RE: Lots 7 and 8 Harris Rd Preliminary Fauna Assessment

Our preliminary assessment of fauna habitat was undertaken on Lots 7 and 8 Harris Road, Picton on 22 January 2013 (**Figure 1**). During this assessment, the value of remnant vegetation within Lots 7 and 8 as habitat for Environmental Protection and Biodiversity Conservation Act (2000, EPBC Act) listed fauna species was investigated, and a search was made for evidence of any such species utilising the site. Flora species listed under the EPBC Act known to occur within 5km of the site were also opportunistically searched for. As directed, the survey was undertaken based on the assumption that all remaining native vegetation would be cleared under the current development proposal.

Initial target fauna species were the Western Ringtail Possum (WRP) (*Pseudocheirus occidentalis*), Baudin's Cockatoo (*Calyptorhynchus baudinii*), Carnaby's Cockatoo (*Calyptorhynchus latirostris*) and the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*), all of which are known to occur within 5 km of the site (**Appendix 1**).

The entire site was surveyed on foot by a botanist/ecologist and junior zoologist. During the survey, a search was made for individual WRPs as well as their scats and dreys and potential daytime refuge sites. An assessment of the amount and quality of WRP habitat on site was also made. In addition to this, a search for evidence of Black Cockatoo feeding, nesting and/or roosting was undertaken. A preliminary list of native flora and fauna species observed on site was compiled (**Appendix 2**).

After the field survey was completed, the area of potential Black Cockatoo and WRP habitat proposed to be cleared was calculated using GIS.

Vegetation description

Approximately sixty percent of Lots 7 and 8 have are devoid of native vegetation, with disturbance associated with historical clearing and grazing apparent (**Photos 1** and **2**). Cleared areas are dominated by weeds (mainly Veldt grass) and expanses of bare sand.

Heddle *et al.* (1980) mapped the site as supporting Southern River Complex vegetation, which is described as 'an open woodland of *Corymbia calophylla*, *Eucalyptus marginata* and *Banksia* species with fringing woodlands of *Eucalyptus rudis* and *Melaleuca rhaphiophylla* along creek beds'.

Vegetation remaining on the site can be classified into two types: upland and wetland. Upland vegetation consists mainly of Peppermint (*Agonis flexuosa*) over exotic grasses, particularly Veldt grass (*Ehrharta calycina* and *E. longiflora*). *Xylomelum occidentale* occur very occasionally, as do native understorey species such as Daviesia sp., Leucopogon sp., *Xanthorrhoea gracilis, Xanthorrhoea brunonis* and *Hardenbergia comptoniana.* Wetland vegetation consists of *Agonis flexuosa* and *Melaleuca rhaphiophylla* over scattered *Hypolaena exscula, Kunzea glabrescens, Xanthorrhoea gracilis* and *Xanthorrhoea brunonis* with very occasional *Acacia pulchella, Hypocalymma angustifolium* and *Jacksonia furcellata*.

Upland areas contain a combination of large, mature and regrowth peppermints while the wetland area lacks mature individuals.

While both the upland and wetland areas provide habitat value, they are species-poor and in terms of their vegetation condition according to the scale of Keighery (1994), the wetland vegetation is classed as 'Degraded' while upland vegetation is 'Completely degraded' (**Table 1**). The site contains few juvenile trees of any species and there is no evidence of recruitment.

Results

A small number of WRP scats were observed on/around three *Agonis flexuosa* trees (**Figure 2**). No dreys ('nests' of small sticks and foliage used for daytime refuge) were observed, however this does not indicate that dreys are not present onsite.

All the remnant vegetation within Lots 7 and 8 has the potential to be used by WRPs as habitat (refuge, foraging or dispersal), particularly due to the dominance of Peppermint (a year-round food source for WRPs) and the high degree canopy connectivity. That observations of WRP scats were made at various locations throughout the site supports this conclusion. As well as peppermint, WRPs also favour jarrah, marri and kunzea, all of which also occur on the site, albeit in very low density.

SCORE	DESCRIPTION
Pristine (1)	Pristine or nearly so, no obvious signs 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 very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.
Degraded (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 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.

Table 1. Vegetation condition ratings according to Keighery (1994)

No evidence of Black Cockatoo feeding, roosting or nesting was observed.

No federally listed flora species were observed however this was expected as a) vegetation onsite has largely been cleared and/or subject to considerable disturbance in the past and as such very little native understorey remains, and b) the assessment occurred in high-summer instead of during spring, which is the appropriate season for undertaking flora surveys in southwest Western Australia. It should be noted that the primary focus of this preliminary survey was fauna species of conservation significance, with flora observed opportunistically; hence the summer survey timing is not inappropriate.

