

BORR Northern and Central Section Targeted Fauna Assessment (Biota 2019a) – Part 3 (part 7 of 7)

6.0 Conservation Significant Species

This section provides an assessment of the likelihood of occurrence of the target species and other conservation significant vertebrate fauna species returned from the desktop review; that is, those species protected by the EPBC Act, BC Act or listed as DBCA Priority species. Appendix 1 details categories of conservation significance recognised under these three frameworks.

As detailed in Section 4.2, the assessment of likelihood of occurrence for each species has been made based on availability of suitable habitat, whether it is core or secondary, as well as records of the species during the current or past studies included in the desktop review. Table 6.1 details the likelihood assessment for each conservation significant species. For those species recorded or assessed as having the potential to occur within the study area, further species information is provided in Sections 6.1 and 6.2.

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Table 6.1: Conservation significant fauna returned from the desktop review and their likelihood of occurrence within the study area.

Species Name	Common Name	State Listing	C'wealth Listing	NatureMap	EPBC PMST	Lot 15 (2010)	BORR (2012)	Sabina Vale (2013)	Lot1 Ducane (2014)	Waterloo (2015)	No. of Records within 10 km (years spanning)	Marri/ Eucalyptus woodland	Marri/Eucalyp tus in paddocks and road reserves	Melaleuca woodland and shrubland in paddocks and road reserves	Riparian woodland	Peppermint woodland	Dampland	Artificial Wetland	Notes	Likelihood of Occurrence
<i>Pseudocheirus occidentalis</i>	Western Ringtail Possum	S1	CR	•	•	•	•	•	•	•	1563 (1991–2018)	Foraging Breeding	Foraging Breeding		Foraging Breeding	Foraging Breeding				Occurs
<i>Calyptrorhynchus baudinii</i>	Baudin's Black-Cockatoo	S2	EN	•	•						14 (1939–2018)	Foraging Breeding	Foraging Breeding		Foraging Breeding					Occurs
<i>Calyptrorhynchus latirostris</i>	Carnaby's Black-Cockatoo	S2	EN	•	•		•	•	•		118 (1939–2018)	Foraging Breeding	Foraging Breeding		Foraging Breeding					Occurs
<i>Calyptrorhynchus banksii naso</i>	Forest Red-tailed Black-Cockatoo	S3	VU	•	•		•	•	•	•	60 (1998–2018)	Foraging Breeding	Foraging Breeding		Foraging Breeding					Occurs
<i>Westralunio carteri</i>	Carter's Freshwater Mussel	S3	VU	•	•					•	8 (1905–2016)								Aquatic: Restricted to major creeklines with shallow sandy banks.	Occurs
<i>Phascogale tapoatafa wambenger</i>	Brush-tailed Phascogale	S6		•							34 (1999–2018)	Foraging Breeding			Foraging Breeding				Requires multiple canopy strata.	Occurs
<i>Isoodon fusciventer</i>	Southern Brown Bandicoot, Quenda	P4		•			•		•		21 (1992–2018)	Foraging Breeding	Foraging Breeding	Foraging Breeding	Foraging Breeding	Foraging Breeding	Foraging Breeding	Foraging Breeding	Requires thick layer shrub/ground cover, often in association with wetlands on the SCP.	Likely to occur
<i>Oxyura australis</i>	Blue-billed Duck	P4		•							90 (1990–2018)				Foraging			Foraging		Likely to occur
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		•							7 (1975–2015)	Foraging							Rarely recorded on SCP; large woodland areas required to support a resident population.	Possible (visitor)
<i>Dasyurus geoffroii</i>	Chuditch, Western Quoll	S3	VU	•	•						4 (1972–2012)	Foraging							Rarely recorded on SCP; large woodland areas required to support a resident population.	Possible (foraging visitor)
<i>Falco peregrinus</i>	Peregrine Falcon	S7		•						•	5 (1975–2014)				Foraging				No breeding habitat available.	Possible (foraging visitor)
<i>Ctenotus ora</i>	Coastal Plains Skink	P3		•							2 (1982)	Foraging Breeding							Lack of species records precludes definitive assessment.	Possible (resident)
<i>Falsistrellus mackenziei</i>	Western False Pipistrelle	P4		•							2 (2007 & 2014)	Foraging Breeding			Foraging Breeding				Roosts in tree hollows.	Possible (resident)
<i>Hydromys chrysogaster</i>	Water-rat, Rakali	P4		•					•		11 (1957–2017)				Foraging Breeding			Foraging Breeding	Significant drainage/waterbody with riparian cover.	Possible (resident)
<i>Setonix brachyurus</i>	Quokka	S3	VU	•	•						12 (1975–2008)								Prefers dense understorey with water nearby.	Unlikely to occur
<i>Myrmecobius fasciatus</i>	Numbat	S2	EN	•							1 (unknown)	Foraging Breeding							No recent records.	Unlikely to occur
<i>Bettongia penicillata ogilbyi</i>	Woylie, Brush-tailed Bettong	S1	EN	•	•						1 (2009)	Foraging Breeding			Foraging Breeding				Restricted to Dryandra and upper Warren.	Unlikely to occur

