			
754. 755.		Stenopetalum gracile Stylidium adpressum (Trigger-on-stilts)			
755.		Stylidium adpressum (Trigger-Onsuits) Stylidium araeophyllum (Stilt Walker)			
757.		Stylidium brunonianum (Pink Fountain Triggerplant)			
758.		Stylidium cygnorum			
759.		Stylidium diuroides subsp. diuroides			
760.		Stylidium hesperium			
761.	25829	Stylidium neurophyllum (Coastal Plain Triggerplant)			
762.	25800	Stylidium paludicola		P3	
763.	48297	Styphelia filifolia		P3	
764.	15532	Synaphea spinulosa subsp. spinulosa			
765.		Syntrichia antarctica			
766.		Syntrichia pagorum			
767.		Taraxacum khatoonae	Y		
768. 769.		Templetonia retusa (Cockies Tongues) Tersonia cyathiflora (Button Creeper)			
703.		Tetragonia decumbens (Sea Spinach)	Y		
771.		Tetragonia tetragonoides (New Zealand Spinach)			
772.		Tetrapanax papyrifer	Y		Y
773.	1036	Tetraria octandra			
774.	35581	Tetraria sp. Chandala (G.J. Keighery 17055)		P2	
775.	35582	Tetraria sp. Mt Madden (C.D. Turley 40 BP/897)			
776.		Thelymitra fuscolutea (Chestnut Sun Orchid)			
777.		Thelymitra variegata (Queen of Sheba)		P2	
778.		Trachymene pilosa (Native Parsnip)			
779. 780.		Trichostomum eckelianum Tricoryne elatior (Yellow Autumn Lily)			
780.		Trifolium arvense (Hare's Foot Clover)	Y		
782.		Trifolium hirtum (Rose Clover)	Y		
783.		Trifolium resupinatum var. resupinatum	Y		
784.	11665	Trymalium ledifolium var. ledifolium			
785.	8255	Ursinia anthemoides (Ursinia)	Y		
786.		Utricularia australis			
787.		Utricularia dichotoma (Fairy Aprons)			
788.		Vellereophyton dealbatum (White Cudweed)	Y		
789.		Verticordia drummondii (Drummond's Featherflower)			
790. 791.		Verticordia nitens (Morrison Featherflower, Kodjeningara) Verticordia ovalifolia			
791. 792.		Vicia sativa (Common Vetch)	Y		
793.		Vicia sativa subsp. nigra	Y		
794.		Vulpia fasciculata	Y		
795.		Vulpia myuros (Rat's Tail Fescue)	Y		
796.		Wahlenbergia capensis (Cape Bluebell)	Y		
797.	7386	Wahlenbergia gracilenta (Annual Bluebell)			
798.	7388	Wahlenbergia multicaulis			
799.		Waitzia suaveolens (Fragrant Waitzia)			
800.		Washingtonia filifera	Y		
801.		Wurmbea monantha			
802. 803.		Wurmbea pygmaea Xanthium occidentale (Noogoora Burr)	Y		
803.		Xanthium occidentale (Noogoora Burr) Xanthorrhoea preissii (Grass tree, Palga)	Ŷ		
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	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
805.	6289	Xanthosia huegelii			
806.	44861	Xerochrysum macranthum			
807.	2331	Xylomelum occidentale (Woody Pear, Djandin)			
808.	36218	Zygodon menziesii			
Protozoa					
809.	38967	Arcyria incarnata			
810.	38969	Arcyria minuta			
811.	38971	Arcyria occidentalis			Y
812.	38978	Badhamia panicea			
813.	38998	Craterium minutum			
814.	38999	Cribraria argillacea			Y
815.	39020	Didymium difforme			
816.	39057	Perichaena corticalis			
817.	39058	Perichaena depressa			
818.	39059	Perichaena vermicularis			
819.	39077	Physarum straminipes			Y
820.	39094	Trichia affinis			
821.	39098	Trichia favoginea			

- Conservation Codes 7 Rare or likely to become extinct X Presumed extinct 1A Protected under international agreement S Other specially protected fauna 1 Priority 2 3 Priority 2 4 Priority 3 5 Priority 5

¹ For NatureMap's purposes, species flagged as endemic are those whose records are wholely 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.





10 Bermondsey Street West Leederville WA 6007 t (+618) 9388 8360 f (+618) 9381 2360 PO BOX 14, West Perth WA 6872 w 360environmental.com.au e admin@360environmental.com.au

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