Implications of findings and recommendations

Under the current proposal, 1.87 ha of upland and wetland vegetation will be cleared, all of which constitutes habitat used or potentially used by the *EPBC Act* listed western ringtail possum (**Figure 3**).

Of this area, 1.2 ha has continuous canopy connectivity, which is of particular importance to WRPs as they prefer to stay aloft in the canopy and move from tree to tree using connecting branches rather than coming to ground.

The Department of Environment, Water, Heritage and the Arts (DEWHA) Policy Statement 3.10 (2009) summarises what scale of actions would be considered likely to have a significant impact on WRPs in the southern swan coastal plain. Within the policy statement, an action is deemed likely to have a significant impact on the WRP in the southern Swan Coastal Plain Region if it:

- reduces the ability of the region to support the persistence of the western ringtail possum; or
- modifies, destroys, removes or isolates important remnant habitat patches, or decreases the availability or quality of remnant habitat patches; or
- adversely affects connections between important areas; or
- interferes substantially with the ability of the area to effectively contribute to the recovery of the species.

More specifically, the guidelines have categorised certain areas between Bunbury and Dunsborough as 'Core Habitat', 'Primary Corridors' or 'Supporting Habitat'. Lots 7 and 8 fall within the 'Supporting Habitat' zone (also referred to as Area 3). Within areas of supporting habitat, a 'significant impact' on WRPs is deemed as 'likely' if there is a real chance or possibility that an action will result in:

- any clearing of a remnant habitat patch that is greater than 0.5 hectares in size;
- the clearing of more than 50% of a remnant habitat patch that is between 0.2 and 0.5 hectares in size;
- the fragmentation of any existing habitat linkages.

The proposed clearing at the site will compromise the first and second criteria and will therefore be seen by DSEWPaC as being likely to have a significant impact on WRPs. It is therefore recommended that a referral detailing the proposed action (clearing) be submitted to DSEWPaC to ensure compliance with the *EPBC Act*.

Under the state approval process, a clearing permit will also need to be obtained from the Department of Environment and Conservation (DEC).

Offsetting potential impacts of the proposed clearing

Depending on the outcome of assessments by the DEC and DSEWPaC, an offset proposal may be required in which impacts resulting from the intended clearing are mitigated through either a direct or indirect offset, most likely in this case to be the re-planting of WRP habitat, i.e. peppermints, in dense stands. In order to assist with the development of a direct offset proposal, a concept diagram of a proposed offset planting area totalling 1.51 ha is presented in **Figure 4**. Under this proposal, only 1.51 ha of existing vegetation would require clearing, hence the reduced area under offset.

Note that the amount of re-planting required to offset likely impacts can only be determined by DSEWPaC and/or DEC, if an offset is also required under the state approval process, and that the concept presented in **Figure 4** is provided only to assist with an investigation into offset options.

An indirect offset, where funds are contributed to establish and/or manage WRP habitat offsite, such as on DEC managed land, or to further research, or a combination of both direct and indirect offsets, may also be an option in this circumstance. In a recent case within the vicinity of the site, the proponents were required to undertake replanting a small area onsite with local native species and also to contribute a sum of money to the DEC to assist with the management of WRP habitat in another area. It is possible that this would be the most appropriate approach for Lots 7 and 8.

Additional recommendations

- Ideally, wetland vegetation would be retained onsite, with any revegetation/offset planting undertaken around and immediately upland of this area. In this way, multiple habitat types will be made available to any remaining WRPs.
- Cleared vegetation, if not intended to be used for habitat enhancement, should be removed from site or chipped on the day of clearing. If vegetation must be stockpiled, it should be positioned as far away from retained vegetation as possible to reduce the chances of it being used as a refuge by displaced fauna.
- All staff working on site should be made aware that all native fauna is protected and unnecessary interference with native animals should be discouraged.
- Native fauna injured during clearing or normal site operations should be taken to a designated veterinary clinic or a DEC nominated wildlife carer.

Conclusion

In summary, one vertebrate fauna species of conservation significance (i.e. listed as State or Federal threatened/migratory species or as DEC priority species) was positively identified as utilising the study area for some purpose during the site assessment, this being the Western Ringtail Possum (*Pseudocheirus occidentalis*).

References

(Not necessarily cited)

de Tores, P., Rosier, S. & Paine, G. (1998). *Conserving the Western Ringtail Possum*. LANDSCOPE 13(4): 28.

