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Native Vegetation Clearing Permit Application [Area Permit] - Supporting Documentation

Lot 43 Stanley Road, Wellesley

Prepared for
Peel Resource Recovery Pty Ltd
by Strategen

June 2016

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Native Vegetation Clearing Permit Application [Area Permit] - Supporting Documentation

Lot 43 Stanley Road, Wellesley

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June 2016

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Client: Peel Resource Recovery Pty Ltd

Report Version	Revision No.	Purpose	Strategen author/reviewer	Submitted to Client	
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1. Introduction

1.1 Purpose

This Native Vegetation Clearing Permit (NVCP) application for a purpose permit has been prepared for assessment and approval to clear vegetation at Lot 43 Stanley Road, Wellesley (the site; Figure 1). The NVCP application relates to an area of approximately 0.97 ha of native vegetation proposed to be removed within the Survey area by Peel Resource Recovery Pty Ltd (PRR) to enable expansion of operations at their inert landfill and resource recovery site. The area of proposed clearing is in the northwest of site adjacent to the sorting station and tyre monofil.

1.2 Proposal

As part of ongoing development of the site, PRR is proposing to clear approximately 0.97 ha of native vegetation (Proposed clearing area; Figure 2). PRR are investigating the potential for sand extraction from this area followed by inert waste disposal and resource recovery operations.

1.3 Location, ownership and tenure

The site is located approximately 4.5 km and 13 km northeast of Australind and Bunbury respectively. The site is a 77 ha property owned by Oasis Holdings Pty Ltd. PRR have leased the site for the extraction of sand and operation of an inert landfill and resource recovery facility. The site has been used for these purposes since the early 1990s. Prior to this the site was used for agricultural activities including grazing.

The site is zoned ‘Rural’ under the Greater Bunbury Region Scheme (DoP 2007).

Figure 1: Lot 43 Stanley Road, Wellesley

Scale 1:8,000 at A4

0 50 100 150 200 m

N

Legend

- Survey area
- Lot boundary

Coordinate System: GDA 1994 MGA Zone 50
Note that positional errors may occur in some areas
Date: 14/04/2016
Author: JCrute
Source: Aerial image: ESRI, approx. 2012.

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Figure 2: Proposed clearing area

Scale 1:1,500 at A4

0 20 40 60 80 m

Coordinate System: GDA 1994 MGA Zone 50
Note that positional errors may occur in some areas
Date: 16/06/2016
Author: DWhite
Source: Aerial image: ESRI, approx. 2012; Landgate 2015.

Legend

- Survey area (0.97 ha)
- Proposed clearing area (0.97 ha)
- Lot boundary

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2. Overview of existing environment

2.1 Geology, landform and soils

The Survey area is located within the Swan Coastal Plain which comprises five major geomorphological systems that lie parallel to the coast, namely (from west to east) the Quindalup Dunes, Spearwood Dunes, Bassendean Dunes, Pinjarra Plain and Ridge Hill Shelf (Churchward & McArthur 1980; Gibson et al. 1994). Each major system is composed of further subdivisions in the form of detailed geomorphological units (Churchward & McArthur 1980; Gibson et al. 1994). Beard (1990) describes the Swan Coastal Plain as a low-lying coastal plain, often swampy, with sand hills also containing dissected country rising to the duricrust Dandaragan plateau on Mesozoic, mainly sandy, yellow soils.

The topography of the site has been modified from its natural form as a result of historical sand extraction and landfill activities. Native species have been replanted along areas subject to fill within the Survey area. The Survey area also contains remnant vegetation within an unaltered section of the site. Topographical mapping indicates that the unaltered section of the Survey area lies at approximately 15 m Australian Height Datum (mAHD) (Landgate 2016).

The site is situated on the Bassendean sand soil landscape system which contains sand dunes and sandplains with flats and swamps (AgWA 2003). The Survey area is contained within the Bassendean B1 phase (212Bs_B1) soil landscape subsystem which is described as extremely low to very low relief dunes, undulating sandplain and discrete sand rises with deep bleached grey sands sometimes with a pale yellow B horizon or a weak iron-organic hardpan at depths generally greater than 2 m.

The abovementioned soil descriptions are generally consistent with site-specific observations of subsurface conditions that were recorded during a geotechnical assessment of the site (GHD 2012) (Table 1).

Table 1: Subsurface conditions

Soil classification	Typical depth (m)	Comments
Topsoil	0–0.5	Dark brown, fine to medium grained loamy sand
SAND	0.5-5.5	Grey, fine to medium grained sand
Sandy CLAY	1.2-10.0	Dark grey with occasional mottling
Clayey SAND	7.0-9.0	Dark grey to yellow/brown, fine to medium grained sand
SAND	15-20	Dark grey, fine to coarse grained with black mottling, trace amounts of clay
Sandy CLAY	20-24	Dark grey

A search of the WA Atlas ASS Swan Coastal Plain risk map (Landgate 2016) located two areas classified as Class 1 (High to Moderate risk of ASS occurring within 3 m of natural soil surface) within the site. These two areas comprise a wetland area and the Brunswick River located approximately 500 m east and south of the Survey area respectively. The eastern two thirds of the site is classified as Class 2 (Moderate to Low risk of ASS occurring within 3 m of natural soil surface). The Survey area has not been mapped and therefore has not been assigned a risk rating.

2.2 Hydrology

2.2.1 Surface water

The site lies in the catchment of the Brunswick River which flows into the Collie River prior to discharge to the Leschenault Estuary. Rainfall is anticipated to infiltrate the soil within the site. No standing water was observed within the proposed clearing area at the time of the survey. The Brunswick River runs along the southern boundary of the site and will not be impacted by the proposed clearing.

Geomorphic wetland mapping indicates that the southern portion of the site is occupied by a series of Conservation Category Wetlands (CCW) and Multiple Use Wetlands (MUW) (Landgate 2016). A CCW exists within the eastern portion of the site outside of the existing disturbance area. These wetland areas are situated approximately 500 m to the east and south of the proposed clearing area respectively and the wetland and their associated Environmentally Sensitive Area will not be impacted by the proposed clearing.

2.2.2 Groundwater

Regional aquifer system

The site is situated at the northern margin of the Bunbury trough, a division of the Perth Basin (DoW 2011). The upper formations in which fresh groundwater may occur comprise the superficial, Leederville, Yarragadee and Cockleshell Gully formations (DoW 2011).

The superficial formations are considered unconfined and comprise a relatively thin cover (up to 30 m) of sand, silt, clay and limestone. Groundwater from the superficial formations is generally brackish and bore yields are low, making it unsuitable for town water supply purposes (DoW 2011).

The Leederville formation consists of interbedded sandstone, siltstone and shale with an average thickness of 150 m. Recharge occurs in the south over the Blackwood Plateau, where the formation outcrops. The Leederville aquifer is locally confined in the Australind area, where production bores are situated (DoW 2011).

The Yarragadee formation comprises sandstone interbedded with minor siltstone, shale and mudstone. Locally, the Yarragadee formation is overlain by Bunbury basalt and is confined (DoW 2011). Recharge occurs via vertical leakage from the overlying Leederville formation in the recharge areas on the Blackwood Plateau. Groundwater from the Yarragadee aquifer is of higher quality in the Eaton area than the Australind area and flows in a north to north-westerly direction (DoW 2011).

The Cockleshell Gully formation underlies the Yarragadee formation and is not used for public water supply purposes. Groundwater salinity in the Cockleshell Gully formation is generally brackish to saline in the vicinity of Australind (DoW 2011).

Local groundwater properties

Regional groundwater flow is generally towards the coast, however, groundwater flow at the site is anticipated to flow towards the Brunswick River which runs along the southern boundary of the site. Depth to groundwater beneath the Survey area is anticipated to be greater than six metres below ground level (RPS 2014).

2.3 Vegetation

2.3.1 Regional vegetation

Vegetation occurring within the region was initially mapped at a broad scale (1:1 000 000) by Beard during the 1970s. This dataset has formed the basis of several regional mapping systems, including physiographic regions defined by Beard (1981); System 6 Vegetation Complex mapping undertaken by Heddle et al. (1980); the biogeographical region dataset (Interim Biogeographic Regionalisation for Australia) for Western Australia (DotE 2016a).

Beard (1990) Botanical Subdistrict

The proposed clearing occurs within the Drummond Botanical Subdistrict which is characterised by low *Banksia* woodlands on leached sands; Melaleuca swamps on poorly-drained depressions; and *Eucalyptus gomphocephala* (Tuart), *Eucalyptus marginata* (Jarrah) and *Corymbia calophylla* (Marri) woodlands on less leached soils (Beard 1990).

