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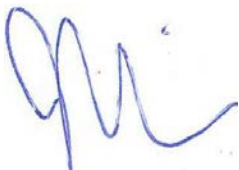
21 May 2018

Dear Joel,

Bouvard NBN Facility Rare Flora Survey

Please find attached the results of the targeted rare flora survey and tree/shrub assessment conducted by Eco Logical Australia (ELA) at the proposed NBN facility site in Bouvard, Western Australia.

Yours sincerely,



Joel Collins

Senior Botanist

Introduction

ELA was commissioned by Aurecon, to conduct a rare flora survey and tree/shrub assessment to support the development of a proposed National Broadband Network (NBN) facility in Bouvard, Western Australia. The location of the facility and study area is presented in **Figure 1**.

The scope of the work was to undertake a desktop assessment, site visit and provide a report detailing the results.

Desktop assessment

Prior to the survey, ELA conducted a desktop assessment to gather information on potentially occurring conservation significant flora. The following databases were searched:

- Department of the Environment and Energy (DotEE) Protected Matters Search Tool for Threatened species and communities listed under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act; DotEE 2018); and
- Department of Biodiversity, Conservation and Attractions (DBCA) and Western Australian Museum (WAM) NatureMap online flora and fauna database (DBCA 2007-2018).

The desktop assessment identified 38 conservation significant flora taxa that could possibly occur in the study area (**Table 1; Appendix A**). Records of fungi and/or non-vascular plants were omitted from the desktop assessment.

Conservation codes for Western Australia flora is provided in **Appendix B** and ELA's likelihood of occurrence assessment criteria is provided in **Appendix C**.

Methods and limitations

The survey approach was undertaken in accordance with the following documents:

- Environmental Protection Authority (EPA). *Technical Guide – Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA 2016); and
- Draft Survey Guidelines for Australia's Threatened Orchids (Commonwealth of Australia 2013).

It should however be noted that the survey was undertaken outside of the recommended survey timing for surveys on the Swan Coastal Plain (Spring) and also for the Threatened orchids identified during the desktop assessment.

The rare flora survey was conducted over a single day on 10th April 2018 by ELA Botanist Sarah Dalglish. The survey involved traversing the entire study area through systematic transects spaced 10 m or less apart. Any conservation significant species or tree/shrub species of prominence (e.g. taller than 2 m) were recorded. For trees/shrubs, data was collected on location of individuals (coordinates taken using a Global Positioning System unit), species, Diameter at Breast Height (DBH), height and number of stems (for multi-stemmed shrubs). Vegetation assessment was not undertaken as part of this study.

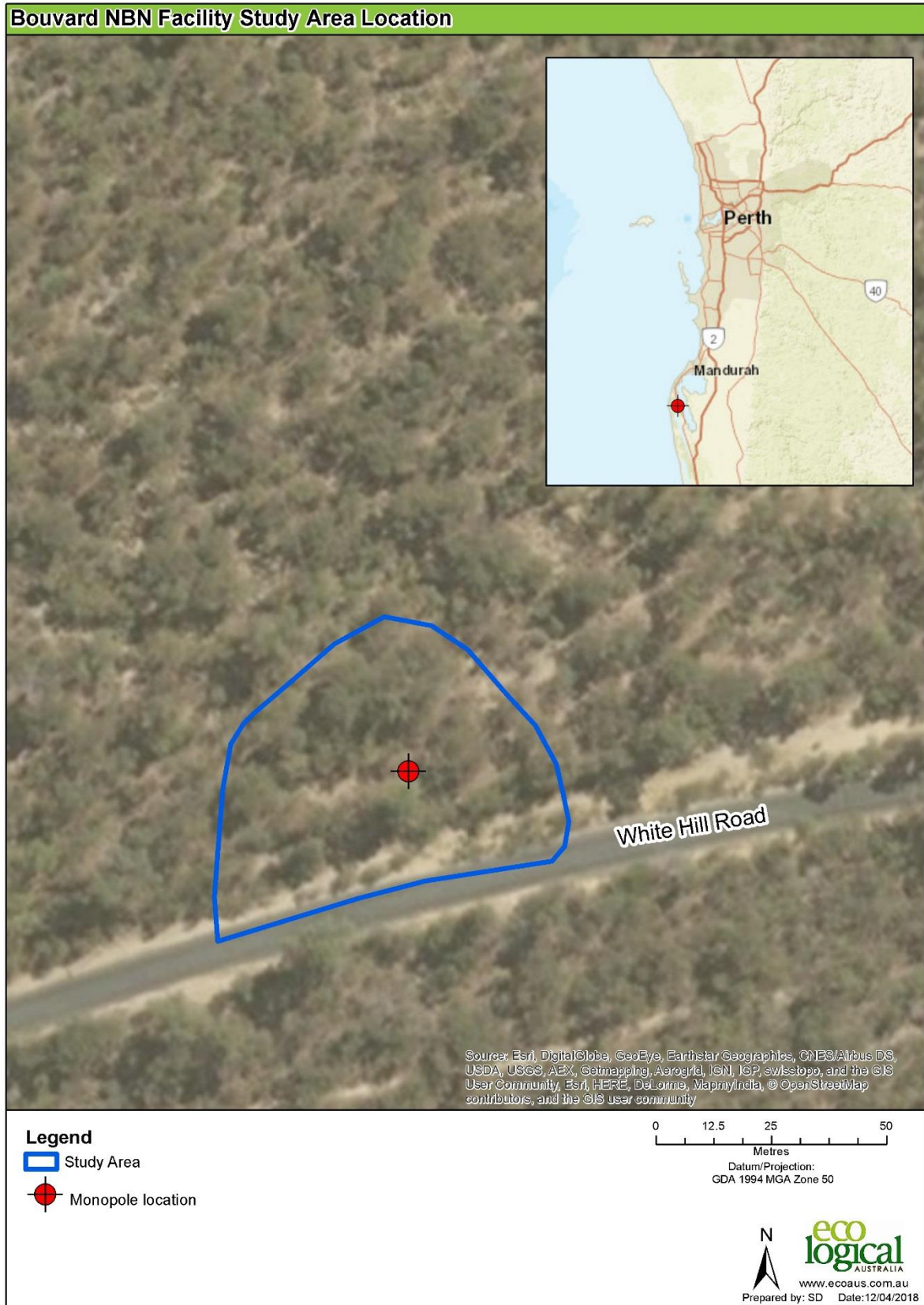


Figure 1: Location of Bouvard NBN facility study area

Results

Flora survey

The study area consisted of *Eucalyptus gomphocephala* (Tuart) isolated trees over *Agonis flexuosa* (Peppermint), *Banksia attenuata* (Slender Banksia) and *Allocasuarina fraseriana* (Sheoak) woodland over *Hibbertia hypericoides* and *Macrozamia riedlei* sparse shrubland on yellow/brown sandy soils on a slight rise. Vegetation condition within the study area was Very Good (in accordance with EPA 2016).

Following the survey, the possibility of conservation significant flora occurring within the study areas was reassessed based on observations made in the field.

No conservation significant flora species listed as Threatened under either the EPBC Act or the *Wildlife Conservation Act 1950* (WC Act), or listed by DBCA as a priority species were recorded or considered potential or likely to occur within the study area.

It should however be noted that the survey was undertaken outside of the appropriate survey timing for the Threatened (under the EPBC Act and WC Act) orchid species *Caladenia huegelii*, which is Spring. Although the study area contains suitable habitat for this species and is located within its geographical range, this species is considered unlikely to occur. In combination with the very small size of the study area (i.e. <300 m²) and no records of this species in close proximity (the closest records are >4 km away), the study area also has evidence of disturbance which is affecting the condition of the vegetation. At the time of the survey, dead *Banksia attenuata* individuals were noted which may indicate the presence of dieback (*Phytophthora cinnamomi*), additionally there appears to be old tracks in the vicinity. The study area has also been burnt and is adjacent to a road, fence line and powerline corridor, which subject the study area to edge effects. Overall there was low floristic diversity and vegetation condition within the study area, with this in combination with current disturbances, the habitat is unlikely to be suitable to support *Caladenia huegelii*.