Department of Environment and Conservation (2012). *NatureMap Database search*. Study area (plus 5km buffer), 22 January 2013

Department of the Environment and Heritage (DEH) (2006). *EPBC Act - Principal Significant Impact Guidelines 1.1, Matters of National Environmental Significance.* EPBC Act Policy Statement.

Department of the Environment, Water, Heritage and the Arts (DEWHA) (2008). *Background Paper to the EPBC Act Policy Statement 3.10 – Nationally Threatened Species and Ecological Communities. "Significant Impact Guidelines for the vulnerable western ringtail possum (Pseudocheirus occidentalis) in the southern Swan Coastal Plain, Western Australia".*

Department of the Environment, Water, Heritage and the Arts (DEWHA) (2009a). *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Policy Statement 3.10 "Significant Impact Guidelines for the vulnerable western ringtail possum (Pseudocheirus occidentalis) in the southern Swan Coastal Plain, Western Australia".*

Environmental Protection Authority (EPA) (2002). *Terrestrial Biological Surveys As An Element of Biodiversity Protection.* Position Statement No. 3. EPA, Perth.

Environmental Protection Authority (EPA), (2003a). *Level of Assessment for Proposals Affecting Natural Areas Within the System 6 Region and Swan Coastal Plain Portion of the System 1 Region.* Guidance Statement 10.

Environmental Protection Authority (EPA) (2004). *Guidance for the Assessment of Environmental Factors - Terrestrial fauna surveys for environmental impact assessment in Western Australia.* Guidance Statement No 56 EPA, Perth.

Environmental Protection Authority (EPA) (2008). *Advice on areas of conservation significance in the Preston Industrial Park.* Bulletin 1282 March 2008.

Environmental Protection Authority (EPA) and Department of Environment and Conservation (DEC) (2010). *Technical Guide – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessments* (eds B.M. Hyder, J. Dell and M.A. Cowan), Perth Western Australia.

Keighery, B. J. (1994). *Bushland Plant Survey: a Guide to Plant Community Surveys for the Community.* Wildflower Society of Western Australia (Inc.) Nedlands, Western Australia.