IBRA subregion

Interim Biogeographic Regionalisation for Australia (IBRA) divides Western Australia into 26 biogeographic regions and 53 subregions based on dominant landscape characteristics of climate, lithology, geology, landform and vegetation (McKenzie et al. 2003). The site is located within the Swan Coastal Plain bioregion, which is dominated by woodlands of *Banksia* and Tuart on sandy soils, Sheoaks on outwash plains and Paperbarks in swampy areas (McKenzie et al. 2003).

System 6 mapping

System 6 mapping refers to vegetation mapping undertaken at a Vegetation Complex scale by Heddle *et al.* (1980). This is the primary source of information used to calculate potential impacts of proposals to clear native vegetation on the Swan Coastal Plain. The Survey area occurs within the Bassendean Complex-Central and South vegetation complex which is described as:

> ranging from woodland of Jarrah-Sheoak-*Banksia* on the sand dunes to low woodland of *Melaleuca* spp. and sedgelands on the low-lying depressions and swamps.

At a finer scale, the Survey area falls within the Bassendean 1000 vegetation system association as defined in Government of Western Australia (2014):

- Medium forest; jarrah-marri / Low woodland; banksia / Low forest; teatree (*Melaleuca* spp.).

The percentage of pre-European extent of this vegetation association on each system is presented in Table 2 and is based on the latest GIS-based estimate undertaken by Department of Parks and Wildlife (Table 2; Parks and Wildlife 2015). Bassendean Complex-Central and South has 25.7% of the pre-European extent remaining on the Swan Coastal Plain and 41% remaining within the Shire of Harvey (Government Parks and Wildlife 2015). The objective of the EPA-endorsed Natural Area Strategy is to achieve a standard level of native vegetation retention of at least 30% of the pre-clearing extent of the ecological communities on the Swan Coastal Plain (EPA 2003). As there is less than 30% of the Bassendean Complex-Central and South remaining on the Swan Coastal Plain, this complex is considered to be potentially regionally significant.

Table 2: Pre-European and current extent of Bassendean Complex-Central and South

Vegetation association	Pre-European extent (ha)	Current extent (ha)	% remaining	Amount proposed to be cleared for Project (ha)	Current Extent Protected for Conservation (ha)	% Current Extent Protected for Conservation
1000 – Bassendean system	88 077	22 636	25.70	0.97 ha (<0.002% of current extent)	1546	1.76

2.3.2 Vegetation Assessment

A vegetation survey was conducted by Strategen within the entire development site on 15 March 2016. Results of the survey are summarised below.

Desktop searches

Database searches of NatureMap, the Parks and Wildlife Threatened Flora Database and the Department of the Environment (DotE) protected matters database were undertaken to determine whether any Threatened or Priority flora species are known from within a 5 km radius of the Survey area. Desktop and database searches identified 15 Threatened and Priority flora species as potentially occurring within the Survey area (Appendix 1). The likelihood of each Threatened/Priority Flora species occurring within the Survey area is summarised in Table 3.

A search of the Parks and Wildlife Threatened Flora Database provided coordinates of known locations of conservation significant flora species within a 5 km radius of the Survey area, based on historical survey data recorded in the area (Figure 3).

No Threatened Ecological Communities (TEC) or Priority Ecological Communities (PEC) were identified as having the potential to occur within the Survey area (Figure 3). The closest PEC identified in proximity to the Survey area was SCP 21c (Low lying *Banksia attenuata* woodlands or shrublands). The outer edge of the Parks and Wildlife buffer for this community is approximately 2 km from the Survey area.

There are no Environmentally Sensitive Areas (ESAs), as listed under the Environmental Protection (Environmentally Sensitive Areas) Notice 2005, located within the Survey area. The nearest ESAs exist approximately 500 m from the Survey area associated with wetland areas (Landgate 2016).

Table 3: Threatened and Priority flora potentially occurring within the Survey area

Species	Conservation status		Description	Potential to occur
	EPBC Act	WC Act / Parks and Wildlife listing		
Andersonia gracilis	**Threatened** - Endangered	Threatened	A slender shrub to 50 cm tall with few, spreading branches. Flowers are pink to pale mauve. Habitat for this species occurs within seasonally damp, black sandy clay flats near swamps.	**Unlikely –** Preferred soil type/habitat does not occur within the Survey area– wetland areas will not be impacted by the proposed clearing.
Caladenia huegelii	**Threatened** – Endangered	Threatened	A slender orchid from 30 to 50 cm tall. One or two striking flowers characterised by a greenish-cream lower petal with a maroon tip. Other petals are cream with red or pink suffusions. Habitat for this species occurs within well-drained, deep sandy soils in low mixed *Banksia*, *Allocasuarina* and Jarrah woodlands.	**Possible -** Preferred soil type/habitat occurs within the Survey area.
Darwinia foetida	**Threatened** – Critically Endangered	Threatened	An erect, spreading shrub to 70 cm tall. Green flowers, visible from October to November. Habitat for this species occurs within wet/winter-damp clay under Myrtaceous shrubland.	**Highly unlikely –** Preferred habitat does not occur within the Survey area as wetland areas will not be impacted by the proposed clearing. Both Western Australian Herbarium (1998) and DotE (2016b) list this species' distribution to be highly restricted within the Muchea area (approximately 70 km north of Perth).
Diuris micrantha	**Threatened** – Vulnerable	Threatened	A slender orchid to 60 cm tall. Yellow flowers with reddish-brown markings measuring 1.3 cm across. Habitat for this species occurs within clay-loam substrates in winter-wet depressions or swamps.	**Unlikely –** Preferred soil type/habitat does not occur within the Survey area– wetland areas will not be impacted by the proposed clearing.
Diuris purdiei	**Threatened** – Endangered	Threatened	A slender orchid to 45 cm tall. Unusually flattened flowers, marked with brown blotches on their under surface. Habitat for this species occurs in areas subject to winter inundation within dense heath with scattered Myrtaceous trees.	**Unlikely –** Preferred soil type/habitat does not occur within the Survey area – wetland areas will not be impacted by the proposed clearing.
Drakaea elastica	**Threatened** – Endangered	Threatened	A slender orchid to 30 cm tall with a prostrate, round to heart shaped leaf. Singular, bright green, glossy flower. Habitat for this species is within bare patches of white sand over dark sandy loams on damp areas.	**Unlikely –** Preferred soil type/habitat does not occur within the Survey area.
Drakaea micrantha	**Threatened** – Vulnerable	Threatened	A tuberous, terrestrial orchid to 30 cm tall. Silvery-grey heart shaped leaf with prominent green veins. Red and yellow singular flower. Habitat for this species occurs within cleared, open sandy patches.	**Possible –** Preferred soil type/habitat occurs within the Survey area.
Synaphea sp. Fairbridge Farm	**Threatened** – Critically Endangered		Forms a dense, clumped shrub to 0.3 m high. Yellow flowers visible in October. Occurs on grey, clayey sand with lateritic pebbles in low woodland areas near winter-wet flats.	**Unlikely –** Preferred soil type/habitat does not occur within the Survey area.
Synaphea stenoloba	**Threatened** – Endangered	Threatened	A caespitose shrub to 45 cm tall. Yellow flowers visible from August to October. Habitat for this species occurs within loamy soils in low-lying areas that are seasonally inundated.	**Unlikely –** Preferred soil type/habitat does not occur within the Survey area – wetland areas will not be impacted by the proposed clearing.
Acacia semitrullata		Priority 4	A slender, erect, pungent shrub to 1.5 m tall. Flowers are cream-white and visible in May to October. Habitat for this species is in white/grey sand sometimes over laterite or clay. This species occurs in sandplains and swampy areas.	**Unlikely –** Preferred soil type/habitat does not occur within the Survey area.

Species	Conservation status		Description	Potential to occur
	EPBC Act	WC Act / Parks and Wildlife listing		
Dillwynia dillwynioides		Priority 3	A decumbent or erect, slender shrub to 1.2 m tall. Flowers are red and yellow/orange and visible in August to December. Habitat for this species is in winter-wet depressions and sandy soils.	**Unlikely –** Preferred soil type/habitat does not occur within the Survey area.
Lasiopetalum membranaceum		Priority 3	Multi-stemmed shrub to 1 m high. Occurs on sandy rises and coastal dunes on well drained, brown sand over yellow sand in association with *Banksia attenuata*.	**Unlikely –** Preferred soil type/habitat does not occur within the Survey area.
Pterostylis frenchii		Priority 2	Tuberous herb to 0.35 m high. Occurs on white sand in association with Kunzea in Marri forest.	**Unlikely –** Preferred soil type/habitat does not occur within the Survey area.
Pultenaea skinneri		Priority 4	This species occurs in grey sandy areas adjacent to winter-wet depressions and swamplands in association with woodland of *Agonis flexuosa*, *Banksia attenuata* and Jarrah.	**Unlikely –** Preferred soil type/habitat does not occur within the Survey area.
Verticordia attenuata		Priority 3	Occurs on grey sands, sometimes in association with winter-wet depressions, but can also occur on dry, grey sands. Associated species include woodland of Jarrah, Marri and *Banksia attenuata*.	**Unlikely –** Preferred soil type/habitat does not occur within the Survey area.