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6.1 Target Species

6.1.1 Western Ringtail Possum

The Western Ringtail Possum or Ngwayir (*Pseudocheirus occidentalis*) is listed as Schedule 1 (Critically Endangered) under the BC Act and Critically Endangered under the EPBC Act.

The Western Ringtail Possum is a medium-sized arboreal marsupial, endemic to south-western Western Australia. The species is exclusively folivorous, feeding on leaves of myrtaceous species, predominantly Peppermint, but also Marri and Jarrah. During the day, possums rest in tree hollows or dreys (nests constructed from vegetation, which are generally in the canopy but can occasionally be found at ground level). Home range size varies with the productivity of the habitat but is generally less than 5 ha, although densities of up to 20 individuals per hectare have been recorded in Peppermint woodland near Busselton (Department of Parks and Wildlife 2017). Some populations breed throughout the year, but on the southern Swan Coastal Plain females give birth to one young (more rarely up to three) in autumn (April-June); these are weaned and independent at six to seven months (Department of Parks and Wildlife 2017).

The species was once widely distributed across southern and south-western Western Australia but due to habitat clearing and fragmentation for agricultural and urban development, it is now restricted to three areas: the southern Swan Coastal Plain, the Jarrah forests near Manjimup and the south coast between Albany and Walpole (Department of Parks and Wildlife 2017). Habitat loss and fragmentation continue to represent the major threat to the species, while other threats include predation by introduced carnivores, climate change, logging, fire and competition for nest hollows (DBCA 2017). The population size in the Bunbury to Dunsborough region has been estimated to be between 2,000 and 5,000 animals (Department of Parks and Wildlife 2017).

Likelihood of occurrence: The Western Ringtail Possum was recorded throughout the study area wherever woodland fragments, particularly mixed woodland, occurred.

6.1.2 Black-cockatoos

Three species of black-cockatoo in the south-west of Western Australia have documented breeding areas overlapping the study area, however it is only located in the typical breeding distribution of the Forest Red-tailed Black-Cockatoo (Johnstone and Storr 1998, DSEWPaC 2012). Black-cockatoos require tree hollows with suitable dimensions for nesting and breeding, which typically occur in larger trees over 200 years old (DSEWPaC 2012). As such, breeding habitat trees are defined in the Federal guidelines as any tree with a DBH equal to or greater than 50 cm (DSEWPaC 2012). Activities such as logging and deforestation for agriculture have contributed to a decline in abundance and range of black cockatoos, hence their listing as conservation significant species.