Figure 1. Aerial photograph of the site

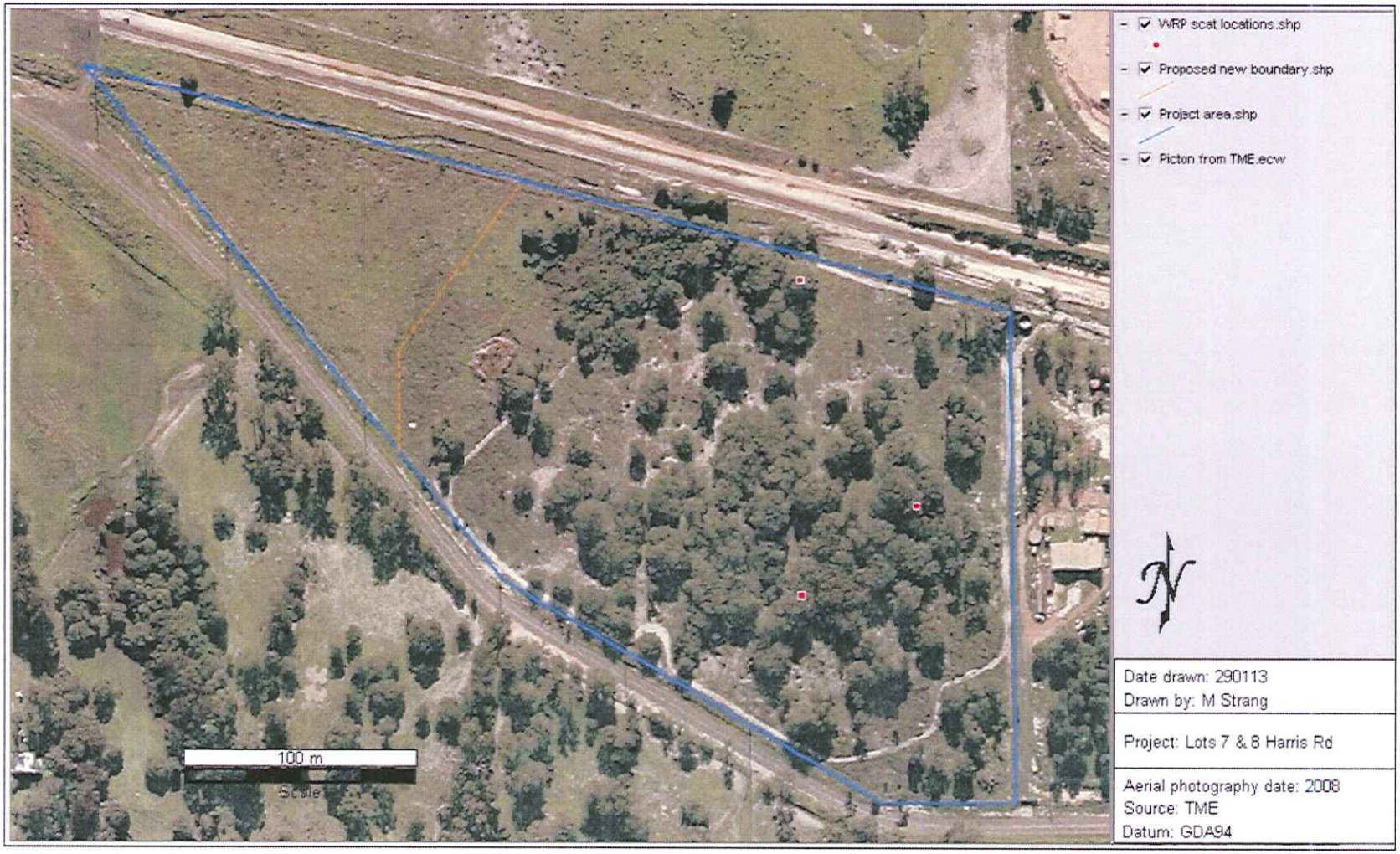


Figure 2. Location of WRP scats found on site



FIGURE 3. Proposed clearing and offset areas.



Photo 1. Showing regrowth peppermint trees (*Agonis flexuosa*)



Photo 2. Upland vegetation on site of Peppermint woodland over exotic grasses.

NatureMap
Mapping Western Australia's biodiversity

Appendix 1.

NatureMap Species Report

Created By Guest user on 22/01/2013

Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 115°42' 47" E,33°21' 17" S
Buffer 5km
Group By Conservation Status

Conservation Status	Species	Records
Rare or likely to become extinct	6	18
Protected under international agreement	6	9
Other specially protected fauna	1	1
Priority 1	2	3
Priority 3	5	11
Priority 4	5	12
Priority 5	1	1
Non-conservation taxon	255	926
TOTAL	**281**	**981**