All of the remaining conservation significant flora species identified in the desktop assessment were considered unlikely to occur or would not occur. This was mainly due to lack of suitable habitat within the study area to support these species (i.e. most species require moist, seasonally damp/wet habitats, whereas the study area is located on a slight rise and has well drained soils). For some other species where suitable habitat was present within the study area, these species were perennial shrubs and would have been conspicuous and easily detected during the survey if they were present.

The likelihood of occurrence for each conservation significant flora species identified in the desktop assessment, including justification for likelihood, is provided in **Table 1** below.

Table 1: Flora likelihood of occurrence assessment.

Species	Conservation status ¹		Form and habitat	Likelihood	Justification
	EPBC Act	WC Act/DBCA			
<i>Andersonia gracilis</i> (Slender Andersonia)	En	T	Slender erect or open straggly shrub grows to 0.1-0.5(-1) m high. Grows in white/grey sand, sandy clay, gravelly loam in winter-wet areas and near swamps (WAH 1998 - 2018).	No	No suitable habitat and no records for this species within 50 km of the study area
<i>Banksia nivea</i> subsp. <i>uliginosa</i> (A.S.George) A.R.Mast & K.R.Thiele (Swamp Honeypot)	En	T	Dense, erect, non-lignotuberous shrub that grows 0.2-1.5 m high. Grows in sandy clay and gravel (WAH 1998 - 2018).	No	No suitable habitat and no records for this species within 50 km of the study area
<i>Caladenia huegelii</i> (Grand Spider Orchid)	En	T	Tuberous perennial herb that grows 0.25-0.6 m high and flowers September to October. Grows in grey or brown sand and clay loam soils (WAH 1998 - 2018).	Unlikely	The study area is within the species range and contains suitable habitat, however vegetation in the study area appears to be affected by dieback and previous fires and has low floristic diversity. There is also some evidence of old disturbances from tracks and possibly edge effects from the road. There are no records of this species in close proximity to the study area (the closest records are >4km away). These factors in combination with the very small size of the study area reduce the likelihood of occurrence of this species being present.

Species	Conservation status ¹		Form and habitat	Likelihood	Justification
	EPBC Act	WC Act/DBCA			
<i>Diuris drummondii</i> (Tall Donkey Orchid)	Vu	T	Tuberous, perennial herb grows 0.5-1.05 m high. Flowers November to December or January. Grows in low-lying depressions and swamps (WAH 1998 - 2018).	No	No suitable habitat within the study area.
<i>Diuris micrantha</i> (Dwarf Bee-orchid)	Vu	T	Tuberous, perennial herb grows 0.3-0.6 m high. Flowers September to October. Grows in brown loamy clay in winter-wet swamps, in shallow water (WAH 1998 - 2018).	No	No suitable habitat within the study area.
<i>Diuris purdiei</i> (Purdie's Donkey Orchid)	En	T	Tuberous, perennial herb grows 0.15-0.35 m high. Flowers September to October. Grows in moist grey-black sand in winter-wet swamps (WAH 1998 - 2018).	No	No suitable habitat within the study area.
<i>Drakaea elastica</i> (Glossy-leaved Hammer Orchid)	En	T	Tuberous, perennial herb grows 0.12-0.3 m high. Flowers October to November. Grows in white or grey sand in low-lying situations adjoining winter-wet swamps (WAH 1998 - 2018).	No	No suitable habitat within the study area.

Species	Conservation status ¹		Form and habitat	Likelihood	Justification
	EPBC Act	WC Act/DBCA			
<i>Drakaea micrantha</i> (Dwarf Hammer-orchid)	Vu	T	Tuberous, perennial herb grows 0.15-0.3 m high. Flowers September to October. Grows in white-grey sand (WAH 1998 - 2018).	Unlikely	Study area is located to the west of the typical range of this species and there are no records in the broader remnant vegetation in which the study area is located. Additionally, there are no records of this species within 10 km and the lower condition of the study area would likely affected the occurrence of this species.
<i>Eleocharis keigheryi</i> (Keighery's Eleocharis)	Vu	T	Rhizomatous, clumped perennial, grass-like or herb (sedge) grows to 0.4 m high. Flowers August to November. Grows in clay, sandy loam soils and is emergent in freshwater: creeks, claypans (WAH 1998 - 2018).	No	No suitable habitat within the study area.
<i>Grevillea thelemanniana</i> (Spider Net Grevillea)		T	Spreading, lignotuberous shrub grows 0.3-1.5 m high. Flowers May to November. Grows in sand, sandy clay soils in winter-wet low-lying flats (WAH 1998 - 2018).	No	No suitable habitat within the study area, species also conspicuous and would be easily detectable if present.
<i>Synaphea</i> sp. Fairbridge Farm (D. Papenfus 696)	Cr	T	Dense, clumped shrub grows to 0.3 m high and to 0.4 m wide. Flowers in October. Grows in sandy soil with lateritic pebbles near winter-wet flats, in low woodland with weedy grasses (WAH 1998 - 2018).	No	No suitable habitat within the study area, species also conspicuous and would be easily detectable if present.

Species	Conservation status ¹		Form and habitat	Likelihood	Justification
	EPBC Act	WC Act/DBCA			
<i>Synaphea</i> sp. Pinjarra Plain (A.S. George 17182)	En	T	Erect, clumped shrub (sub-shrub) grows to 0.8 m high. Flowers September to November. Grows in grey sandy loam or clay, grey-brown clayey sand, brown clayey loam and laterite soils on flats, seasonally wet areas, and railroad reserves often with wet depressions or drains (WAH 1998 - 2018).	No	No suitable habitat within the study area, study area is also west of typical range also species is conspicuous and would be easily detectable if present.
<i>Synaphea</i> sp. Serpentine (G.R. Brand 103)	Cr	T	Perennial, erect, clumped shrub to 0.6m high. Flowers between late August and November. It grows on grey brown sandy loam or clay in seasonally wet areas (WAH 1998 - 2018).	No	No suitable habitat within the study area, study area is also west of typical range also species is conspicuous and would be easily detectable if present.
<i>Synaphea stenoloba</i> (Dwellingup <i>Synaphea</i>)	En	T	Caespitose shrub grows 0.3-0.45 m high. Flowers August to October. Grows in sandy or sandy clay soils in winter-wet flats, granite (WAH 1998 - 2018).	No	No suitable habitat within the study area, study area is also west of typical range also species is conspicuous and would be easily detectable if present.
<i>Acacia benthamii</i>		P2	Shrub grows to approximately 1 m high. Flowers August to September. Grows in sand, typically on limestone breakaways (WAH 1998 - 2018).	No	No suitable habitat within the study area also species is conspicuous and would be easily detectable if present.