Source: DotE 2016b; Western Australian Herbarium 1998; Brown *et al.* 1998

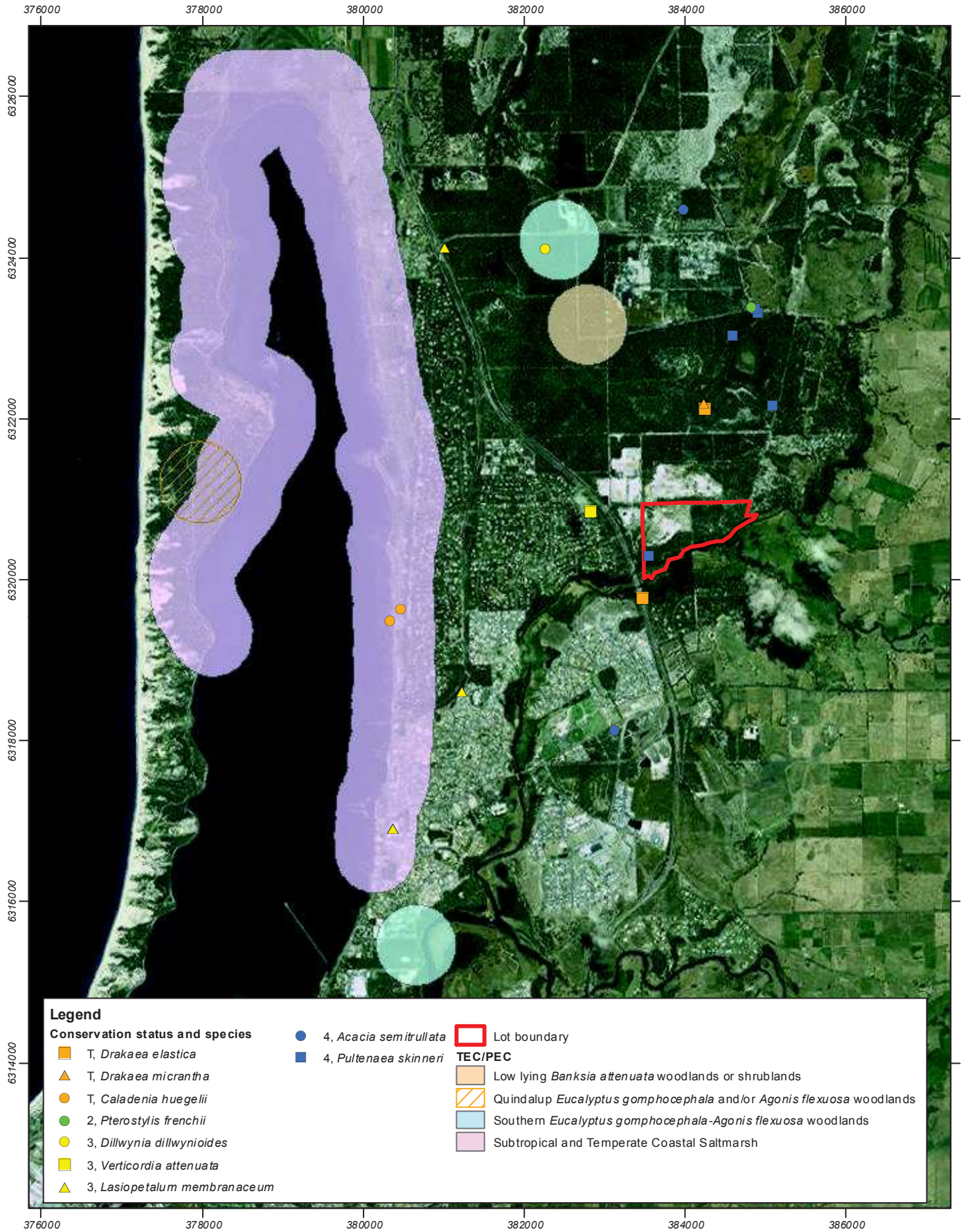

Figure 3: Location of Threatened and Priority Flora and TECs PECs surrounding the site

Scale 1:65,000 at A4

0 500 1,000 1,500 m

N

Coordinate System: GDA 1994 MGA Zone 50
Note that positional errors may occur in some areas
Date: 31/05/2016
Author: JCrute
Source: Aerial image: ESRI, approx. 2012. Flora & TEC/PEC: DPAW 2016.

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Conservation significant flora species potentially occurring in the Survey area that may have been missed due to the survey timing include the two Threatened orchid species; *Caladenia huegelii* and *Drakaea micrantha* which are diminutive in stature and are at their most visible when in flower. Given the disturbance history of the site and the size of the impact area, the potential for the species to occur is considered low. All other Threatened and Priority flora species are considered unlikely to occur within the proposed action area.

Flora

A total of 12 native vascular plant taxa from 8 plant families were recorded within the Survey area. The majority of taxa were recorded within the Proteaceae (3 taxa) and Myrtaceae (3 taxa) families.

No Threatened flora species as listed under section 178 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or pursuant to Schedule 1 of the *Wildlife Conservation Act 1950* (WC Act) and as listed by Parks and Wildlife (2016c) or Priority flora species as listed by Western Australian Herbarium (1998-) were recorded within the Survey area.

Vegetation types

Vegetation within the Survey area has experienced varying levels of degradation over time. The central portion of the Survey area was observed to be in the best condition and is surrounded by basic fencing. All other areas appear to have been historically cleared and are experiencing natural regeneration by native and invasive species.

Two vegetation types (VTs) were defined and mapped within the site as summarised in Table 3 and displayed in Figure 4. The total area occupied by the VTs was 0.66 ha, and the dominant VT was VT 1 which can be broadly described as *Stirlingia latifolia*, *Xanthorrhoea gracilis*, *Dasypogon bromeliifolius* and *Melaleuca viminea* very sparse low open shrubland with emergent *Eucalyptus marginata* and *Xylomelum occidentale* trees on sandy loam soils in areas which have been historically cleared. Parkland cleared areas comprised of native trees over completely cleared understoreys were also mapped within the Survey area and comprised 0.31 ha.

The two VTs, combined with native vegetation within Parkland cleared areas amount to 0.97 ha of native vegetation within the Survey area.

No TECs or PECs were identified within the Survey area.

Table 4: Vegetation Types

Vegetation Type	Description	Area (ha) within the Survey area	Percentage of Survey area (%)
1	*Stirlingia latifolia, Xanthorrhoea gracilis, Dasypogon bromeliifolius* and *Melaleuca viminea* very sparse low open shrubland with emergent *Eucalyptus marginata* and *Xylomelum occidentale* trees on sandy loam soils in areas which have been historically cleared.	0.44	45.36
2	*Eucalyptus marginata, Banksia attenuata* and *Nuytsia floribunda* open woodland over *Xylomelum occidentale* and *Kunzea glabrescens* tall open shrubland over *Stirlingia latifolia, Xanthorrhoea gracilis* and *Conostephium pendulum* low shrubland on sandy loam soils.	0.23	22.68
P	Parkland cleared areas comprised of *Eucalyptus gomphocephala* and *Agonis flexuosa* trees over cleared areas.	0.30	31.96

Vegetation condition

The Survey area shows signs of having been degraded for a long period of time. Industrial works within the Survey area and surrounds has led to degradation of vegetation with impacts including:

- invasive species
- clearing of vegetation.

Vegetation condition within the Survey area ranged from Degraded to Good - Very Good (Keighery 1994; Table 5; Figure 5). The vegetation condition scale outlined in Keighery (1994) is included in Appendix 2.

Table 5: Area (ha) covered by each vegetation condition category within the Survey area

Vegetation Condition	Area (ha)	Percentage of the Survey area (%)
Good – Very Good	0.23	23.71
Degraded	0.74	76.29
Total	**0.97**	**100**

Figure 4: Vegetation types

Scale 1:1,500 at A4

0 10 20 30 40 50 m

N

Coordinate System: GDA 1994 MGA Zone 50
Note that positional errors may occur in some areas
Date: 31/05/2016
Author: DWhite
Source: Aerial image: Landgate 11/2015. Background aerial: ESRI, approx. 2012.