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Rare or likely to become extinct					
1.	24731	*Calyptorhynchus banksii subsp. naso (Forest Red-tailed Black-Cockatoo)*		T	
2.	24733	*Calyptorhynchus baudinii (Baudin's Cockatoo (long-billed black-cockatoo))*		T	
3.	24092	*Dasyurus geoffroii (Chuditch, Western Quoll)*		T	
4.	10796	*Diuris drummondii (Tall Donkey Orchid)*		T	
5.	24099	*Phascogale tapoatafa subsp. tapoatafa (Southern Brush-tailed Phascogale, Wambenger)*		T	
6.	24166	*Pseudocheirus occidentalis (Western Ringtail Possum)*		T	
Protected under international agreement					
7.	41323	*Actitis hypoleucos (Common Sandpiper)*		IA	
8.	25558	*Ardea ibis (Cattle Egret)*		IA	
9.	24784	*Calidris ferruginea (Curlew Sandpiper)*		IA	
10.	24598	*Merops ornatus (Rainbow Bee-eater)*		IA	
11.	24383	*Pluvialis squatarola (Grey Plover)*		IA	
12.	24808	*Tringa nebularia (Common Greenshank)*		IA	
Other specially protected fauna					
13.	25624	*Falco peregrinus (Peregrine Falcon)*		S	
Priority 1					
14.	759	*Carex tereticaulis*		P1	
15.	34030	*Geotria australis (Pouched Lamprey)*		P1	
Priority 3					
16.	7829	*Angianthus drummondii*		P3	
17.	24347	*Ixobrychus flavicollis subsp. australis (Australian Black Bittern)*		P3	
18.	5038	*Lasiopetalum membranaceum*		P3	
19.	17976	*Meeboldina decipiens subsp. decipiens*		P3	
20.	12392	*Verticordia attenuata*		P3	
Priority 4					
21.	3339	*Acacia flagelliformis*		P4	
22.	141	*Aponogeton hexatepalus (Stalked Water Ribbons)*		P4	
23.	13862	*Caladenia speciosa*		P4	
24.	36200	*Orndutfia submersa*		P4	
25.	4183	*Pultenaea skinneri (Skinner's Pea)*		P4	
Priority 5					
26.	24153	*Isoodon obesulus subsp. fusciventer (Quenda, Southern Brown Bandicoot)*		P5	
Non-conservation taxon					
27.	15466	*Acacia applanata*			
28.	3383	*Acacia incurva*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
29.	3410	*Acacia lateriticola*			
30.	17464	*Acacia longifolia subsp. longifolia*	Y		
31.	3442	*Acacia microbotrya (Manna Wattle)*			
32.	3527	*Acacia saligna (Orange Wattle)*			
33.	3591	*Acacia urophylla*			
34.	24260	*Acanthiza apicalis (Broad-tailed Thornbill)*			
35.	24261	*Acanthiza chrysorrhoa (Yellow-rumped Thornbill)*			
36.	24262	*Acanthiza inornata (Western Thornbill)*			
37.	-19786	*Acritoscincus trilineatus*			
38.	25755	*Acrocephalus australis (Australian Reed Warbler)*			
39.	1790	*Adenanthos meisneri*			
40.	-14144	*Aname mainae*			
41.	24310	*Anas castanea (Chestnut Teal)*			
42.	24312	*Anas gracilis (Grey Teal)*			
43.	24315	*Anas rhynchotis (Australasian Shoveler)*			
44.	24316	*Anas superciliosa (Pacific Black Duck)*			
45.	7833	*Angianthus preissianus*			
46.	29487	*Anigozanthos manglesii var. x angustifolius*			
47.	11566	*Anigozanthos viridis subsp. viridis*			
48.	24561	*Anthochaera carunculata (Red Wattlebird)*			
49.	12724	*Anthotium junciforme*			
50.	3692	*Aotus procumbens*			
51.	25566	*Artamus cinereus (Black-faced Woodswallow)*			
52.	-13868	*Artoriopsis expolita*			
53.	20350	*Astartea affinis*			
54.	20283	*Astartea scoparia*			
55.	17708	*Astartea sp. Gingalup (N. Gibson & M. Lyons 119)*			
56.	6334	*Astroloma pallidum (Kick Bush)*			
57.	17253	*Austrostipa semibarbata*			
58.	234	*Avena fatua (Wild Oat)*	Y		
59.	24318	*Aythya australis (Hardhead)*			
60.	17737	*Azolla pinnata*			
61.	18279	*Babiana angustifolia*	Y		
62.	24319	*Biziura lobata (Musk Duck)*			
63.	4417	*Boronia dichotoma*			
64.	12770	*Burchardia congesta*			
65.	1385	*Burchardia multiflora (Dwarf Burchardia)*			
66.	25716	*Cacatua sanguinea (Little Corella)*			
67.	15579	*Caladenia chapmanii*			
68.	4717	*Callitriche stagnalis (Common Starwort)*	Y		
69.	5458	*Calytrix flavescens (Summer Starflower)*			
70.	32338	*Campylopus introflexus*	Y		
71.	27645	*Candelariella xanthostigmoides*			
72.	1162	*Cartonema philydroides*			
73.	11799	*Cassytha racemosa forma racemosa*			
74.	1125	*Centrolepis drummondiana*			
75.	24086	*Cercartetus concinnus (Western Pygmy-possum)*			
76.	24321	*Chenonetta jubata (Australian Wood Duck)*			
77.	2483	*Chenopodium album (Fat Hen)*	Y		
78.	24980	*Christinus marmoratus (Marbled Gecko)*			
79.	24288	*Circus approximans (Swamp Harrier)*			
80.	25675	*Colluricincla harmonica (Grey Shrike-thrush)*			
81.	24399	*Columba livia (Domestic Pigeon)*	Y		
82.	4554	*Comesperma flavum*			
83.	4559	*Comesperma polygaloides (Small Milkwort)*			
84.	11826	*Conostylis aculeata subsp. aculeata*			
85.	25568	*Coracina novaehollandiae (Black-faced Cuckoo-shrike)*			
86.	277	*Cortaderia selloana (Pampas Grass)*	Y		
87.	25592	*Corvus coronoides (Australian Raven)*			