Species	Conservation status ¹		Form and habitat	Likelihood	Justification
	EPBC Act	WC Act/DBCA			
<i>Caladenia swartsiorum</i>		P2	Herb that grows in moist, sandy soils adjacent to seasonally wet flats and sometimes in adjacent woodland habitats (Brown and Brockman 2015).	No	No suitable habitat within the study area.
<i>Cardamine paucijuga</i>		P2	Slender erect annual, herb grows to 0.4 m high. Flowers September to October. Grows in moist to dry habitats (WAH 1998 - 2018).	Unlikely	Study area is located to the west of the typical range of this species and there are no records in the broader remnant vegetation in which the study area is located.
<i>Craspedia</i> sp. Waterloo (G.J. Keighery 13724)		P2	Herb that grows to approximately 0.4 m in seasonally wet areas in clay soils (WAH 1998 - 2018).	No	No suitable habitat within the study area.
<i>Eryngium pinnatifidum</i> subsp. <i>Umbraphilum</i> (G.J. Keighery 13967)		P2	Tuberous herb that grows in seasonally wet flats in black sand - clay soils (WAH 1998 - 2018).	No	No suitable habitat within the study area.
<i>Gastrolobium</i> sp. Harvey (G.J. Keighery 16821)		P2	Erect, scrambling or twining shrub grows to 2 m high. Flowers September. Grows in black peaty sandy clay, brown sandy clay on winter-wet flats, margins of billabongs (WAH 1998 - 2018).	No	No suitable habitat within the study area.
<i>Chamaescilla gibsonii</i>		P3	Clumped tuberous, herb. Flowers in September. Grows in clay to sandy clay on winter-wet flats, shallow water-filled clay pans (WAH 1998 - 2018).	No	No suitable habitat within the study area.

Species	Conservation status ¹		Form and habitat	Likelihood	Justification
	EPBC Act	WC Act/DBCA			
<i>Dillwynia dillwynioides</i>		P3	Decumbent or erect, slender shrub grows 0.3-1.2 m high. Flowers August to December. Grows in sandy soils in winter-wet depressions (WAH 1998 - 2018).	No	No suitable habitat within the study area, study area is also west of typical range also species is conspicuous and would be easily detectable if present.
<i>Eryngium pinnatifidum</i> subsp. <i>Palustre</i> (G.J. Keighery 13459)		P3	Herb that grows up to 0.5 m tall. Grows in seasonally inundated areas such as swamps and clay pans in sandy clay soils (WAH 1998 - 2018).	No	No suitable habitat within the study area, study area is also west of typical range also species.
<i>Hibbertia spicata</i> subsp. <i>leptotheca</i>		P3	Erect or spreading shrub grows 0.2-0.5 m high. Flowers July to October. Grows in sand near-coastal limestone ridges, outcrops & cliffs (WAH 1998 - 2018).	No	No suitable habitat within the study area also species is conspicuous and would be easily detectable if present.
<i>Lasiopetalum membranaceum</i>		P3	Multi-stemmed shrub grows 0.2-1 m high. Flowers September to December. Grows in sand over limestone (WAH 1998 - 2018).	No	Marginal habitat within species range, however species is conspicuous and would be easily detectable during survey if present.
<i>Meionectes tenuifolia</i>		P3	Annual herb grows to 0.2 m. Grows in seasonally wet flats and swamps (Wheeler et al 2002).	No	No suitable habitat within the study area.
<i>Myriophyllum echinatum</i>		P3	Erect annual, herb grows 0.02-0.03 m high. Flowers in November. Grows in clay on winter-wet flats (WAH 1998 - 2018).	No	No suitable habitat within the study area.

Species	Conservation status ¹		Form and habitat	Likelihood	Justification
	EPBC Act	WC Act/DBCA			
<i>Platysace ramosissima</i>		P3	Perennial, herb grows to 0.3 m high. Flowers October to November. Grows in sandy soils (WAH 1998 - 2018).	Unlikely	Suitable habitat and study area is within species range however species would have been detectable during the survey if it was present.
<i>Sphaerolobium calcicola</i>		P3	Slender, multi-stemmed, scandent or erect shrub grows to 1.5 m high. Flowers June or September to November. Grows in white-grey-brown sand, sandy clay over limestone, black peaty sandy clay on tall dunes, winter-wet flats, interdunal swamps, low-lying areas (WAH 1998 - 2018).	No	No suitable habitat within the study area.
<i>Stylidium maritimum</i>		P3	Caespitose perennial, herb grows to 0.3-0.7 m high. Flowers September to November. Grows in sand over limestone on dune slopes and flats with coastal heath and shrubland, open Banksia woodland (WAH 1998 - 2018).	Unlikely	Suitable habitat and study area is within species range, however species is conspicuous and would be easily detectable during survey if present.

Species	Conservation status ¹		Form and habitat	Likelihood	Justification
	EPBC Act	WC Act/DBCA			
<i>Stylidium paludicola</i>		P3	Reed-like perennial, herb grows to 0.35-1 m high. Flowers October to December. Grows in Peaty sand over clay in winter wet habitats with Marri and Melaleuca woodland, Melaleuca shrubland (WAH 1998 - 2018).	No	No suitable habitat within the study area.
<i>Caladenia speciosa</i>		P4	Tuberous, perennial, herb grows 0.35-0.6 m high. Flowers September to October. Grows in white, grey or black sand (WAH 1998 - 2018).	Unlikely	Study area is located to the west of the typical range of this species and there are no records in the broader remnant vegetation in which the study area is located. Additionally, there are no records of this species within 10 km and the lower condition of the study area would likely affected the occurrence of this species.
<i>Conostylis pauciflora</i> subsp. <i>pauciflora</i>		P4	Rhizomatous, stoloniferous perennial, grass-like or herb grows 0.1-0.35 m high. Flowers August to October. Grows in grey sand, limestone on hillslopes, consolidated dunes (WAH 1998 - 2018).	No	Suitable habitat and study area is within species range, however species is conspicuous and would be easily detectable during survey if present.
<i>Hakea oligoneura</i>		P4	Shrub grows 1.8 - 2 m high. Flowers in September. Grows in white-brown sand on limestone ridges (Shepherd and Barker 2009).	No	Study area is within species range, however species is conspicuous and would be easily detectable during survey if present.

Species	Conservation status ¹		Form and habitat	Likelihood	Justification
	EPBC Act	WC Act/DBCA			
<i>Ornduffia submersa</i>		P4	Aquatic herb grows in seasonally inundated areas in sand - clay soils (WAH 1998 - 2018).	No	No suitable habitat within the study area.
<i>Rumex drummondii</i>		P4	Erect perennial, herb grows 0.6-0.9 m high. Grows in winter-wet disturbed areas (WAH 1998 - 2018).	No	No suitable habitat within the study area.
<i>Stylidium longitubum</i> (Jumping Jacks)		P4	Erect annual (ephemeral), herb grows 0.05-0.12 m high. Flowers October to December. Grows in sandy clay, clay in seasonal wetlands (WAH 1998 - 2018).	No	No suitable habitat within the study area.
<i>Tripterococcus</i> sp. Brachylobus (A.S. George 14234)		P4	Annual herb up to 0.6 m grows in grey sand and clay soils in moist environments such as winter wet flats (WAH 1998 - 2018).	Unlikely	Study area is located to the west of the typical range of this species and there are no records in the broader remnant vegetation in which the study area is located. Habitat within the study area is marginal and unlikely to support this species.

¹ CR = Listed as Critically Endangered under the EPBC Act

EN = Listed as Endangered under the EPBC Act

VU = Listed as Vulnerable under the EPBC Act

T = Threatened species: flora that has been declared likely to become extinct or is rare, or otherwise in need of special protection, pursuant to section 23F(2) of the WC Act.

P2 = Priority 2: poorly known species known from one or a few locations, some of which are on lands managed primarily for nature conservation, and are in urgent need of further survey. Listed by DBCA.

P3 = Priority 3: poorly-known species known from several specimens or records but not under imminent threat, and need further survey. Listed by DBCA.

P4 = Priority 4: Rare, Near Threatened and other species in need of monitoring but not currently threatened; could become threatened if present circumstances change. Listed by DBCA.