6.1.2.1 Carnaby's Black-Cockatoo (*Calyptrorhynchus latirostris*)

Carnaby's Black-Cockatoo is listed as Schedule 2 – Endangered under the BC Act and Endangered under the EPBC Act.

This species is distributed from Kalbarri to Esperance. During the breeding season, between July and November, they have been historically concentrated in the Wheatbelt region (Johnstone and Storr 1998, Saunders et al. 2014b). Here, they primarily nest in Salmon Gum (*E. salmonophloia*) and Wandoo (*E. wandoo*) but are also known to nest in Tuart (*E. gomphocephala*), Marri (*Corymbia calophylla*), Red Morrel (*E. longicornis*) and York Gum (*E. loxophleba*) (Johnstone and Storr 1998).

The Swan Coastal Plain has historically been more important as a foraging area than for breeding, with the birds moving into the area after breeding and occurring in the autumn and winter months. The species' breeding stronghold is in the Wheatbelt, but has been moving onto the Swan Coastal Plain more recently (DoEE 2017). Expansion in breeding range further south and

west towards the Jarrah–Marri forests of the Darling Scarp and Tuart forests of the Swan Coastal Plain (including near Bunbury) has occurred in the past 10 to 30 years (Johnstone et al. 2010). Long-term studies show Carnaby's Black-Cockatoos utilise hollows ranging from 10 – 65 cm in diameter (average 26 cm) and approximately 130 cm deep (Saunders et al. 2014a, 2014b). They also frequent coastal areas outside of the breeding season where they forage in large flocks (Saunders et al. 2011), feeding on the seeds of *Banksia* and *Eucalyptus* species such as Jarrah, Marri and Karri (*E. diversicolor*).

Likelihood of occurrence: Occurs; foraging evidence was recorded within the study area.

6.1.2.2 Baudin's Black-Cockatoo (*Calyptorhynchus baudinii*)

Baudin's Black-Cockatoo is listed as Schedule 2 – Endangered under the BC Act and Vulnerable under the EPBC Act.

Life history and distribution of Baudin's Black-Cockatoo is less well known than that of Carnaby's Black-Cockatoo because earlier research and publications did not distinguish between Baudin's and Carnaby's, which were not taxonomically split until 1948. Baudin's Black-Cockatoo occurs in the humid and subhumid areas of the southwest, it ranges north to Gidgegannup and Hoddie Well and east to Clackline, Wundowie, the lower Darkin River, Boyagin Rock, Wandering, Williams, Kojonup and the King River also west to the eastern strip of the Swan Coastal Plain including West Midland, Armadale, Byford, Mundijong, Serpentine, North Dandalup and further west to the coast at Lake Clifton, Australind, Bunbury, Busselton, Dunsborough, Leeuwin-Naturaliste National Park and Augusta, also the Stirling and Porongurup Ranges and east along the south coast to Waychinicup National Park (Johnstone et al. 2010).

While there is very little breeding information available for the species (Johnstone et al. 2010), the "extrapolated" (DoEE 2017) breeding distribution of the species is generally described as occurring between Leschenault, Collie and Albany. Bunbury is included as a known breeding area for Baudin's Black-Cockatoo in the DoEE referral guidelines (2017). Marri and Tuart are amongst the preferred nesting trees of the species and occur within the study area. Although the specific dimensions of hollows used for breeding have not previously been studied for Baudin's Black-Cockatoo, but they are likely to be similar to those hollows used by Carnaby's Black-Cockatoo and this was the assumption applied during the breeding hollow assessment. Egg-laying occurs mainly from August to December with 1 -2 eggs incubated by the female alone (Johnstone et al. 2010).

Between March and September, the majority of the population migrates north from the cooler Karri forest to the central and northern Darling Range and Swan Coastal Plain (Johnstone et al. 2010). They feed mainly on the seeds of Marri trees, as well as various species of *Banksia* and *Hakea* (Johnstone and Storr 1998).