Legend

- Survey area
- Proposed clearing area
- Lot boundary

Vegetation type

- Parkland Cleared
- VT1
- VT2

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Figure 5: Vegetation condition

Scale 1:1,500 at A4

0 10 20 30 40 50 m

N

Coordinate System: GDA 1994 MGA Zone 50
Note that positional errors may occur in some areas
Date: 31/05/2016
Author: DWhite
Source: Aerial image: Landgate 11/2015. Background aerial: ESRI, approx. 2012.

Legend

- Survey area
- Proposed clearing area
- Lot boundary

Vegetation condition

- Degraded
- Good to Very Good

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2.4 Vegetation degradation

2.4.1 Weeds

A total of two introduced (exotic) taxa were recorded within the Survey area during the 2016 survey:

- **Conyza bonariensis*
- **Avena barbata.*

None of these species are listed as a Declared Plant species in Western Australia pursuant to Section 22 of the *Biosecurity and Agriculture Management Act 2007* (BAM Act; DAFWA 2016).

2.4.2 Dieback

A targeted Phytophora survey was undertaken in July 2014 to determine any presence of dieback within, or in the vicinity of another expansion area of approximately 0.7 ha within the site (Glevan 2014). The survey concluded that the majority (85.7%) of the phytophora Survey area was observed to be un-infested, and one relatively small area (14.3%) was classified as uninterpretable.

The Survey area has not been surveyed for dieback. A Dieback Management Plan has been prepared for the site to manage the potential spread of dieback.

2.5 Fauna

Database searches of NatureMap and the DotE protected matters database were undertaken to determine whether any Threatened or Priority flora species are known from within a 5 km radius of the Survey area. Desktop and database searches identified 50 Threatened and Priority flora species as potentially occurring within the broader area as outlined in Appendix 1. Of these species, four have the potential to be present based on presence of suitable habitat within the Survey area. These species are:

- *Calyptorhynchus banksii naso* (Forest Red-tailed Black Cockatoo): Vulnerable (EPBC Act), Threatened (WC Act), recorded previously at the site (Harewood 2012), may utilise the site for foraging
- *Pseudocheirus occidentalis* (Western Ringtail Possum): Vulnerable (EPBC Act), Schedule 1 (WC Act), marginal regrowth habitat, species is known to utilise some areas in the general vicinity
- *Falsistrellus mackenziei* (Western False Pipistrelle): Priority 4 (WC Act), recorded previously at Kemerton, may utilise the site for foraging
- *Merops ornatus* (Rainbow Bee-eater): Schedule 3 (WC Act), Migratory (EPBC Act), species are common seasonal visitors to South West Region and during summer months, a small number of individuals of this species are likely to occasionally forage and roost on site, sandy ground conditions may be suitable for construction of breeding burrows.

3. Assessment against the ten clearing principles

An assessment of the proposed clearing against the ten clearing principles outlined in Schedule 5 of the EP Act is provided in Table 6. This assessment demonstrates that the proposed removal of 0.97 ha of native vegetation is not at variance with the any of the clearing principles. On this basis, PRR anticipates that the proposed clearing of 0.97 ha of native vegetation can occur.

Table 6: Assessment against the ten clearing principles

Principle	Assessment	Conclusion
Native vegetation should not be cleared if it comprises a high level of biological diversity.	The Proposed clearing area does not support a high level of biological diversity when compared to more substantial areas of better condition and managed land in the vicinity including Kemerton and Leschenault. Although the Proposed clearing area is located in the potentially regionally significant Bassendean Complex-Central and South, the Survey area has been subject to previous and ongoing disturbances from clearing, past agricultural use and waste disposal activities. This has reduced the overall biodiversity value of the Proposed clearing area, which was found to comprise only 12 native flora and fauna species and two introduced species (identified during the site survey), compared to the 120 native taxa identified in the EPA assessment of the local area. Ongoing disturbances to the Survey area is expected to compromise the existing level of diversity through ongoing threats from weeds, pests and plant disease. Therefore, the Survey area is not considered to be of significant value.	Removal of vegetation within the Proposed clearing area is not considered to be at variance with this principle as it will not result in the removal of vegetation comprising a high level of biological diversity.
Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	The Proposed clearing area shows signs of being degraded over a long period of time by past agricultural land use and invasive weeds. The Proposed clearing area is surrounded by waste disposal areas and roads. Clearing of less than 0.66 ha of potential Forest Red-tailed Black Cockatoo foraging habitat will occur as a result of the proposed development. While Forest Red-tailed Black Cockatoo are likely to forage in the Proposal area, habitat is unlikely to be significant given the sparse canopy. No significant black cockatoo habitat trees were present.	Removal of vegetation within the Proposed clearing area is not considered to be at variance with this principle. Although the proposed clearing area contains known habitat species for black cockatoos, removal of vegetation will result in the loss of a negligible amount of foraging and potential roosting habitat. Additionally, clearing will not result in further habitat fragmentation due to the location of the proposed clearing area surrounded by waste disposal areas and roads.
Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	No rare flora was identified in the flora survey. Two Threatened orchid species; *Caladenia huegelii* and *Drakaea micrantha* have the potential to occur based on potential habitat being present. However, given the disturbance history of the site and the size of the impact area, the potential for rare species to occur is considered low.	Removal of vegetation within the Proposed clearing area is not considered to be at variance with this principle as it is unlikely that any rare flora are present.
Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.	No Threatened or Priority Ecological Communities are known from within the proposed clearing area (Parks and Wildlife 2016a, Parks and Wildlife 2016b).	Removal of vegetation within the Proposed clearing area is not considered to be at variance with this principle as it will not directly impact, or affect the function of, any Threatened or Priority Ecological Community.

Principle	Assessment	Conclusion
Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.	A total of 0.97 ha of vegetation is proposed to be cleared within an area that has historically been disturbed by agricultural activities and is currently surrounded by waste disposal activities and roads.	Removal of vegetation within the Proposed clearing area is not considered to be at variance with this principle as it will not result in the removal of a significant remnant of vegetation.
Native vegetation should not be cleared if it is growing in or in association with a watercourse or wetland.	Vegetation within the proposed clearing area is not growing in, or in association with, an environment associated with a watercourse or wetland.	Removal of vegetation within the Proposed clearing area is not considered to be at variance with this principle as vegetation within the proposed clearing is not part of, or in association with, a watercourse or wetland.
Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	The proposed clearing will affect a small amount of vegetation. The proposed clearing area is highly disturbed and is alongside existing infrastructure. PRR employs standard management procedures during construction and operational activities that include measures to minimise land degradation such as erosion.	Removal of vegetation within the Proposed clearing area is not considered to be at variance with this principle, as the small amount of vegetation to be cleared is unlikely to cause any appreciable land degradation.
Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.	The proposed clearing area is located approximately 500 m from the nearest CCW. The proposed clearing will not impact on values within these CCW due to the small size of the proposed clearing and distance from these wetland areas.	Removal of vegetation within the Proposed clearing area is not considered to be at variance with this principle, as the small amount of proposed clearing and distance from these wetlands would not impact on the environmental values of the conservation areas.
Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.	No surface water features exist within the proposed area and groundwater is located greater than six m below ground level.	Removal of vegetation within the proposed clearing area is not considered to be at variance with this principle, as the proposed clearing of native vegetation will affect a relatively small area (0.97 ha). Furthermore, the proposed clearing is unlikely to have any impact on the quality of surface water or groundwater.
Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the intensity of flooding.	The proposed clearing will affect a small amount of vegetation and is not part of, or associated with, a flood management zone, a drainage basin or creek line.	Removal of vegetation within the Proposed clearing area is not considered to be at variance with this principle, as the area to be cleared is negligible, and is not expected to cause or exacerbate flooding in the area.