Tree/shrub survey

Eight prominent tree/shrub species were recorded within the study area, these included *Agonis flexuosa* (Peppermint), *Allocasuarina fraseriana* (Sheoak), *Banksia attenuata* (Slender Banksia), *Corymbia calophylla* (Marri), *Eucalyptus gomphocephala* (Tuart), *Templetonia retusa* (Cockies Tongues), *Jacksonia furcellata* (Grey Stinkwood) and *Xylomelum occidentale* (Woody Pear). Throughout the study area, 171 individual trees/shrubs were recorded, these included three dead trees (species unknown) and several trees with multiple stems (in particular *Agonis flexuosa* individuals had multiple stems; **Figure 2**). Four *Eucalyptus gomphocephala* (Tuart) trees were recorded within the study area which meet the criteria of potential breeding trees for Threatened Black Cockatoos (Carnaby's cockatoo [*Calyptorhynchus latirostris*], Baudin's cockatoo [*Calyptorhynchus baudinii*] and Forest red-tailed black cockatoo [*Calyptorhynchus banksii naso*]) as they are a suitable species and meet the minimum DBH of 500 mm as listed in the EPBC referral guidelines (Department of Sustainability, Environment, Water, Population and Communities 2012). These trees are located from approximately 13 m to 30 m from the proposed NBN facility monopole location (**Figure 3**). Trees located in close proximity (i.e. within approximately 5 m of the proposed NBN facility monopole) comprised small *Allocasuarina fraseriana* (Sheoak) individuals or dead trees (**Figure 2**).

The location and associated information for each prominent tree/shrub species recorded during the survey is provided in **Table 2**.

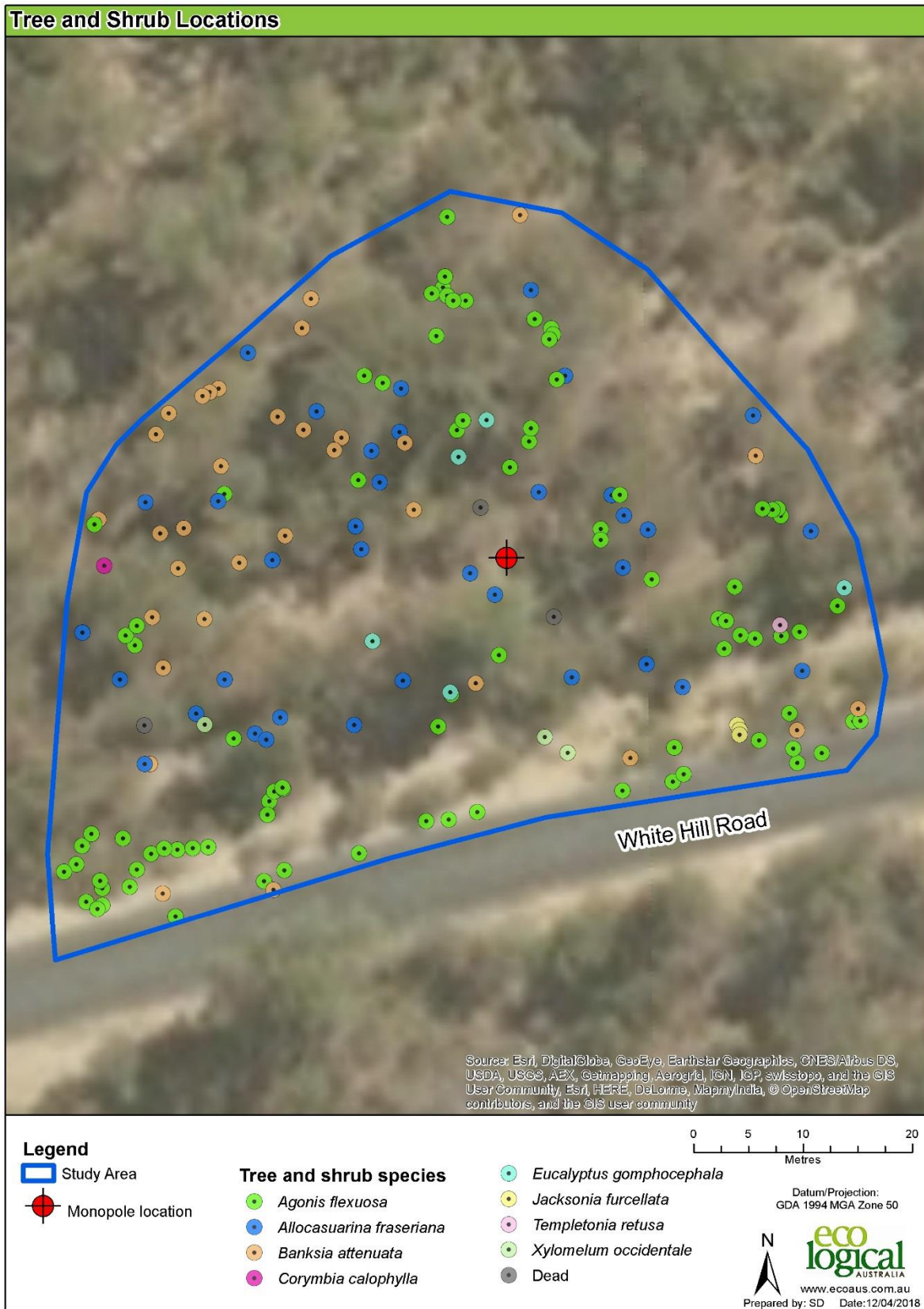


Figure 2: Tree and shrub locations in proximity to the proposed NBN facility monopole



Figure 3: Potential Black Cockatoo breeding trees

Table 2: Prominent trees/shrubs within the study area

Easting	Northing	Waypoint	Species	Common name	DBH (cm)	No. stems	Approx. height (m)
373293	6382546	1	<i>Agonis flexuosa</i>	Peppermint	2	1	2.1
373292	6382547	2	<i>Agonis flexuosa</i>	Peppermint	3	4	2.3
373293	6382548	3	<i>Agonis flexuosa</i>	Peppermint	3.5	6	2.5
373293	6382548	4	<i>Agonis flexuosa</i>	Peppermint	2	2	2.5
373291	6382552	5	<i>Agonis flexuosa</i>	Peppermint	4	1	2
373291	6382550	6	<i>Agonis flexuosa</i>	Peppermint	3.5	1	2
373289	6382549	7	<i>Agonis flexuosa</i>	Peppermint	2	1	2
373292	6382553	8	<i>Agonis flexuosa</i>	Peppermint	19.5	2	5
373295	6382552	9	<i>Agonis flexuosa</i>	Peppermint	2	7	2
373296	6382549	10	<i>Agonis flexuosa</i>	Peppermint	2	3	2.5
373293	6382546	11	<i>Agonis flexuosa</i>	Peppermint	5	10	2.5
373296	6382548	12	<i>Agonis flexuosa</i>	Peppermint	2.5	5	2
373297	6382551	13	<i>Agonis flexuosa</i>	Peppermint	3	6	2.3
373300	6382551	15	<i>Agonis flexuosa</i>	Peppermint	4	8	2.5
373299	6382547	16	<i>Banksia attenuata</i>	Slender Banksia	3	1	2
373300	6382545	17	<i>Agonis flexuosa</i>	Peppermint	2	4	2
373303	6382552	18	<i>Agonis flexuosa</i>	Peppermint	4	4	2.5
373301	6382551	19	<i>Agonis flexuosa</i>	Peppermint	2	3	3
373299	6382551	20	<i>Agonis flexuosa</i>	Peppermint	3	1	2.5
373308	6382548	21	<i>Agonis flexuosa</i>	Peppermint	3	7	2.5
373309	6382548	22	<i>Banksia attenuata</i>	Slender Banksia	3	1	2.5
373310	6382549	23	<i>Agonis flexuosa</i>	Peppermint	3	1	2.8
373308	6382556	24	<i>Agonis flexuosa</i>	Peppermint	43.5	2	8
373309	6382557	25	<i>Agonis flexuosa</i>	Peppermint	10	4	5
373310	6382557	26	<i>Agonis flexuosa</i>	Peppermint	9.5	5	5
373309	6382557	27	<i>Agonis flexuosa</i>	Peppermint	9.8	7	4
373308	6382555	28	<i>Agonis flexuosa</i>	Peppermint	4	3	2.5
373316	6382551	29	<i>Agonis flexuosa</i>	Peppermint	4.5	10	4
373323	6382554	30	<i>Agonis flexuosa</i>	Peppermint	5	7	2.5