Likelihood of occurrence: Occurs. Secondary feeding evidence was recorded in several locations from the distinct chew pattern on Marri nuts. NatureMap records place the species within the study area.

6.1.2.3 Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*)

The Forest Red-tailed Black-Cockatoo is listed as Schedule 3 – Vulnerable under the BC Act and Vulnerable under the EPBC Act.

This species occurs from Gingin in the north across to near Albany in the south (Johnstone and Storr 1998). It typically nests in Marri, Jarrah and Karri tree hollows with entrance diameters ranging from 12 – 150 cm (average 34 cm) and depths of 100 – 500 cm (average 144 cm) (Johnstone and Storr 1998, Johnstone et al. 2013). Females lay eggs between October and November and incubation is approximately 29 – 31 days, during which time the female stays with the egg and is fed by the male (Johnstone and Storr 1998). They feed mainly on Jarrah and Marri seeds but also Sheoak (*Allocasuarina fraseriana*), Snottygobble (*Persoonia longifolia*) and Swan River Blackbutt (*E. patens*) (Johnstone et al. 2010).

Likelihood of occurrence: Occurs. Forest Red-tailed Black-Cockatoos were recorded within the study area directly by observation of feeding individuals or individuals flying over, and secondarily via feeding evidence.

6.1.3 Chuditch (*Dasyurus geoffroii*)

The Chuditch (*Dasyurus geoffroii*) is listed as Schedule 3 – Vulnerable under the BC Act and Vulnerable under the EPBC Act.

Chuditch were previously known from most of Australia, occurring in every mainland state and territory. The species was relatively abundant until European settlement, when it underwent a drastic decline and range contraction. It went extinct in New South Wales in the 1940s, Victoria in the 1950s and in Queensland between 1880 and 1910. It is now largely restricted to the south-west of Western Australia, with small numbers in the Midwest, Wheatbelt and South Coast regions where continuous forest or suitable fragments remain. Historically, Chuditch inhabited a wide range of habitats, but today this species predominantly occurs in Jarrah (*Eucalyptus marginata*) forest, wet and dry sclerophyll forest, and mallee remnants in Western Australia (Menkhorst and Knight 2011).

Chuditch are seasonal breeders, with mating occurring in late April – early July (Menkhorst and Knight 2011). Chuditch utilise hollow logs and burrows as dens or refuges, and occur in Eucalypt forests, dry woodlands and mallee shrublands (Strahan 1995).

The Chuditch faces a number of threats including predation and competition with the Red Fox and the Feral Cat, altered fire regimes, direct mortality as a result of road trauma, habitat loss and degradation (Morris et al. 2003).

Likelihood of occurrence: The Chuditch was not recorded within the study area or any contextual sites, despite intensive spotlighting effort. The species has been assessed as a Possible occurrence within the study area. There are few records of Chuditch in close proximity to the study area, with four records between 1972 and 2012 ranging from 2.9 - 7.06 km away. While the study area does contain woodland habitat, only the larger area of woodland habitat within the Northern Lots is likely to be of a sufficient size to support resident Chuditch. Where vegetation within the study area is continuous with vegetation outside the study area, the Chuditch is a potential visitor. An example of this is the riparian vegetation corridor along the Preston River, which may represent preferable habitat at drier times of year.

6.1.4 Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*)

The Brush-tailed Phascogale is listed as Schedule 6 – Conservation Dependent Fauna under the BC Act.

Populations of the Brush-tailed Phascogale occur at the extreme coastal extents of Australia and are threatened across most of their range. The south-west population was described as a distinct subspecies in 2015 (Aplin et al. 2015) and is distributed between Perth and Albany. It occurs at low densities in the northern Jarrah forest, with the highest densities occurring in the Perup/Kingston area, Collie River valley, and near Margaret River and Busselton (DBCA 2012).