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Appendix 1
Desktop assessment results (Parks and Wildlife 2007-, DotE 2016)

NatureMap
Mapping Western Australia's biodiversity

NatureMap Species Report

Created By Guest user on 29/03/2016

Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 115° 45' 01" E,33° 14' 44" S
Buffer 5km

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
1.	15466	*Acacia applanata*			
2.	3374	*Acacia huegelii*			
3.	3502	*Acacia pulchella (Prickly Moses)*			
4.	30036	*Acacia saligna subsp. stolonifera*			
5.	3537	*Acacia semitrullata*		P4	
6.	3557	*Acacia stenoptera (Narrow Winged Wattle)*			
7.	3602	*Acacia willdenowiana (Grass Wattle)*			
8.	24260	*Acanthiza apicalis (Broad-tailed Thornbill, Inland Thornbill)*			
9.	24261	*Acanthiza chrysorrhoa (Yellow-rumped Thornbill)*			
10.	24262	*Acanthiza inornata (Western Thornbill)*			
11.	24560	*Acanthorhynchus superciliosus (Western Spinebill)*			
12.	25536	*Accipiter fasciatus (Brown Goshawk)*			
13.	25755	*Acrocephalus australis (Australian Reed Warbler)*			
14.	1790	*Adenanthos meisneri*			
15.	1791	*Adenanthos obovatus (Basket Flower)*			
16.	5316	*Agonis flexuosa (Peppermint, Wonil)*			
17.	17202	*Agonis flexuosa var. flexuosa*			
18.	184	*Aira caryophyllea (Silvery Hairgrass)*	Y		
19.	198	*Amphipogon laguroides*			
20.		*Aname mainae*			
21.	24312	*Anas gracilis (Grey Teal)*			
22.	24313	*Anas platyrhynchos (Mallard)*			
23.	24315	*Anas rhynchotis (Australasian Shoveler)*			
24.	24316	*Anas superciliosa (Pacific Black Duck)*			
25.	25553	*Anhinga melanogaster (Darter)*			
26.		*Anhinga novaehollandiae*			
27.	1409	*Anigozanthos humilis (Catspaw)*			
28.	1411	*Anigozanthos manglesii (Mangles Kangaroo Paw, Kurulbrang)*			
29.	17455	*Anredera cordifolia*	Y		
30.	24561	*Anthochaera carunculata (Red Wattlebird)*			
31.	24562	*Anthochaera lunulata (Western Little Wattlebird)*			
32.	6210	*Apium annuum*			
33.	24285	*Aquila audax (Wedge-tailed Eagle)*			
34.	25558	*Ardea ibis (Cattle Egret)*		IA	
35.	41324	*Ardea modesta (Eastern Great Egret)*		IA	
36.	24340	*Ardea novaehollandiae (White-faced Heron)*			
37.	24341	*Ardea pacifica (White-necked Heron)*			
38.		*Argiope protensa*			
39.	25566	*Artamus cinereus (Black-faced Woodswallow)*			
40.	7851	*Asteridea pulverulenta (Common Bristle Daisy)*			
41.	6323	*Astroloma ciliatum (Candle Cranberry)*			
42.	6334	*Astroloma pallidum (Kick Bush)*			
43.	2462	*Atriplex hypoleuca*			
44.	17240	*Austrostipa flavescens*			
45.	17245	*Austrostipa mollis*			
46.	24318	*Aythya australis (Hardhead)*			
47.		*Backobourkia brounii*			
48.	1800	*Banksia attenuata (Slender Banksia, Piara)*			
49.	1819	*Banksia grandis (Bull Banksia, Pulgarla)*			
50.	1822	*Banksia ilicifolia (Holly-leaved Banksia)*			
51.		*Barnardius zonarius*			
52.	3165	*Billardiera variifolia*			
53.	24319	*Biziura lobata (Musk Duck)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
54.	4438	*Boronia ramosa*			
55.	3710	*Bossiaea eriocarpa (Common Brown Pea)*			
56.	30142	*Brachyloma preissii subsp. obtusifolium*			
57.	244	*Briza maxima (Blowfly Grass)*	Y		
58.	245	*Briza minor (Shivery Grass)*	Y		
59.	248	*Bromus catharticus (Prairie Grass)*	Y		
60.	249	*Bromus diandrus (Great Brome)*	Y		
61.	250	*Bromus hordeaceus (Soft Brome)*	Y		
62.	25716	*Cacatua sanguinea (Little Corella)*			
63.	1276	*Caesia micrantha (Pale Grass Lily)*			
64.	1277	*Caesia occidentalis*			
65.	1592	*Caladenia flava (Cowslip Orchid)*			
66.	15352	*Caladenia georgei*			
67.	1596	*Caladenia huegelii (Grand Spider Orchid)*		T	
68.	1599	*Caladenia latifolia (Pink Fairy Orchid)*			
69.	17760	*Caladenia nobilis*			
70.		*Caladenia ovata*			Y
71.	2845	*Calandrinia brevipedata (Short-stalked Purslane)*			
72.	24779	*Calidris acuminata (Sharp-tailed Sandpiper)*		IA	
73.	24784	*Calidris ferruginea (Curlew Sandpiper)*		T	
74.	24788	*Calidris ruficollis (Red-necked Stint)*		IA	
75.	24789	*Calidris subminuta (Long-toed Stint)*		IA	
76.	27628	*Caloplaca erythrosticta*			
77.	25717	*Calyptorhynchus banksii (Red-tailed Black-Cockatoo)*			
78.	24731	*Calyptorhynchus banksii subsp. naso (Forest Red-tailed Black-Cockatoo)*		T	
79.	24733	*Calyptorhynchus baudinii (Baudin's Cockatoo (long-billed black-cockatoo), Baudin's Cockatoo)*		T	
80.	24734	*Calyptorhynchus latirostris (Carnaby's Cockatoo (short-billed black-cockatoo), Carnaby's Cockatoo)*		T	
81.		*Calyptorhynchus sp.*			
82.	2957	*Cassytha racemosa (Dodder Laurel)*			
83.	1742	*Casuarina obesa (Swamp Sheoak, Kuli)*			
84.		*Catasarcus bilineatus*			
85.		*Chalcopteroides puncticollis*			
86.	24186	*Chalinolobus gouldii (Gould's Wattled Bat)*			
87.	1280	*Chamaescilla corymbosa (Blue Squill)*			
88.	24373	*Charadrius melanops (Black-fronted Dotterel)*			
89.	24321	*Chenonetta jubata (Australian Wood Duck, Wood Duck)*			
90.	24980	*Christinus marmoratus (Marbled Gecko)*			
91.		*Chroicocephalus novaehollandiae*			
92.	25601	*Chrysococcyx lucidus (Shining Bronze Cuckoo)*			
93.	27662	*Chrysothrix candelaris*			
94.	41264	*Chrysothrix xanthina*			
95.	24288	*Circus approximans (Swamp Harrier)*			
96.	24774	*Cladorhynchus leucocephalus (Banded Stilt)*			
97.	44593	*Coleonema pulchellum*	Y		
98.	25675	*Colluricincla harmonica (Grey Shrike-thrush)*			
99.	4564	*Comesperma virgatum (Milkwort)*			
100.	15607	*Conospermum acerosum subsp. acerosum*			
101.	15611	*Conospermum stoechadis subsp. stoechadis (Common Smokebush)*			
102.	6348	*Conostephium pendulum (Pearl Flower)*			
103.	6349	*Conostephium preissii*			
104.	1418	*Conostylis aculeata (Prickly Conostylis)*			
105.	11826	*Conostylis aculeata subsp. aculeata*			
106.	12109	*Conostylis aculeata subsp. preissii*			
107.	1436	*Conostylis juncea*			
108.	25568	*Coracina novaehollandiae (Black-faced Cuckoo-shrike)*			
109.	277	*Cortaderia selloana (Pampas Grass)*	Y		
110.	25592	*Corvus coronoides (Australian Raven)*			
111.	1285	*Corynotheca micrantha (Sand Lily)*			
112.	7947	*Cotula turbinata (Funnel Weed)*	Y		
113.	25595	*Cracticus tibicen (Australian Magpie)*			
114.	25596	*Cracticus torquatus (Grey Butcherbird)*			
115.	3137	*Crassula colorata (Dense Stonecrop)*			
116.		*Crepidotus sp.*			
117.	25399	*Crinia glauerti (Clicking Frog)*			
118.	13484	*Cryptandra arbutiflora var. tubulosa*			
119.	4802	*Cryptandra mutila*			
120.	30893	*Cryptoblepharus buchananii*			
121.	1627	*Cryptostylis ovata (Slipper Orchid)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
122.	25047	*Ctenotus impar*			
123.	24322	*Cygnus atratus (Black Swan)*			
124.	10916	*Cyrtostylis huegelii*			
125.	30901	*Dacelo novaeguineae (Laughing Kookaburra)*	Y		
126.	7454	*Dampiera linearis (Common Dampiera)*			
127.	1218	*Dasypogon bromeliifolius (Pineapple Bush)*			
128.	24092	*Dasyurus geoffroii (Chuditch, Western Quoll)*		T	
129.	6218	*Daucus glochidiatus (Australian Carrot)*			
130.	3807	*Daviesia divaricata (Marno)*			
131.	306	*Dichelachne crinita (Longhair Plumegrass)*			
132.	1287	*Dichopogon capillipes*			
133.	3863	*Dillwynia dillwynioides*		P3	
134.	3867	*Dipogon lignosus (Dolichos Pea)*	Y		
135.	11049	*Diuris corymbosa*			
136.		*Diuris sp.*			
137.	1639	*Drakaea elastica (Glossy-leaved Hammer Orchid)*		T	
138.	11156	*Drakaea livida*			
139.	13635	*Drakaea micrantha*		T	
140.	24470	*Dromaius novaehollandiae (Emu)*			
141.	3095	*Drosera erythrorhiza (Red Ink Sundew)*			
142.	3118	*Drosera pallida (Pale Rainbow)*			
143.	3131	*Drosera stolonifera (Leafy Sundew)*			
144.	25100	*Egernia napoleonis*			
145.		*Egretta garzetta*			
146.		*Egretta novaehollandiae*			