Easting	Northing	Waypoint	Species	Common name	DBH (cm)	No. stems	Approx. height (m)
373325	6382554	31	<i>Agonis flexuosa</i>	Peppermint	3	9	2.5
373327	6382555	32	<i>Agonis flexuosa</i>	Peppermint	4	18	2.5
373336	6382560	33	<i>Xylomelum occidentale</i>	Woody Pear	29	1	5
373334	6382562	34	<i>Xylomelum occidentale</i>	Woody Pear	22	1	5.5
373336	6382567	35	<i>Allocasuarina fraseriana</i>	Sheoak	49	1	6
373341	6382557	36	<i>Agonis flexuosa</i>	Peppermint	6	6	2.5
373345	6382558	37	<i>Agonis flexuosa</i>	Peppermint	5	6	2.5
373341	6382560	38	<i>Banksia attenuata</i>	Slender Banksia	6	1	2.5
373346	6382558	39	<i>Agonis flexuosa</i>	Peppermint	4	4	2.5
373345	6382561	40	<i>Agonis flexuosa</i>	Peppermint	6	9	2.5
373343	6382568	41	<i>Allocasuarina fraseriana</i>	Sheoak	32	1	5.5
373346	6382566	42	<i>Allocasuarina fraseriana</i>	Sheoak	26	3	6
373349	6382572	43	<i>Agonis flexuosa</i>	Peppermint	6	1	4
373350	6382572	44	<i>Agonis flexuosa</i>	Peppermint	8	1	5
373351	6382575	45	<i>Agonis flexuosa</i>	Peppermint	7	1	4
373353	6382571	46	<i>Agonis flexuosa</i>	Peppermint	3	1	2.5
373351	6382571	47	<i>Agonis flexuosa</i>	Peppermint	8	1	3.5
373355	6382571	48	<i>Agonis flexuosa</i>	Peppermint	4	1	4
373350	6382570	49	<i>Agonis flexuosa</i>	Peppermint	11	1	3.5
373355	6382572	50	<i>Templetonia retusa</i>	Cockies Tongues	2.5	1	3
373357	6382568	51	<i>Allocasuarina fraseriana</i>	Sheoak	18	1	4
373356	6382564	52	<i>Agonis flexuosa</i>	Peppermint	3	18	2.5
373360	6382574	53	<i>Agonis flexuosa</i>	Peppermint	33	3	6
373357	6382571	54	<i>Agonis flexuosa</i>	Peppermint	12.5	10	5.5
373361	6382575	55	<i>Eucalyptus gomphocephala</i>	Tuart	95.5	2	10
373358	6382580	56	<i>Allocasuarina fraseriana</i>	Sheoak	6.5	1	3
373362	6382563	57	<i>Agonis flexuosa</i>	Peppermint	2	9	2.5
373362	6382563	58	<i>Agonis flexuosa</i>	Peppermint	6	8	2.5
373362	6382564	59	<i>Banksia attenuata</i>	Slender Banksia	50	3	2.5
373359	6382560	60	<i>Agonis flexuosa</i>	Peppermint	3	4	2.5
373357	6382562	61	<i>Banksia attenuata</i>	Slender Banksia	10	1	3

Easting	Northing	Waypoint	Species	Common name	DBH (cm)	No. stems	Approx. height (m)
373357	6382559	62	<i>Agonis flexuosa</i>	Peppermint	4	3	3.5
373356	6382561	63	<i>Agonis flexuosa</i>	Peppermint	7	3	3
373353	6382561	64	<i>Agonis flexuosa</i>	Peppermint	6	2	3.5
373351	6382563	65	<i>Jacksonia furcellata</i>	Grey Stinkwood	8	1	5
373351	6382562	66	<i>Jacksonia furcellata</i>	Grey Stinkwood	7	1	5
373351	6382562	67	<i>Jacksonia furcellata</i>	Grey Stinkwood	9	1	4
373355	6382582	68	<i>Agonis flexuosa</i>	Peppermint	24	1	6
373355	6382582	69	<i>Agonis flexuosa</i>	Peppermint	11	1	6
373354	6382582	70	<i>Agonis flexuosa</i>	Peppermint	24	2	6
373353	6382582	71	<i>Agonis flexuosa</i>	Peppermint	18	1	6
373353	6382587	72	<i>Banksia attenuata</i>	Slender Banksia	20.5	3	5
373353	6382591	73	<i>Allocasuarina fraseriana</i>	Sheoak	37	2	5
373332	6382603	74	<i>Allocasuarina fraseriana</i>	Sheoak	35	1	6
373331	6382609	75	<i>Banksia attenuata</i>	Slender Banksia	13.5	1	4.5
373325	6382609	76	<i>Agonis flexuosa</i>	Peppermint	34	2	6.5
373324	6382603	77	<i>Agonis flexuosa</i>	Peppermint	17	4	6
373323	6382602	78	<i>Agonis flexuosa</i>	Peppermint	19	2	5
373325	6382602	79	<i>Agonis flexuosa</i>	Peppermint	20	2	5
373333	6382600	80	<i>Agonis flexuosa</i>	Peppermint	13	5	5
373334	6382599	81	<i>Agonis flexuosa</i>	Peppermint	19	2	5
373334	6382598	82	<i>Agonis flexuosa</i>	Peppermint	20	3	5
373334	6382598	83	<i>Agonis flexuosa</i>	Peppermint	19.5	2	5
373335	6382595	84	<i>Allocasuarina fraseriana</i>	Sheoak	36	1	6.5
373335	6382594	85	<i>Agonis flexuosa</i>	Peppermint	5.5	1	3
373340	6382584	86	<i>Allocasuarina fraseriana</i>	Sheoak	53	1	6.5
373340	6382584	87	<i>Agonis flexuosa</i>	Peppermint	24	2	6.5
373341	6382582	88	<i>Allocasuarina fraseriana</i>	Sheoak	33	1	6
373339	6382581	89	<i>Agonis flexuosa</i>	Peppermint	10	4	6.5
373339	6382580	90	<i>Agonis flexuosa</i>	Peppermint	18	4	6.5
373343	6382581	91	<i>Allocasuarina fraseriana</i>	Sheoak	46	1	6.5
373343	6382576	92	<i>Agonis flexuosa</i>	Peppermint	32	3	6