The *wambenger* subspecies has been observed in dry sclerophyll forests and open woodlands that contain hollow-bearing trees but a sparse ground cover. Records are less common from wetter forests. Brush-tailed Phascogales are nocturnal arboreal carnivores that forage for food under the bark of trees (van Dyck and Strahan 2008). This feeding mode and the use of tree hollows for shelter results in a preference for large trees, particularly Jarrah and Marri with over 95 cm DBH (Rhind 1996).

Brush-tailed Phascogales are short-lived, with all males dying at the end of the breeding season and a small number of females living up to 2.5 years, long enough to produce a litter in their second year (Rhind and Bradley 2002). They maintain relatively large territories (over 20 ha) and female territories are exclusive; as a result, densities tend to be low.

Likelihood of occurrence: Occurs; the Brush-tailed Phascogale was recorded at two locations within the study area and two contextual sites nearby. NatureMap records also place the species within 250 m of the study area in 2013.

6.1.5 Carter's Freshwater Mussel (*Westralunio carteri*)

Carter's Freshwater Mussel is listed as Schedule 3 – Vulnerable under the BC Act and Vulnerable under the EPBC Act.

The only freshwater mussel in south-west Western Australia, Carter's Freshwater Mussel was added to both State and Federal conservation listings in 2018 following recognition of its declining distribution, thought to be primarily caused by increasing salinity and drying of its habitat. Comparing historical and current records indicates that the species is likely to have undergone a 49% reduction in its distribution in three generations (Klunzinger et al. 2015). Once distributed from Moore River in the north to King George Sound in the south and inland to the Avon River, the species now only occurs within freshwater streams, rivers, reservoirs and lakes within 50 – 100 km of the coast, from Gingin Brook southward to the Kent River, Goodga River and Waychinicup River.

The life-history of the species contributes to its vulnerability, with an age at sexual maturity of 3–6 years and complex maturation stages, including a parasitic larval stage where glochidia must attach to the gills of host fish (Klunzinger et al. 2014).

The species is patchily distributed in sandy/muddy sediments of freshwater lakes, rivers and streams, with greatest densities associated with exposed submerged tree roots of Flooded Gums (*Eucalyptus rudis*), *Melaleuca* spp. and others, woody debris, and overhanging riparian vegetation near stream banks and edges of lakes/dams. Precise habitat requirements and quantification within habitat types are in the early stages of study for this species. Juveniles may require specific micro-habitats and are difficult to locate in the wild.

Likelihood of occurrence: Occurs. Carter's Freshwater Mussel was observed along the Preston River both within the study area and nearby. The species was also recorded from four locations spanning the study area in a separate aquatic study (WRM 2019).

6.2 Non-Target Species with Potential to Occur

6.2.1 Southern Brown Bandicoot, Quenda (*Isodon obesulus fusciventer*)

The Southern Brown Bandicoot is listed as a Priority 4 species by the DBCA (see DBCA 2018).

It is patchily distributed, occurring along the Swan Coastal Plain and in Jarrah and Karri forests from just north of Perth to east of Esperance. It occurs in habitats with sandy soil supporting dense vegetation in the lower stratum. Along the Swan Coastal Plain, the species is often associated with wetlands (van Dyck and Strahan 2008, van Dyck et al. 2013).

The Southern Brown Bandicoot is a medium-sized ground-dwelling marsupial that is territorial. Breeding in this species is opportunistic, beginning in winter and peaking in spring, and lasting 6 – 8 months. The species constructs a nest of ground litter over a shallow depression next to or under logs, shrubs or debris piles. It is mostly nocturnal, but is sometimes active during the day when it searches for invertebrates, fungi and subterranean plant material (van Dyck and Strahan 2008, van Dyck et al. 2013).

Likelihood of occurrence: The Southern Brown Bandicoot was categorised as 'Likely to occur' based on the presence of suitable habitat, together with diggings observed within the study area during the current survey. Multiple historical records have been recorded since 1992, with the closest record 320 m from the study area (according to NatureMap).