147.	347	*Ehrharta calycina (Perennial Veldt Grass)*	Y		
148.		*Elanus axillaris*			
149.		*Elseyornis melanops*			
150.	1643	*Elythranthera brunonis (Purple Enamel Orchid)*			
151.		*Eolophus roseicapillus*			
152.	24567	*Epthianura albifrons (White-fronted Chat)*			
153.	379	*Eragrostis elongata (Clustered Lovegrass)*			
154.	1646	*Eriochilus dilatatus (White Bunny Orchid)*			
155.	15412	*Eriochilus dilatatus subsp. multiflorus*			
156.		*Eriochilus sp.*			
157.	4332	*Erodium botrys (Long Storksbill)*	Y		
158.	24379	*Erythrogonys cinctus (Red-kneed Dotterel)*			
159.	5615	*Eucalyptus decipiens (Limestone Marlock, Moit)*			
160.	5643	*Eucalyptus falcata (Silver Mallet, Dulyumuk)*			
161.	5708	*Eucalyptus marginata (Jarrah, Djara)*			
162.	3872	*Euchilopsis linearis (Swamp Pea)*			
163.	25622	*Falco cenchroides (Australian Kestrel)*			
164.	25624	*Falco peregrinus (Peregrine Falcon)*		S	
165.	24189	*Falsistrellus mackenziei (Western False Pipistrelle)*		P4	
166.	11445	*Ferraria crispa subsp. crispa*	Y		
167.	27748	*Flavoparmelia rutidota*			
168.	18392	*Freesia alba x leichtlinii*	Y		
169.	25727	*Fulica atra (Eurasian Coot)*			
170.	24761	*Fulica atra subsp. australis (Eurasian Coot)*			
171.	31532	*Fumaria muralis subsp. muralis*	Y		
172.	25729	*Gallinula tenebrosa (Dusky Moorhen)*			
173.	24763	*Gallinula tenebrosa subsp. tenebrosa (Dusky Moorhen)*			
174.	24764	*Gallinula ventralis (Black-tailed Native-hen)*			
175.	25730	*Gallirallus philippensis (Buff-banded Rail)*			
176.	25404	*Geocrinia leai (Ticking Frog)*			
177.	4337	*Geranium dissectum (Cutleaf Cranesbill)*	Y		
178.	4340	*Geranium retrorsum*			
179.	4341	*Geranium solanderi (Native Geranium)*			
180.	25530	*Gerygone fusca (Western Gerygone)*			
181.	3948	*Gompholobium capitatum*			
182.	10909	*Gompholobium confertum*			
183.	3954	*Gompholobium polymorphum*			
184.	3957	*Gompholobium tomentosum (Hairy Yellow Pea)*			
185.	6161	*Gonocarpus pithyoides*			
186.	24443	*Grallina cyanoleuca (Magpie-lark)*			
187.	24487	*Haematopus longirostris (Pied Oystercatcher)*			
188.	2197	*Hakea prostrata (Harsh Hakea)*			
189.	24293	*Haliaeetus leucogaster (White-bellied Sea-Eagle)*		IA	
190.	24295	*Haliastur sphenurus (Whistling Kite)*			
191.	3961	*Hardenbergia comptoniana (Native Wisteria)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
192.	25410	*Heleioporus eyrei (Moaning Frog)*			
193.	3016	*Heliophila pusilla*	Y		
194.	6839	*Hemiandra pungens (Snakebush)*			
195.	25119	*Hemiergis quadrilineata*			
196.		*Heterodermia sp.*			
197.	5117	*Hibbertia cuneiformis (Cutleaf Hibbertia)*			
198.	5135	*Hibbertia hypericoides (Yellow Buttercups)*			
199.	5162	*Hibbertia racemosa (Stalked Guinea Flower)*			
200.	5173	*Hibbertia subvaginata*			
201.	5176	*Hibbertia vaginata*			
202.	25734	*Himantopus himantopus (Black-winged Stilt)*			
203.	24491	*Hirundo neoxena (Welcome Swallow)*			
204.		*Hogna crispipes*			
205.	6222	*Homalosciadium homalocarpum*			
206.	3966	*Hovea pungens (Devil's Pins, Puyenak)*			
207.	12859	*Hovea trisperma var. trisperma*			
208.	12741	*Hyalosperma cotula*			
209.	5216	*Hybanthus calycinus (Wild Violet)*			
210.	5221	*Hybanthus floribundus*			
211.	24215	*Hydromys chrysogaster (Water-rat)*		P4	
212.		*Hydroprogne caspia*			
213.	8086	*Hypochaeris glabra (Smooth Catsear)*	Y		
214.	9352	*Hypochaeris radicata (Flat Weed)*	Y		
215.	1070	*Hypolaena exsulca*			
216.		*Iridomyrmex sp.*			
217.	1531	*Iris germanica (Flag Iris)*	Y		
218.	917	*Isolepis marginata (Coarse Club-rush)*			
219.	24153	*Isoodon obesulus subsp. fusciventer (Quenda, Southern Brown Bandicoot)*		P5	
220.	7396	*Isotoma hypocrateriformis (Woodbridge Poison)*			
221.	3992	*Isotropis cuneifolia (Granny Bonnets)*			
222.	4012	*Jacksonia furcellata (Grey Stinkwood)*			
223.	11922	*Juncus kraussii subsp. australiensis*			
224.		*Kangarosa properipes*			
225.	4037	*Kennedia coccinea (Coral Vine)*			
226.	4044	*Kennedia prostrata (Scarlet Runner)*			
227.	5832	*Kunzea ericifolia (Spearwood, Pondil)*			
228.	3669	*Labichea punctata (Lance-leaved Cassia)*			
229.		*Laetesia mollita*			
230.		*Lampona cylindrata*			
231.	5038	*Lasiopetalum membranaceum*		P3	
232.		*Lentinellus hepatotrichus*			
233.	925	*Lepidosperma angustatum*			
234.	931	*Lepidosperma drummondii*			
235.	944	*Lepidosperma scabrum*			
236.		*Lepidosperma sp.*			
237.	945	*Lepidosperma squamatum*			
238.	1653	*Leporella fimbriata (Hare Orchid)*			
239.	2342	*Leptomeria cunninghamii*			
240.	2350	*Leptomeria pauciflora (Sparse-flowered Currant Bush)*			
241.	25131	*Lerista distinguenda*			
242.	25133	*Lerista elegans*			
243.	6374	*Leucopogon conostephioides*			
244.	6375	*Leucopogon cordatus*			
245.	6436	*Leucopogon propinquus*			
246.	6445	*Leucopogon squarrosus*			
247.	7677	*Levenhookia stipitata (Common Stylewort)*			
248.	25005	*Lialis burtonis*			
249.	25661	*Lichmera indistincta (Brown Honeyeater)*			
250.	30932	*Limosa lapponica (Bar-tailed Godwit)*		IA	
251.	25378	*Litoria adelaidensis (Slender Tree Frog)*			
252.		*Lobelia sp.*			
253.	7408	*Lobelia tenuior (Slender Lobelia)*			
254.	6511	*Logania serpyllifolia*			
255.	13128	*Logania serpyllifolia subsp. angustifolia*			
256.	1223	*Lomandra caespitosa (Tufted Mat Rush)*			
257.	1228	*Lomandra hermaphrodita*			
258.	1232	*Lomandra micrantha (Small-flower Mat-rush)*			
259.	1234	*Lomandra nigricans*			
260.	1239	*Lomandra preissii*			
261.	1246	*Lomandra suaveolens*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
262.	1092	*Loxocarya cinerea*			
263.	4065	*Lupinus angustifolius (Narrowleaf Lupin)*	Y		
264.		*Lycidas michaelseni*			
265.	1097	*Lyginia barbata*			
266.	18049	*Lyginia imberbis*			
267.	2839	*Macarthuria australis*			
268.	24132	*Macropus fuliginosus (Western Grey Kangaroo)*			
269.	85	*Macrozamia riedlei (Zamia, Djiridji)*			
270.	24326	*Malacorhynchus membranaceus (Pink-eared Duck)*			
271.	25654	*Malurus splendens (Splendid Fairy-wren)*			
272.	17677	*Meeboldina roycei*			
273.		*Meeboldina roycei MS*			
274.	25758	*Megalurus gramineus (Little Grassbird)*			
275.	5900	*Melaleuca cuticularis (Saltwater Paperbark)*			
276.	5952	*Melaleuca preissiana (Moonah)*			
277.	5959	*Melaleuca rhaphiophylla (Swamp Paperbark)*			
278.	5980	*Melaleuca thymoides*			
279.	4785	*Melianthus major*	Y		
280.		*Melobasis lathami*			
281.	24598	*Merops ornatus (Rainbow Bee-eater)*		IA	
282.		*Microcarbo melanoleucos*			
283.	485	*Microlaena stipoides (Weeping Grass)*			
284.		*Microtis sp.*			
285.	8106	*Millotia tenuifolia (Soft Millotia)*			
286.	4100	*Mirbelia spinosa*			
287.		*Missulena granulosa*			
288.		*Missulena occatoria*			
289.		*Mituliodon tarantulinus*			
290.	4666	*Monotaxis occidentalis*			
291.	25191	*Morethia lineoocellata*			
292.	11019	*Narcissus papyraceus*	Y		
293.	25248	*Neelaps bimaculatus (Black-naped Snake)*			
294.	24738	*Neophema elegans (Elegant Parrot)*			
295.		*Nicodamus mainae*			
296.	25748	*Ninox novaeseelandiae (Boobook Owl)*			
297.	24798	*Numenius madagascariensis (Eastern Curlew)*		T	
298.	2401	*Nuytsia floribunda (Christmas Tree, Mudja)*			
299.	25564	*Nycticorax caledonicus (Rufous Night Heron)*			
300.	24194	*Nyctophilus geoffroyi (Lesser Long-eared Bat)*			
301.	24195	*Nyctophilus gouldi (Gould's Long-eared Bat)*			
302.		*Ogyris idmo*			
303.	7348	*Opercularia hispidula (Hispid Stinkweed)*			
304.	7122	*Orobanche minor (Lesser Broomrape)*	Y		
305.	24085	*Oryctolagus cuniculus (Rabbit)*	Y		
306.	4348	*Oxalis caprina*	Y		
307.	4355	*Oxalis perennans*			
308.	4356	*Oxalis pes-caprae (Soursob)*	Y		