88.	11283	*Corynotheca micrantha var. micrantha*			
89.	7947	*Cotula turbinata (Funnel Weed)*	Y		
90.	25595	*Cracticus tibicen (Australian Magpie)*			
91.	25596	*Cracticus torquatus (Grey Butcherbird)*			
92.	11563	*Crassula colorata var. colorata*			
93.	29054	*Crepis foetida subsp. foetida*	Y		
94.	25398	*Crinia georgiana (Quacking Frog)*			
95.	25400	*Crinia insignifera (Squelching Froglet)*			
96.	30893	*Cryptoblepharus buchananii*			
97.	25047	*Ctenotus impar*			
98.	25049	*Ctenotus labillardieri*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
99.	15404	*Cyanicula sericea*			
100.	24322	*Cygnus atratus (Black Swan)*			
101.	792	*Cyperus eragrostis (Umbrella Sedge)*	Y		
102.	18318	*Cyperus involucratus*	Y		
103.	30901	*Dacelo novaeguineae (Laughing Kookaburra)*	Y		
104.	7454	*Dampiera linearis (Common Dampiera)*			
105.	1218	*Dasypogon bromeliifolius (Pineapple Bush)*			
106.	3816	*Daviesia incrassata*			
107.	3832	*Daviesia physodes*			
108.	3834	*Daviesia polyphylla*			
109.	15453	*Drosera gigantea subsp. gigantea*			
110.	3106	*Drosera macrantha (Bridal Rainbow)*			
111.	33500	*Dysphania ambrosioides (Mexican Tea)*	Y		
112.	25100	*Egernia napoleonis*			
113.	25250	*Elapognathus coronatus (Crowned Snake)*			
114.	24652	*Eopsaltria georgiana (White-breasted Robin)*			
115.	5763	*Eucalyptus rudis (Flooded Gum)*			
116.	13032	*Eucalyptus vegrandis*			
117.	3880	*Eutaxia virgata*			
118.	25622	*Falco cenchroides (Australian Kestrel)*			
119.	27748	*Flavoparmelia rutidota*			
120.	25727	*Fulica atra (Eurasian Coot)*			
121.	25729	*Gallinula tenebrosa (Dusky Moorhen)*			
122.	24765	*Gallirallus philippensis subsp. mellori*			
123.	3891	*Gastrolobium bilobum (Heart Leaf Poison)*			
124.	20475	*Gastrolobium capitatum*			
125.	19190	*Gastrolobium cuneatum*			
126.	20473	*Gastrolobium ebracteolatum*			
127.	25404	*Geocrinia leai (Ticking Frog)*			
128.	25530	*Gerygone fusca (Western Gerygone)*			
129.	7060	*Glossostigma diandrum*			
130.	3948	*Gompholobium capitatum*			
131.	3954	*Gompholobium polymorphum*			
132.	3956	*Gompholobium shuttleworthii*			
133.	7505	*Goodenia eatoniana*			
134.	19286	*Goodenia pulchella subsp. Coastal Plain A (M. Hislop 634)*			
135.	24443	*Grallina cyanoleuca (Magpie-lark)*			
136.	37500	*Grammatotheca bergiana var. bergiana*	Y		
137.	19628	*Grevillea bipinnatifida subsp. bipinnatifida*			
138.	24487	*Haematopus longirostris (Pied Oystercatcher)*			
139.	1472	*Haemodorum simplex*			
140.	2137	*Hakea ceratophylla (Horned Leaf Hakea)*			
141.	2212	*Hakea sulcata (Furrowed Hakea)*			
142.	2216	*Hakea varia (Variable-leaved Hakea)*			
143.	25410	*Heleioporus eyrei (Moaning Frog)*			
144.	25119	*Hemiergis quadrilineata*			
145.	27775	*Heterodermia japonica*			
146.	20051	*Hibbertia diamesogenos*			
147.	5172	*Hibbertia stellaris (Orange Stars)*			
148.	24491	*Hirundo neoxena (Welcome Swallow)*			
149.	6222	*Homalosciadium homalocarpum*			
150.	12717	*Hyalosperma pusillum*			
151.	5817	*Hypocalymma angustifolium (White Myrtle)*			
152.	1071	*Hypolaena fastigiata*			
153.	17841	*Hypolaena pubescens*			
154.	11845	*Hypoxis occidentalis var. quadriloba*			
155.	-14290	*Idiosoma sigillatum*			
156.	912	*Isolepis cyperoides*			
157.	917	*Isolepis marginata (Coarse Club-rush)*	Y		
158.	10831	*Isolepis prolifera (Budding Club-rush)*	Y		
159.	4012	*Jacksonia furcellata (Grey Stinkwood)*			
160.	4017	*Jacksonia horrida*			
161.	1178	*Juncus bufonius (Toad Rush)*	Y		
162.	1188	*Juncus pallidus (Pale Rush)*			
163.	5835	*Kunzea micrantha*			
164.	17461	*Kunzea micrantha subsp. micrantha*			
165.	14647	*Lagunaria patersonia subsp. patersonia*	Y		
166.	38323	*Lavandula stoechas subsp. stoechas*	Y		
167.	7572	*Lechenaultia expansa*			
168.	2342	*Leptomeria cunninghamii*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
169.	1085	*Lepyrodia glauca*			
170.	25131	*Lerista distinguenda*			
171.	25133	*Lerista elegans*			
172.	6436	*Leucopogon propinquus*			
173.	25005	*Lialis burtonis*			
174.	24581	*Lichenostomus virescens (Singing Honeyeater)*			
175.	25661	*Lichmera indistincta (Brown Honeyeater)*			
176.	25415	*Limnodynastes dorsalis (Western Banjo Frog)*			
177.	4363	*Linum trigynum (French Flax)*	Y		
178.	36180	*Liparophyllum latifolium*			
179.	25378	*Litoria adelaidensis (Slender Tree Frog)*			
180.	1236	*Lomandra odora (Tiered Matrush)*			
181.	1239	*Lomandra preissii*			
182.	1246	*Lomandra suaveolens*			
183.	4067	*Lupinus luteus (Yellow Lupin)*	Y		
184.	25654	*Malurus splendens (Splendid Fairy-wren)*			
185.	17679	*Meeboldina coangustata*			
186.	5926	*Melaleuca lateritia (Robin Redbreast Bush)*			