6.2.2 Western False Pipistrelle (*Falsistrellus mackenziei*)

This bat is listed as a Priority 4 species by the DBCA (see DBCA 2018).

This species is restricted to the south-western corner of Western Australia and has not been seen in the northern part of its range (north of Collie in the Jarrah forest, north of Mandurah on the Swan Coastal Plain) since 1993 (Armstrong et al. 2017). It occurs in high rainfall areas dominated by Jarrah, Karri, Marri and Tuart. It prefers tall mature forest, but has also been recorded from Banksia woodland on the Swan Coastal Plain (Armstrong et al. 2017). This species forages under the tree canopy and along forest tracks, and roosts within tree hollows and fallen hollow logs. No information on the breeding biology of this species is available (Armstrong et al. 2017).

The Western False Pipistrelle faces multiple threats, including habitat loss as a result of logging, burning and clearing, as well as competition for resources from introduced species such as the European Honey Bee and Rainbow Lorikeet (Armstrong et al. 2017).

Likelihood of occurrence: Possible. In recent years, the species has been recorded from near Stratham and Australind. Where woodland habitat in the study area is continuous with larger areas outside, it is possible that the species may occur.

6.2.3 Water Rat (*Hydromys chrysogaster*)

The Water Rat or Rakali is listed as a Priority 4 species by the DBCA (see DBCA 2018).

The Water Rat is widely distributed around Australia and its offshore islands, New Guinea and some adjacent islands. It occurs in fresh or brackish water habitats in the southwest of Western Australia, but occurs in marine environments along the Pilbara coastline and offshore islands (Strahan 1995).

The Water Rat is an opportunistic predator, feeding on large aquatic insects, fish, crustaceans, mussels, frogs, lizards, small mammals, fresh carrion and water birds (van Dyck and Strahan 2008). The Water Rat is not entirely nocturnal; it is most active around sunset but may forage during the day. Breeding occurs throughout the year, but most young are born between spring and late summer (van Dyck and Strahan 2008).

The Water Rat faces predation by the Feral Cat (*Felis catus*) and the European Red Fox (*Vulpes vulpes*), and as such faces the threat of population decline via direct mortality. Swamp reduction and flood mitigation have also removed habitat, and salinity and degradation of waterways have caused significant declines in southwest populations (van Dyck and Strahan 2008).

Likelihood of occurrence: The Water Rat is considered 'Likely to occur' because of the close proximity of previous records and presence of suitable habitat, including the Preston River. There are 11 records within 10 km of the study area, with the closest record <1 km away.

6.2.4 Western Brush Wallaby (*Notamacropus irma*)

The Western Brush Wallaby is listed as a Priority 4 species by the DBCA (see DBCA 2018).

This species is endemic to the south-west of Western Australia, where it is distributed from north of Kalbarri to near Cape Arid. It inhabits a wide range of habitats, including open forest and woodland, mallee, heathland, low open grasslands and thickets (Woinarski and Burbidge 2016). It is absent from Karri forests with dense undergrowth.

Breeding occurs between April and May, with young emerging from the pouch from October to November.

Historically, population declines were caused by poachers trading skins, the introduction of the fox and clearing of habitat for agriculture. Foxes are still a threat to the survival of this species, with juveniles most at risk of predation.

Likelihood of occurrence: The species is not commonly recorded in the Bunbury area (based on NatureMap records). The most recent record for the Western Brush Wallaby was almost 5 km from the study area, recorded in 2015. However, given the availability of woodland habitat, this species has been assessed as a possible occurrence within the study area.

6.2.5 Blue-billed Duck (*Oxyura australis*)

The Blue-billed Duck is listed as a Priority 4 species by the DBCA (see DBCA 2018).