309.	24328	*Oxyura australis (Blue-billed Duck)*		P4	
310.	25679	*Pachycephala pectoralis (Golden Whistler)*			
311.	25680	*Pachycephala rufiventris (Rufous Whistler)*			
312.	1667	*Paracaleana nigrita (Flying Duck Orchid)*			
313.	25681	*Pardalotus punctatus (Spotted Pardalote)*			
314.	25682	*Pardalotus striatus (Striated Pardalote)*			
315.	1762	*Parietaria debilis (Pellitory)*			
316.	1550	*Patersonia occidentalis (Purple Flag, Koma)*			
317.	4346	*Pelargonium littorale*			
318.	24648	*Pelecanus conspicillatus (Australian Pelican)*			
319.	6006	*Pericalymma ellipticum (Swamp Teatree)*			
320.	2273	*Persoonia saccata (Snottygobble)*			
321.	2299	*Petrophile linearis (Pixie Mops)*			
322.	25697	*Phalacrocorax carbo (Great Cormorant)*			
323.	25698	*Phalacrocorax melanoleucos (Little Pied Cormorant)*			
324.	24667	*Phalacrocorax sulcirostris (Little Black Cormorant)*			
325.	25699	*Phalacrocorax varius (Pied Cormorant)*			
326.	24409	*Phaps chalcoptera (Common Bronzewing)*			
327.	20460	*Pheladenia deformis*			
328.	1478	*Phlebocarya ciliata*			
329.	44540	*Phoenix canariensis (Canary Islands Date Palm)*	Y		
330.		*Phryganoporus candidus*			
331.	24596	*Phylidonyris novaehollandiae (New Holland Honeyeater)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
332.	4675	*Phyllanthus calycinus (False Boronia)*			
333.		*Phytophthora cinnamomi*			
334.	8160	*Picris squarrosa*			
335.	11639	*Pimelea longiflora subsp. longiflora*			
336.	5261	*Pimelea rosea (Rose Banjine)*			
337.	8165	*Pithocarpa pulchella (Beautiful Pithocarpa)*			
338.	24841	*Platalea flavipes (Yellow-billed Spoonbill)*			
339.	24747	*Platycercus spurius (Red-capped Parrot)*			
340.	25721	*Platycercus zonarius (Australian Ringneck, Ring-necked Parrot)*			
341.	6249	*Platysace compressa (Tapeworm Plant)*			
342.	24843	*Plegadis falcinellus (Glossy Ibis)*		IA	
343.	65	*Pleurosorus rutifolius (Blanket Fern)*			
344.	24383	*Pluvialis squatarola (Grey Plover)*		IA	
345.	25704	*Podiceps cristatus (Great Crested Grebe)*			
346.	25510	*Pogona minor (Dwarf Bearded Dragon)*			
347.		*Pogonolepis sp.*			
348.	8188	*Pogonolepis stricta*			
349.	24681	*Poliocephalus poliocephalus (Hoary-headed Grebe)*			
350.	25722	*Polytelis anthopeplus (Regent Parrot)*			
351.	18323	*Populus alba*	Y		
352.	4691	*Poranthera microphylla (Small Poranthera)*			
353.	25731	*Porphyrio porphyrio (Purple Swamphen)*			
354.	24767	*Porphyrio porphyrio subsp. bellus (Purple Swamphen)*			
355.	24769	*Porzana fluminea (Australian Spotted Crake)*			
356.	24771	*Porzana tabuensis (Spotless Crake)*			
357.	1669	*Prasophyllum cyphochilum (Pouched Leek Orchid)*			
358.	1674	*Prasophyllum giganteum (Bronze Leek Orchid)*			
359.	24166	*Pseudocheirus occidentalis (Western Ringtail Possum)*		T	
360.	25511	*Pseudonaja affinis (Dugite)*			
361.		*Pterostylis aff. nana*			
362.	17267	*Pterostylis brevisepala*			
363.	31731	*Pterostylis frenchii*		P2	
364.	12217	*Pterostylis sanguinea*			
365.		*Pterostylis sp.*			
366.	1698	*Pterostylis vittata (Banded Greenhood)*			
367.	4183	*Pultenaea skinneri (Skinner's Pea)*		P4	
368.		*Purpureicephalus spurius*			
369.	28017	*Pyxine cocoes*			
370.	8195	*Quinetia urvillei*			
371.	2935	*Ranunculus pumilio (Smallflower Buttercup)*			
372.	24245	*Rattus rattus (Black Rat)*	Y		
373.		*Raveniella peckorum*			
374.	24776	*Recurvirostra novaehollandiae (Red-necked Avocet)*			
375.	25613	*Rhipidura fuliginosa (Grey Fantail)*			
376.	25614	*Rhipidura leucophrys (Willie Wagtail)*			
377.	4705	*Ricinus communis (Castor Oil Plant)*	Y		
378.	3066	*Rorippa nasturtium-aquaticum (Watercress)*	Y		
379.	40426	*Rytidosperma occidentale*			
380.	20063	*Salix babylonica*	Y		
381.	7619	*Scaevola lanceolata (Long-leaved Scaevola)*			
382.	7635	*Scaevola pilosa (Hairy Fan-flower)*			
383.	984	*Schoenus curvifolius*			
384.	1011	*Schoenus rigens*			
385.		*Scolopendra laeta*			
386.	25534	*Sericornis frontalis (White-browed Scrubwren)*			
387.	2909	*Silene gallica (French Catchfly)*	Y		
388.	25266	*Simoselaps bertholdi (Jan's Banded Snake)*			
389.	30948	*Smicrornis brevirostris (Weebill)*			
390.	8231	*Sonchus oleraceus (Common Sowthistle)*	Y		
391.	1312	*Sowerbaea laxiflora (Purple Tassels)*			
392.	635	*Sporobolus virginicus (Marine Couch)*			
393.		*Stackhousia sp.*			
394.		*Steatoda capensis*			
395.		*Steatoda grossa*			
396.	2918	*Stellaria media (Chickweed)*	Y		
397.	24329	*Stictonetta naevosa (Freckled Duck)*			
398.	2316	*Stirlingia latifolia (Blueboy)*			
399.	25597	*Strepera versicolor (Grey Currawong)*			
400.	25590	*Streptopelia senegalensis (Laughing Turtle-Dove)*	Y		
401.	25831	*Stylidium araeophyllum (Stilt Walker)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
402.		*Stylidium araeophyllum MS*			
403.	7693	*Stylidium brunonianum (Pink Fountain Triggerplant)*			
404.	7699	*Stylidium carnosum (Fleshy-leaved Triggerplant)*			
405.	7745	*Stylidium junceum (Reed Triggerplant)*			
406.	7774	*Stylidium piliferum (Common Butterfly Triggerplant)*			
407.	7785	*Stylidium repens (Matted Triggerplant)*			
408.	7798	*Stylidium schoenoides (Cow Kicks)*			
409.		*Styphelia sp.*			
410.	2639	*Suaeda australis (Seablite)*			
411.	2329	*Synaphea spinulosa*			
412.	15532	*Synaphea spinulosa subsp. spinulosa*			
413.	25705	*Tachybaptus novaehollandiae (Australasian Grebe, Black-throated Grebe)*			
414.	24682	*Tachybaptus novaehollandiae subsp. novaehollandiae (Australasian Grebe, Black-throated Grebe)*			
415.	24331	*Tadorna tadornoides (Australian Shelduck, Mountain Duck)*			
416.		*Taractrocera papyria subsp. agraulia*			
417.		*Tetralycosa oraria*			
418.	1036	*Tetraria octandra*			
419.	4535	*Tetratheca hirsuta (Black Eyed Susan)*			
420.		*Thalasseus bergii*			
421.	10856	*Thelymitra benthamiana (Leopard Orchid)*			
422.	11053	*Thelymitra macrophylla*			
423.	5084	*Thomasia grandiflora (Large Flowered Thomasia)*			
424.	24844	*Threskiornis molucca (Australian White Ibis)*			
425.	24845	*Threskiornis spinicollis (Straw-necked Ibis)*			
426.	1318	*Thysanotus arbuscula*			
427.	1319	*Thysanotus arenarius*			
428.	1338	*Thysanotus manglesianus (Fringed Lily)*			
429.	1339	*Thysanotus multiflorus (Many-flowered Fringe Lily)*			
430.	25519	*Tiliqua rugosa*			
431.	25207	*Tiliqua rugosa subsp. rugosa*			
432.	25549	*Todiramphus sanctus (Sacred Kingfisher)*			
433.	1368	*Trachyandra divaricata*	Y		
434.	6280	*Trachymene pilosa (Native Parsnip)*			
435.	1485	*Tribonanthes violacea*			
436.	8251	*Trichocline spathulata (Native Gerbera)*			
437.	24158	*Trichosurus vulpecula subsp. vulpecula (Common Brushtail Possum)*			
438.	1361	*Tricoryne elatior (Yellow Autumn Lily)*			
439.	4292	*Trifolium campestre (Hop Clover)*	Y		
440.	24806	*Tringa glareola (Wood Sandpiper)*		IA	
441.	24808	*Tringa nebularia (Common Greenshank)*		IA	
442.		*Uromyces sp.*			
443.	8254	*Urospermum picroides (False Hawkbit)*	Y		
444.	8255	*Ursinia anthemoides (Ursinia)*	Y		
445.	1767	*Urtica urens (Small Nettle)*	Y		
446.	24386	*Vanellus tricolor (Banded Lapwing)*			
447.	25218	*Varanus gouldii (Bungarra or Sand Monitor)*			
448.	12392	*Verticordia attenuata*		P3	
449.	24206	*Vespadelus regulus (Southern Forest Bat)*			
450.	24040	*Vulpes vulpes (Red Fox)*	Y		
451.	12072	*Wurmbea dioica subsp. alba*			
452.	1403	*Wurmbea tenella (Eight Nancy)*			
453.	1251	*Xanthorrhoea brunonis*			
454.	1256	*Xanthorrhoea preissii (Grass tree, Palga)*			
455.	6289	*Xanthosia huegelii*			
456.	2331	*Xylomelum occidentale (Woody Pear, Djandin)*			
457.	25765	*Zosterops lateralis (Grey-breasted White-eye, Silvereye)*			