Easting	Northing	Waypoint	Species	Common name	DBH (cm)	No. stems	Approx. height (m)
373341	6382577	93	<i>Allocasuarina fraseriana</i>	Sheoak	35	1	7
373333	6382584	94	<i>Allocasuarina fraseriana</i>	Sheoak	12	1	6
373330	6382586	95	<i>Agonis flexuosa</i>	Peppermint	17	16	6
373332	6382589	96	<i>Agonis flexuosa</i>	Peppermint	16.5	4	6
373332	6382590	97	<i>Agonis flexuosa</i>	Peppermint	8.5	3	6
373328	6382591	98	<i>Eucalyptus gomphocephala</i>	Tuart	107	2	16
373324	6382598	99	<i>Agonis flexuosa</i>	Peppermint	12	20	6.5
373326	6382602	100	<i>Agonis flexuosa</i>	Peppermint	14	2	6
373325	6382602	101	<i>Agonis flexuosa</i>	Peppermint	18.5	2	6
373324	6382604	102	<i>Agonis flexuosa</i>	Peppermint	18	4	6
373320	6382593	103	<i>Allocasuarina fraseriana</i>	Sheoak	8	1	7
373319	6382594	104	<i>Agonis flexuosa</i>	Peppermint	32	4	6.5
373325	6382590	105	<i>Agonis flexuosa</i>	Peppermint	23	10	8
373326	6382591	106	<i>Agonis flexuosa</i>	Peppermint	20	4	8
373326	6382587	107	<i>Eucalyptus gomphocephala</i>	Tuart	26	3	10
373328	6382583	108	Dead		49	1	7
373329	6382575	110	<i>Allocasuarina fraseriana</i>	Sheoak	11	1	4.5
373327	6382577	111	<i>Allocasuarina fraseriana</i>	Sheoak	45	2	6
373334	6382573	112	Dead		44	1	6
373329	6382569	113	<i>Agonis flexuosa</i>	Peppermint	21	1	6
373325	6382565	114	<i>Agonis flexuosa</i>	Peppermint	5	1	3
373327	6382567	115	<i>Banksia attenuata</i>	Slender Banksia	37	2	6
373325	6382566	116	<i>Eucalyptus gomphocephala</i>	Tuart	66	1	15
373324	6382563	117	<i>Agonis flexuosa</i>	Peppermint	22	1	6
373320	6382567	118	<i>Allocasuarina fraseriana</i>	Sheoak	62	1	8
373318	6382570	119	<i>Eucalyptus gomphocephala</i>	Tuart	92	3	15
373322	6382582	120	<i>Banksia attenuata</i>	Slender Banksia	22	1	5.5
373320	6382589	121	<i>Allocasuarina fraseriana</i>	Sheoak	4	2	4
373318	6382588	122	<i>Allocasuarina fraseriana</i>	Sheoak	7	2	4
373315	6382589	123	<i>Banksia attenuata</i>	Slender Banksia	8	2	4
373317	6382595	124	<i>Agonis flexuosa</i>	Peppermint	34	4	7

Easting	Northing	Waypoint	Species	Common name	DBH (cm)	No. stems	Approx. height (m)
373312	6382602	125	<i>Banksia attenuata</i>	Slender Banksia	15	1	5
373311	6382599	126	<i>Banksia attenuata</i>	Slender Banksia	8	1	4
373313	6382591	127	<i>Allocasuarina fraseriana</i>	Sheoak	13	1	4
373311	6382590	128	<i>Banksia attenuata</i>	Slender Banksia	8	1	4.5
373306	6382597	129	<i>Allocasuarina fraseriana</i>	Sheoak	40	1	4
373309	6382591	130	<i>Banksia attenuata</i>	Slender Banksia	7.5	1	4
373314	6382588	131	<i>Banksia attenuata</i>	Slender Banksia	8	1	3
373316	6382585	132	<i>Agonis flexuosa</i>	Peppermint	34	2	10
373321	6382588	133	<i>Banksia attenuata</i>	Slender Banksia	9.5	1	3.5
373318	6382585	134	<i>Allocasuarina fraseriana</i>	Sheoak	7	1	3
373316	6382581	135	<i>Allocasuarina fraseriana</i>	Sheoak	54	2	8
373317	6382579	136	<i>Allocasuarina fraseriana</i>	Sheoak	29.5	1	7
373310	6382580	137	<i>Banksia attenuata</i>	Slender Banksia	11	1	4.5
373309	6382578	138	<i>Allocasuarina fraseriana</i>	Sheoak	37	1	6
373316	6382563	139	<i>Allocasuarina fraseriana</i>	Sheoak	51	1	7
373307	6382562	140	<i>Allocasuarina fraseriana</i>	Sheoak	8	1	6
373308	6382561	141	<i>Allocasuarina fraseriana</i>	Sheoak	31	1	8
373309	6382563	142	<i>Allocasuarina fraseriana</i>	Sheoak	42	1	7
373306	6382578	143	<i>Banksia attenuata</i>	Slender Banksia	22	2	5
373304	6382584	144	<i>Agonis flexuosa</i>	Peppermint	31	6	7
373304	6382583	145	<i>Allocasuarina fraseriana</i>	Sheoak	78	1	8
373304	6382586	146	<i>Banksia attenuata</i>	Slender Banksia	11	1	3
373304	6382593	147	<i>Banksia attenuata</i>	Slender Banksia	14	1	5
373303	6382593	148	<i>Banksia attenuata</i>	Slender Banksia	16	1	5
373302	6382593	149	<i>Banksia attenuata</i>	Slender Banksia	16	1	5
373299	6382591	150	<i>Banksia attenuata</i>	Slender Banksia	15	1	5
373302	6382564	151	<i>Allocasuarina fraseriana</i>	Sheoak	23.5	2	6
373302	6382563	152	<i>Xylomelum occidentale</i>	Woody Pear	19	1	4.5
373305	6382561	153	<i>Agonis flexuosa</i>	Peppermint	11	2	5.5
373304	6382567	154	<i>Allocasuarina fraseriana</i>	Sheoak	38	1	6
373302	6382572	155	<i>Banksia attenuata</i>	Slender Banksia	12	1	4

Easting	Northing	Waypoint	Species	Common name	DBH (cm)	No. stems	Approx. height (m)
373299	6382568	156	<i>Banksia attenuata</i>	Slender Banksia	11.5	1	4
373298	6382573	157	<i>Banksia attenuata</i>	Slender Banksia	8	1	4
373300	6382577	158	<i>Banksia attenuata</i>	Slender Banksia	21	1	5
373298	6382580	159	<i>Banksia attenuata</i>	Slender Banksia	10	1	6
373300	6382581	160	<i>Banksia attenuata</i>	Slender Banksia	17	1	6
373297	6382583	161	<i>Allocasuarina fraseriana</i>	Sheoak	15	1	6
373298	6382589	162	<i>Banksia attenuata</i>	Slender Banksia	12	1	3.5
373293	6382581	163	<i>Banksia attenuata</i>	Slender Banksia	32	1	6
373292	6382581	164	<i>Agonis flexuosa</i>	Peppermint	10	1	6
373293	6382577	165	<i>Corymbia calophylla</i>	Marri	10.5	2	4.5
373291	6382571	166	<i>Allocasuarina fraseriana</i>	Sheoak	46	1	6.5
373296	6382570	167	<i>Agonis flexuosa</i>	Peppermint	31	2	8
373295	6382571	168	<i>Agonis flexuosa</i>	Peppermint	23	2	6
373296	6382572	169	<i>Agonis flexuosa</i>	Peppermint	20	5	6
373295	6382567	170	<i>Allocasuarina fraseriana</i>	Sheoak	16	1	5
373297	6382563	171	Dead		26	1	4.5
373297	6382559	172	<i>Banksia attenuata</i>	Slender Banksia	11	1	3.5
373297	6382559	173	<i>Allocasuarina fraseriana</i>	Sheoak	39	3	8

Conclusions

No Threatened flora species listed under the EPBC Act or WC Act or Priority flora species listed by DBCA were recorded within the study area. Although the survey was not conducted within the recommended survey timing for threatened orchid species identified in the desktop review, the study area was considered unlikely to support these species due to the current condition of the habitat.

Four (4) trees were identified within the study area that meet the criteria for potential breeding trees for the threatened Black Cockatoo species (refer **Figure 3**). The proponent has advised that the nominated potential breeding trees located within the construction laydown area for the proposed NBN facility will be tagged and retained.