In Western Australia, the Blue-billed Duck occurs predominantly in the southwest with their range extending from Lake Pinjarrega in the north and east across to Esperance (Johnstone and Storr 1998). They are almost exclusively aquatic, with preferred habitat including deep freshwater swamps or lakes and occasionally saltwater lakes or estuaries inundated with fresh water.

Breeding occurs from early August to the end of March, with nests made out of trampled bulrushes 10–30 cm above water (Johnstone and Storr 1998).

Likelihood of occurrence: Likely to occur. There have been 90 records of the Blue-billed Duck near to the study area since 1990, with the closest record 200 m away. The study area also intersects a portion of the Preston River, which is fringed by vegetation in some areas, and may serve as suitable habitat.

6.2.6 Coastal Plains Skink (*Ctenotus ora*)

The Coastal Plains Skink is listed as a Priority 3 species by the DBCA (2018).

This species is relatively newly described, having been grouped with *Ctenotus labillardieri* prior to 2012 (Kay and Keogh 2012). Records of the species are sparse but it is described as inhabiting open eucalypt woodland over banksia and low vegetation on sandy coastal plains and dunes.

Likelihood of occurrence: Possible. Records of this skink have to date been largely coastal but include a record from Eaton. Given the paucity of data, a conservative approach has been taken and the species is considered as a possible resident.

6.3 Non-target Species that are Unlikely to Occur

The following species were returned from database searches but are considered unlikely to occur in the study area based on habitat preference and known distributions.

6.3.1 Woylie, Brush-tailed Bettong (*Bettongia penicillata ogilbyi*)

The Woylie is listed as Schedule 1 – Critically Endangered under the BC Act and Endangered under the EPBC Act.

Once very common and distributed over much of Australia, the species suffered severe decline following European colonisation and the introduction of feral predators. This medium weight range marsupial is nocturnal and forages primarily for native fungi.

Likelihood of occurrence: Unlikely to occur. One record of the Woylie was returned from the NatureMap database, however the species is now known to have a distribution restricted to two small areas (the Upper Warren and Dryandra Woodland). Translocated populations occur at Batalling and inside fenced areas in Mt Gibson, Karakamia and Whiteman Park.

6.3.2 Quokka (*Setonix brachyurus*)

The Quokka is listed as a Schedule 3 – Vulnerable species under the BC Act and as Vulnerable under the EPBC Act.

The Quokka occurs in isolated populations on Rottnest Island, Bald Island and fragmented areas of the mainland between the Hunter Valley and Jarrah forests south of Perth. The Quokka has specific habitat requirements, preferring dense understorey vegetation or a complex vegetation structure (comprising at least three layers) that provides ample protection from predators. The Quokka also requires water to be nearby and is often found in swampy or riparian areas. Critical habitat in both the northern and southern extent of its range is described as patches of varying fire age, with some areas more recently burnt. This may reflect their preference to feed on new growth vegetation in recently burnt areas.

Historically, disease and the introduction of the Red Fox have been responsible for major population declines. Current threats include uncontrolled fox populations and loss of habitat through inappropriate fire regimes. The Quokka is also indirectly affected by dieback disease, which has the potential to severely alter vegetation structure.

Likelihood of occurrence: Unlikely to occur. The nearest record of the species is from swampland near Stratham (<5 km from the study area), however this represents the only known remaining population on the Swan Coastal Plain.

6.3.3 Numbat (*Myrmecobius fasciatus*)

The Numbat is listed as Schedule 2 – Endangered under the BC Act and Endangered under the EPBC Act.

The Numbat is a small marsupial with a distinctive striped appearance, and because of its specialised diet (eating termites only), it is the sole animal placed in the family Myrmecobiidae.

Prior to European settlement, the Numbat had distributions in New South Wales, South Australia and Western Australia but it is now only known to be surviving in small areas of Jarrah forest at Dryandra and in the Upper Warren area. Land clearing, altered fire regimes and the introduction of feral predators are all likely factors in their decline (Department of Biodiversity, Conservation and Attractions 2017).