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

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

Australian Government

Department of the Environment

EPBC Act Protected Matters Report

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

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

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 29/03/16 19:16:31

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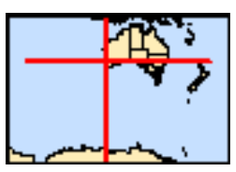
Coordinates
Buffer: 5.0Km



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 Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	35
Listed Migratory Species:	26

Other Matters Protected by the EPBC Act

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

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

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

Commonwealth Land:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	28
Whales and Other Cetaceans:	None
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:	None
Regional Forest Agreements:	None
Invasive Species:	30
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

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

Name	Status	Type of Presence
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat may occur within area
Calyptorhynchus baudinii Baudin's Black-Cockatoo, Long-billed Black-Cockatoo [769]	Vulnerable	Breeding likely to occur within area
Calyptorhynchus latirostris Carnaby's Black-Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Breeding likely to occur within area
Diomedea epomophora epomophora Southern Royal Albatross [25996]	Vulnerable	Species or species habitat likely to occur within area
Diomedea epomophora sanfordi Northern Royal Albatross [82331]	Endangered	Species or species habitat likely to occur within area
Diomedea exulans amsterdamensis Amsterdam Albatross [82330]	Endangered	Species or species habitat may occur within area
Diomedea exulans exulans Tristan Albatross [82337]	Endangered	Species or species habitat may occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Species or species habitat likely to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Macronectes giganteus 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
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris impavida Campbell Albatross [82449]	Vulnerable	Species or species habitat may occur within area
Mammals		
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Vulnerable	Species or species habitat known to occur within area
Plants		
Andersonia gracilis Slender Andersonia [14470]	Endangered	Species or species habitat may occur within area
Caladenia huegelii King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat known to occur within area
Darwinia foetida Muchea Bell [83190]	Critically Endangered	Species or species habitat likely to occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat known 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, Praying Virgin [16753]	Endangered	Species or species habitat likely to occur within area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat likely to occur within area
Synaphea sp. Fairbridge Farm (D.Papenfus 696) Selena's Synaphea [82881]	Critically Endangered	Species or species habitat likely to occur

Name	Status	Type of Presence
		within area
Synaphea stenoloba		
Dwellingup Synaphea [66311]	Endangered	Species or species habitat may occur within area
Reptiles		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas		
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 may occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Sharks		
Carcharodon carcharias		
Great White Shark [64470]	Vulnerable	Species or species habitat likely to occur within area

Listed Migratory Species [Resource Information]

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

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Diomedea amsterdamensis		
Amsterdam Albatross [64405]	Endangered*	Species or species habitat may occur within area
Diomedea dabbenena		
Tristan Albatross [66471]	Endangered*	Species or species habitat may occur within area
Diomedea epomophora (sensu stricto)		
Southern Royal Albatross [1072]	Vulnerable*	Species or species habitat likely to occur within area
Diomedea exulans (sensu lato)		
Wandering Albatross [1073]	Vulnerable	Species or species habitat likely to occur within area
Diomedea sanfordi		
Northern Royal Albatross [64456]	Endangered*	Species or species habitat likely to occur within area
Macronectes giganteus		
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
Puffinus carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur within area
Thalassarche cauta (sensu stricto)		
Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
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*	Species or species habitat likely to occur within area
Migratory Marine Species		
Carcharodon carcharias Great White Shark [64470]	Vulnerable	Species or species habitat likely to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas 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 may occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Migratory Terrestrial Species		
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely 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.

Name	Threatened	Type of Presence
Birds		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered*	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered*	Species or species habitat may occur within area
Diomedea epomophora (sensu stricto) Southern Royal Albatross [1072]	Vulnerable*	Species or species habitat likely to occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Species or species habitat likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered*	Species or species habitat likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Macronectes giganteus 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
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Thalassarche cauta (sensu stricto) Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Species or species habitat likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable*	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Species or species habitat likely to occur within area
Thinornis rubricollis Hooded Plover [59510]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas 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 may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

Extra Information

Invasive Species [Resource Information]

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

Name	Status	Type of Presence
Birds		
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		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 rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		

Name	Status	Type of Presence
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Asparagus declinatus Bridal Veil, Bridal Veil Creeper, Pale Berry Asparagus Fern, Asparagus Fern, South African Creeper [66908]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Brachiaria mutica Para Grass [5879]		Species or species habitat may occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Genista linifolia Flax-leaved Broom, Mediterranean Broom, Flax Broom [2800]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lycium ferocissimum 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
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may 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.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Solanum elaeagnifolium Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade, Tomato Weed, White Nightshade, Bull-nettle, Prairie-berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf-nettle, Trompillo [12323]		Species or species habitat likely to occur within area

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.

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

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-33.2456 115.7502

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
-Parks and Wildlife Commission NT, Northern Territory Government
-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, Atherton and Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-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 2
Vegetation Condition Scale (Keighery 1994)

Condition rating	Description
Pristine (1)	Pristine or nearly so, no obvious sign of disturbance.
Excellent (2)	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
Very Good (3)	Vegetation structure altered obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
Good (4)	Vegetation structure significantly altered by obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback, grazing.
Degraded (5)	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
Completely Degraded (6)	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as ‘parkland cleared’ with the flora comprising weed or crop species with isolated native trees or shrubs.