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Appendix A



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

Report created: 11/04/18 17:41:22

[Summary](#)

[Details](#)

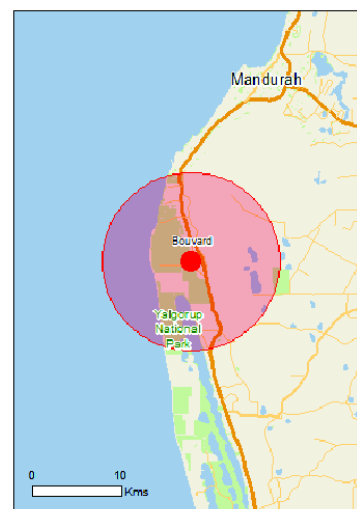
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

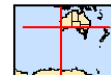
[Acknowledgements](#)



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

Buffer: 10.0Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	59
Listed Migratory Species:	63

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:	94
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:	12
Regional Forest Agreements:	None
Invasive Species:	22
Nationally Important Wetlands:	3
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar) [\[Resource Information \]](#)

Name	Proximity
Peel-yalgorup system	Within Ramsar site

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
Clay Pans of the Swan Coastal Plain	Critically Endangered	Community likely to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Thrombolite (microbialite) Community of a Coastal Brackish Lake (Lake Clifton)	Critically Endangered	Community known 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 may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area
Calyptorhynchus baudinii Baudin's Cockatoo, Long-billed Black-Cockatoo [769]	Endangered	Species or species habitat known to occur within area
Calyptorhynchus latirostris Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area

Name	Status	Type of Presence
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within 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 known to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or

Name	Status	Type of Presence
Thalassarche cauta_cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	related behaviour may occur within area Foraging, feeding or related behaviour likely to occur within area
Thalassarche cauta_steadii 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		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Dasyurus geoffroyi 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	Species or species habitat likely 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
Other		
Westralunio carteri Carter's Freshwater Mussel, Freshwater Mussel [86266]	Vulnerable	Species or species habitat likely to occur within area
Plants		
Andersonia gracilis Slender Andersonia [14470]	Endangered	Species or species habitat may occur within area
Banksia nivea subsp. uliginosa Swamp Honeypot [82766]	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
Diuris drummondii Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat likely to occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat known to occur within area

Name	Status	Type of Presence
Drakaea elastica Glossy-leaved Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat known to occur within area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat likely to occur within area
Eleocharis keigheryi Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat may occur within area
Synaphea sp. Fairbridge Farm (D. Papenfus 696) Selena's Synaphea [82881]	Critically Endangered	Species or species habitat likely to occur within area
Synaphea sp. Pinjarra Plain (A.S. George 17182) [86878]	Endangered	Species or species habitat likely to occur within area
Synaphea sp. Serpentine (G.R. Brand 103) [86879]	Critically Endangered	Species or species habitat may occur within area
Synaphea stenoloba Dwellingup Synaphea [66311]	Endangered	Species or species habitat likely to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sharks		
Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat known to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Ardenna carneipes Flesh-footed Shearwater, Flesh-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 dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sandfordi Northern Royal Albatross [89827]	Endangered*	Foraging, feeding or related behaviour likely to occur within area
Hydroprogne caspia Caspian Tern [808]		Foraging, feeding or related behaviour known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Onychoprion anaethetus Bridled Tern [82845]		Foraging, feeding or related behaviour likely to occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Sterna dougallii Roseate Tern [817]		Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	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
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Breeding known to occur within area

Name	Threatened	Type of Presence
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area

Name	Threatened	Type of Presence
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris subminuta Long-toed Stint [861]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area

Name	Threatened	Type of Presence
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Tringa totanus Common Redshank, Redshank [835]		Roosting known to occur within area

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		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area

Name	Threatened	Type of Presence
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris subminuta Long-toed Stint [861]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Catharacta skua Great Skua [59472]		Species or species habitat may occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Roosting known to occur within area

Name	Threatened	Type of Presence
Himantopus himantopus Black-winged Stilt [870]		Roosting known to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
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
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Puffinus assimilis Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
Puffinus carneipes Flesh-footed Shearwater, Flesh-footed Shearwater [1043]		Species or species habitat likely to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area

Name	Threatened	Type of Presence
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Sterna anaethetus Bridled Tern [814]		Foraging, feeding or related behaviour likely to occur within area
Sterna caspia Caspian Tern [59467]		Foraging, feeding or related behaviour known to occur within area
Sterna dougallii Roseate Tern [817]		Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	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
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thinornis rubricollis Hooded Plover [59510]		Breeding known to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Tringa totanus Common Redshank, Redshank [835]		Roosting known to occur within area
Fish		
Acentronura australe Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Hippocampus subelongatus West Australian Seahorse [66722]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus fatiloquus Prophet's Pipefish [66250]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys meraculus Western Crested Pipefish [66259]		Species or species habitat may occur within area
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Stigmatopora olivacea a pipefish [74966]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Vanacampus poecilolaemus Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammals		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	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	Foraging, feeding or related behaviour known to occur within area
Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area

Name	Status	Type of Presence
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Austin Bay	WA
Kooljerrenup	WA
Lake McLarty	WA
Lake Mealup	WA
McLarty	WA
Mealup Point	WA
NTWA Bushland covenant (0070)	WA
Unnamed WA44977	WA
Unnamed WA44978	WA
Unnamed WA51943	WA
Unnamed WA51944	WA
Yalgorup	WA

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

Name	Status	Type of Presence
Mammals		
<i>Felis catus</i> 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
<i>Mus musculus</i> House Mouse [120]		Species or species habitat likely to occur within area
<i>Oryctolagus cuniculus</i> Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
<i>Rattus rattus</i> Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
<i>Sus scrofa</i> Pig [6]		Species or species habitat likely to occur within area
<i>Vulpes vulpes</i> Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
<i>Asparagus asparagoides</i> Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
<i>Brachiaria mutica</i> Para Grass [5879]		Species or species habitat may occur within area
<i>Cenchrus ciliaris</i> Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
<i>Chrysanthemoides monilifera</i> Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
<i>Genista</i> sp. X <i>Genista monspessulana</i> Broom [67538]		Species or species habitat may occur within area
<i>Lantana camara</i> Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892] <i>Olea europaea</i> Olive, Common Olive [9160]		Species or species habitat likely to occur within area Species or species habitat may occur within area
<i>Pinus radiata</i> Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
<i>Rubus fruticosus</i> aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Nationally Important Wetlands		[Resource Information]
Name		State
Lake McLarty System		WA
Peel-Harvey Estuary		WA

Name	State
Yalgorup Lakes System	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

-32.68694 115.64861

Acknowledgements

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

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

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

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

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NatureMap Species Report

Created By Guest user on 11/04/2018

Kingdom	Plantae
Conservation Status	Conservation Taxon (T, X, IA, S, P1-P5)
Current Names Only	Yes
Core Datasets Only	Yes
Method	'By Circle'
Centre	115° 38' 55" E, 32° 41' 13" S
Buffer	10km
Group By	Conservation Status

Conservation Status	Species	Records
Priority 2	6	8
Priority 3	11	37
Priority 4	7	26
Rare or likely to become extinct	5	23
TOTAL	29	94