187.	20297	*Melaleuca osullivanii*			
188.	5946	*Melaleuca pauciflora*			
189.	5959	*Melaleuca rhaphiophylla (Swamp Paperbark)*			
190.	5978	*Melaleuca teretifolia (Banbar)*			
191.	5980	*Melaleuca thymoides*			
192.	19827	*Melilotus siculus*	Y		
193.	25184	*Menetia greyii*			
194.	15419	*Microtis media subsp. media*			
195.	-13593	*Missulena granulosa subsp. granulosa*			
196.	19179	*Moraea flaccida (One-leaf Cape Tulip)*	Y		
197.	19178	*Moraea lewisiae*	Y		
198.	25191	*Morethia lineoocellata*			
199.	24738	*Neophema elegans (Elegant Parrot)*			
200.	492	*Neurachne alopecuroidea (Foxtail Mulga Grass)*			
201.	24407	*Ocyphaps lophotes (Crested Pigeon)*			
202.	6140	*Oenothera mollissima*	Y		
203.	8133	*Olearia elaeophila*			
204.	24328	*Oxyura australis (Blue-billed Duck)*			
205.	25679	*Pachycephala pectoralis (Golden Whistler)*			
206.	25680	*Pachycephala rufiventris (Rufous Whistler)*			
207.	25682	*Pardalotus striatus (Striated Pardalote)*			
208.	24648	*Pelecanus conspicillatus (Australian Pelican)*			
209.	16477	*Pericalymma ellipticum var. ellipticum*			
210.	25697	*Phalacrocorax carbo (Great Cormorant)*			
211.	24667	*Phalacrocorax sulcirostris (Little Black Cormorant)*			
212.	25699	*Phalacrocorax varius (Pied Cormorant)*			
213.	24409	*Phaps chalcoptera (Common Bronzewing)*			
214.	18529	*Philotheca spicata (Pepper and Salt)*			
215.	1173	*Philydrella pygmaea (Butterfly Flowers)*			
216.	24596	*Phylidonyris novaehollandiae (New Holland Honeyeater)*			
217.	27968	*Physcia albicans*			
218.		*Phytophthora cinnamomi*			
219.	5252	*Pimelea lanata*			
220.	11639	*Pimelea longiflora subsp. longiflora*			
221.	16322	*Pittosporum undulatum*	Y		
222.	24841	*Platalea flavipes (Yellow-billed Spoonbill)*			
223.	25720	*Platycercus icterotis (Western Rosella)*			
224.	25704	*Podiceps cristatus (Great Crested Grebe)*			
225.	8172	*Podolepis canescens*			
226.	24907	*Pogona minor subsp. minor*			
227.	24681	*Poliocephalus poliocephalus (Hoary-headed Grebe)*			
228.	25722	*Polytelis anthopeplus (Regent Parrot)*			
229.	25731	*Porphyrio porphyrio (Purple Swamphen)*			
230.	15424	*Praecoxanthus aphyllus*			
231.	1676	*Prasophyllum hians (Yawning Leek Orchid)*			
232.	1680	*Prasophyllum parvifolium (Autumn Leek Orchid)*			
233.	25259	*Pseudonaja affinis subsp. affinis (Dugite)*			
234.	1685	*Pterostylis angusta*			
235.	2718	*Ptilotus drummondii (Narrowleaf Mulla Mulla)*			
236.	19183	*Retama raetam*	Y		
237.	25613	*Rhipidura fuliginosa (Grey Fantail)*			
238.	25614	*Rhipidura leucophrys (Willie Wagtail)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
239.	13300	*Rhodanthe citrina*			
240.	13312	*Rhodanthe pyrethrum*			
241.	28045	*Rimelia reticulata*			
242.	1556	*Romulea rosea (Guildford Grass)*	Y		
243.	10931	*Rosa chinensis x moschata*	Y		
244.	609	*Setaria palmifolia (Palm Grass)*	Y		
245.	8227	*Silybum marianum (Variegated Thistle)*	Y		
246.	30948	*Smicrornis brevirostris (Weebill)*			
247.	1558	*Sparaxis bulbifera*	Y		
248.	2912	*Spergula arvensis (Corn Spurry)*	Y		
249.	6930	*Stachys arvensis (Staggerweed)*	Y		
250.	19403	*Stenopetalum gracile*			
251.	636	*Stenotaphrum secundatum (Buffalo Grass)*	Y		
252.	25597	*Strepera versicolor (Grey Currawong)*			
253.	25590	*Streptopelia senegalensis (Laughing Turtle-Dove)*	Y		
254.	7713	*Stylidium dichotomum (Pins-and-needles)*			
255.	16864	*Synaphea petiolaris subsp. petiolaris*			
256.	15532	*Synaphea spinulosa subsp. spinulosa*			
257.	25705	*Tachybaptus novaehollandiae (Australasian Grebe)*			
258.	24331	*Tadorna tadornoides (Australian Shelduck)*			
259.	28065	*Teloschistes chrysophthalmus*			
260.	1701	*Thelymitra antennifera (Vanilla Orchid)*			
261.	1707	*Thelymitra flexuosa (Twisted Sun Orchid)*			
262.	11143	*Thelymitra graminea*			
263.	20731	*Thelymitra vulgaris*			
264.	24844	*Threskiornis molucca (Australian White Ibis)*			
265.	24845	*Threskiornis spinicollis (Straw-necked Ibis)*			
266.	1319	*Thysanotus arenarius*			
267.	25549	*Todiramphus sanctus (Sacred Kingfisher)*			
268.	1481	*Tribonanthes australis*			
269.	1482	*Tribonanthes brachypetala*			
270.	1483	*Tribonanthes longipetala*			
271.	147	*Triglochin mucronata*			
272.	1141	*Trithuria submersa*			
273.	28087	*Usnea inermis*			
274.	4319	*Vicia benghalensis (Purple Vetch)*	Y		
275.	13103	*Watsonia borbonica*	Y		
276.	18375	*Watsonia knysnana*	Y		
277.	18118	*Watsonia meriana var. meriana*	Y		
278.	1569	*Watsonia versfeldii*	Y		
279.	12072	*Wurmbea dioica subsp. alba*			
280.	2331	*Xylomelum occidentale (Woody Pear)*			
281.	25765	*Zosterops lateralis (Grey-breasted White-eye)*			