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
Rare or likely to become extinct				
1.	1596 <i>Caladenia huegellii</i> (Grand Spider Orchid)		T	
2.	10796 <i>Diuris drummondii</i> (Tall Donkey Orchid)		T	
3.	1637 <i>Diuris purdiei</i> (Purdie's Donkey Orchid)		T	
4.	1639 <i>Drakaea elastica</i> (Glossy-leaved Hammer Orchid)		T	
5.	2107 <i>Grevillea thelemanniana</i> (Spider Net Grevillea)		T	
Priority 2				
6.	3237 <i>Acacia benthamii</i>		P2	
7.	44894 <i>Caladenia swartziorum</i>		P2	Y
8.	3006 <i>Cardamine paucijuga</i>		P2	
9.	42008 <i>Craspedia</i> sp. <i>Waterloo</i> (G.J. Keighery 13724)		P2	
10.	41800 <i>Eryngium pinnatifidum</i> subsp. <i>Umbrophilum</i> (G.J. Keighery 13967)		P2	
11.	30295 <i>Gastrolobium</i> sp. <i>Hervey</i> (G.J. Keighery 16821)		P2	
Priority 3				
12.	19338 <i>Chamaescilla gibsonii</i>		P3	
13.	3863 <i>Dillwynia dillwynioides</i>		P3	
14.	41801 <i>Eryngium pinnatifidum</i> subsp. <i>Palustre</i> (G.J. Keighery 13459)		P3	
15.	11461 <i>Hibbertia spicata</i> subsp. <i>leptotheca</i>		P3	
16.	5038 <i>Lasiopetalum membranaceum</i>		P3	
17.	33638 <i>Meionectes tenuifolia</i>		P3	
18.	6193 <i>Myriophyllum echinatum</i>		P3	
19.	11132 <i>Pletysace ramosissima</i>		P3	
20.	20348 <i>Sphaerolobium calcicola</i>		P3	
21.	13127 <i>Stylidium maritimum</i>		P3	
22.	25800 <i>Stylidium peludicola</i>		P3	
Priority 4				
23.	13862 <i>Caladenia speciosa</i>		P4	
24.	11657 <i>Conostylis pauciflora</i> subsp. <i>pauciflora</i>		P4	
25.	35502 <i>Hakea oligoneura</i>		P4	
26.	36200 <i>Omduffia submersa</i>		P4	
27.	2435 <i>Rumex drummondii</i>		P4	
28.	7756 <i>Stylidium longitubum</i> (Jumping Jacks)		P4	
29.	44444 <i>Tripterococcus</i> sp. <i>Brachylobus</i> (A.S. George 14234)		P4	

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

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





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

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Appendix B

Categories of threatened species under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC act).

Threatened flora and fauna may be listed in any one of the following categories as defined in Section 179 of the EPBC Act. Species listed as 'conservation dependent' and 'extinct' are not Matters of National Environmental Significance and therefore do not trigger the EPBC Act.

Category	Definition
Extinct (EX)	There is no reasonable doubt that the last member of the species has died.
Extinct in the Wild (EW)	Taxa known to survive only in captivity or as a naturalised population well outside its past range; or taxa has not been recorded in its known and/or expected habitat at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
Critically Endangered (CE)	Taxa considered to be facing an extremely high risk of extinction in the wild.
Endangered (EN)	Taxa considered to be facing a very high risk of extinction in the wild.
Vulnerable (VU)	Taxa considered to be facing a high risk of extinction in the wild.
Near Threatened (NT)	Taxa has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.
Least Concern (LC)	Taxa has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.
Data Deficient (DD)	There is inadequate information to make a direct, or indirect, assessment of taxa's risk extinction based on its distribution and/or population status.
Not Evaluated (NE)	Taxa has not yet been evaluated against the criteria.
Migratory (M)	<p>Not an IUCN category.</p> <p>Species are defined as migratory if they are listed in an international agreement approved by the Commonwealth Environment Minister, including:</p> <ul style="list-style-type: none"> • the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animal) for which Australia is a range state; • the agreement between the Government of Australian and the Government of the People's Republic of China for the Protection of Migratory Birds and their environment (CAMBA); • the agreement between the Government of Japan and the Government of Australia for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment (JAMBA); or • the agreement between Australia and the Republic of Korea to develop a bilateral migratory bird agreement similar to the JAMBA and CAMBA in respect to migratory bird conservation and provides a basis for collaboration on the protection of migratory shorebirds and their habitat (ROKAMBA).

Conservation codes under the *Wildlife Conservation Act 1950 (WA) (WC Act)*

Specially protected fauna or flora are species which have been adequately searched for and are deemed to be, in the wild, either rare, at risk of extinction, or otherwise in need of special protection, and have been gazetted as such.

Threatened species (T)

Published as Specially Protected under the Wildlife Conservation Act 1950, and listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).

Threatened fauna is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the Wildlife Conservation Act.

Threatened flora is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the Wildlife Conservation Act.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

Schedule	Code	Description
Schedule 1 Critically Endangered species	S1 (CR)	Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the Wildlife Conservation Act 1950, in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
Schedule 2 Endangered species	S2 (EN)	Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the Wildlife Conservation Act 1950, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
Schedule 3 Vulnerable species	S3 (VU)	Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the Wildlife Conservation Act 1950, in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
Schedule 4 Presumed extinct species	S4 (EX)	Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the Wildlife Conservation Act 1950, in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.
Schedule 5	S5 (IA)	Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention,

Schedule	Code	Description
Migratory birds protected under an international agreement		relating to the protection of migratory birds. Published as Specially Protected under the Wildlife Conservation Act 1950, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.
Schedule 6 Conservation dependent fauna	S6 (CD)	Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the Wildlife Conservation Act 1950, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.
Schedule 7 Other specially protected fauna	S7 (OS)	Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the Wildlife Conservation Act 1950, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.

Priority species (P)

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened flora or fauna.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

Category	Code	Definition
Priority 1	P1	<i>Poorly-known species</i> Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
Priority 2	P2	<i>Poorly-known species</i> Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations

Category	Code	Definition
		but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
Priority 3	P3	<p><i>Poorly-known species</i></p> <p>Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.</p>
Priority 4	P4	<p><i>Rare, Near Threatened and other species in need of monitoring</i></p> <p>(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.</p> <p>(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.</p> <p>(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.</p>

Appendix C

Likelihood of occurrence criteria for conservation listed flora and fauna occurring in the study area

- Likelihood: Recorded.
 - The species has previously been recorded within study area from DPaW database search results and/or from previous surveys of the study area, and/or the species has been confirmed through a current vouchered specimen at WA Herbarium.
- Likelihood: Likely.
 - The species has not previously been recorded from within the study area. However:
 - the species has been recorded in close proximity to the study area, and occurs in similar habitat to that which occurs within the study area
 - core habitat and suitable landforms for the species occurs within the study area either year-round or seasonally. In relation to fauna species, this could be that a host plant is seasonally present on site, or habitat features such as caves are present that may be used during particular times during its life cycle e.g. for breeding. In relation to both flora and fauna species, it may be there are seasonal wetlands present
 - there is a medium to high probability that a species uses the study area
- Likelihood: Potential.
 - The species has not previously been recorded from within the study area. However,
 - targeted surveys may locate the species based on records occurring in proximity to the study area and suitable habitat occurring in the study area
 - the study area has been assessed as having potentially suitable habitat through habitat modelling
 - the species is known to be cryptic and may not have been detected despite extensive surveys
 - the species is highly mobile and has an extensive foraging range so may not have been detected during previous surveys
 - The species has been recorded in the study area by a previous consultant survey or there is historic evidence of species occurrence within the study area. However,
 - doubt remains over taxonomic identification, or the majority of habitat does not appear suitable (although presence cannot be ruled out due to factors such as species ecology or distribution)
 - coordinates are doubtful
- Likelihood: Unlikely.
 - The species has been recorded locally through DPaW database searches. However, it has not been recorded within the study area and
 - it is unlikely to occur due to the site lacking critical habitat, having at best marginally suitable habitat, and/or being severely degraded
 - it is unlikely to occur due to few historic record/s and no other current collections in the local area.
 - The species has been recorded within the bioregion based on literature review but has not been recorded locally or within the study area through DPaW database searches.

- The species has not been recorded in the study area despite adequate survey efforts, such as a standardised methodology or targeted searching within potentially suitable habitat.
- Likelihood: No.
 - The species is not known to occur within the IBRA bioregion based on current literature and distribution.
 - The study area lacks important habitat for a species that has highly selective habitat requirements.
 - The species has been historically recorded within study area or locally; however it is considered locally extinct due to significant habitat changes such as land clearing and/or introduced predators.