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

Appendix 1. List of native flora and fauna observed during the site assessment

Flora

Family	Taxon
Cyperaceae	*Hypolaena exsulca*
	Lepidosperma longitudinale
Ericaceae	*Leucopogon sp.*
Fabaceae	*Acacia pulchella*
	Daviesia sp.
	Hardenbergia comptoniana
	Jacksonia furcellata
Orchidaceae	*Pterostylis sp.*
Myrtaceae	*Agonis flexuosa*
	Corymbia calophylla
	Eucalyptus marginata
	Hypocalymma angustifolium
	Kunzea glabrescens
	Melaleuca rhaphiophylla
Proteaceae	*Banksia ilicifolia*
	Xylomelum occidentale
Xanthorrhoeaceae	*Xanthorrhoea brunonis*
	Xanthorrhoea gracilis

Fauna

Species	Common name	Status (EPBC Act/WC Act)
Coracina novaehollandiae	Black-faced Cuckoo-shrike	Common
Cracticus tibicen	Australian Magpie	Common
Dacelo novaeguineae	Laughing Kookaburra	Common
Macropus fuliginosus	Western Grey Kangaroo	Common
Malurus splendens	Splendid Fairy-wren	Common
Phaps chalcoptera	Common Bronzewing	Common
Pseudocheirus occidentalis	Western Ringtail Possum	Vulnerable/Threatened
Trichosurus vulpecula	Brushtail possum	Common