Likelihood of occurrence: Unlikely to occur. While one record of the species was returned from the NatureMap database, this is likely to be very old. The species is now considered restricted to Dryandra and the Upper Warren.

7.0 Discussion

Based on their known occurrence, habitat suitability and listing at both state and Commonwealth level, the three black-cockatoo species (Forest Red-tailed Black-Cockatoo, Carnaby's Black-Cockatoo and Baudin's Black-Cockatoo) and the Western Ringtail Possum were the primary focus of the current targeted survey work. However, the methods used and intensity of sampling to target these species was also applicable to the survey of most other conservation significant species with the potential to occur within the study area, including the Chuditch, Brush-tailed Phascogale, Quokka, Quenda, Water Rat and Blue-billed Duck.

7.1 Western Ringtail Possum

This study assessed the importance of identified Western Ringtail Possum habitat within the study area by direct comparison with habitat in a local setting (four contextual sites within an 18 km radius of the Bunbury town centre). Density was identified as the preferred metric for making such comparisons and was estimated using either strip transects or a line-transect distance sampling approach, depending on the extent of habitat. Within the study area, Western Ringtail Possums were found within habitat ranging from relatively isolated individual trees through to remnant vegetation strips (along road reserves and riparian belts) surrounded by cleared land, and to larger remnants either isolated from or broadly contiguous with much larger remnants. Narrow habitat corridors were not amenable to undertaking a distance sampling program: to obtain density estimates in such sections, the strip transect approach was adopted. Strip transects with a width of 25 m were considered a suitable method for estimating density, given that over this distance the probability of detection was essentially 1.0 (see Figure 5.5) and that in most instances the area of habitat was clearly demarcated. Distance sampling was used to estimate density within one larger remnant within the study area (Northern Lots) and at four contextual sites (Lot 2 Boyanup–Picton Rd, Manea Park, Reserve 23,000 and Southern Lots).

The estimated abundance of the Western Ringtail Possum within each study site is given in Table 7.1. The strip transects within the study area yielded 46 sightings of Western Ringtail Possums and, when the estimated number of individuals based on the distance sampling exercises in the Northern Lots are included (21 ± 9), the estimate for the study area increased to between 58 and 76 individuals. Based on the 58 to 76 individuals and an area of identified habitat of 133.8 ha, the density estimate is between 0.43 and 0.57 per ha, which is at the lower end of estimates derived from the distance sampling exercises in the four contextual sites.

Context was considered at the local scale by comparison with the density estimates yielded from the distance sampling program in the four relatively large (greater than 87 ha) contextual sites and some small strip sampling sites (Gelorup study site, Maidment Parade, Golf Drive, and along the Preston River). The distance sampling yielded a total population estimate of approximately 462 individuals for the sampled areas of the contextual sites. The estimate increases to approximately 878 individuals if unsampled habitat contiguous with each of the study sites is assumed to support equivalent densities. The contextual strip sampling localities yielded a further 27 individuals. Based on the above, the total estimated population size for the contextual study sites and contiguous remnant habitat was about 905 ± 178 individuals, suggesting that the total number of Western Ringtail Possums in an 18 km radius around Bunbury town centre may be potentially in excess of 1,000 individuals. Of this number, between 58 and 76 have been estimated to occur in the study area.

Table 7.1: Sightings and abundance estimates of study sites within the study area and contextual sites.

Study Sites	Sightings	Estimated in Surveyed Area	Estimated in Contiguous Unsurveyed Areas †	Total
Study Area				
Distance Sampling				
Northern Lots	18	21 ± 9	NA	21 ± 9
Strip Sampling				
Brunswick River Bridge to Raymond Road	21	21	NA	21
Davenport Localities - part	14	14	NA	14
Picton East	9	9	NA	9
Golf Drive - part	2	2	NA	2
Sub-total	64	67 ± 9	NA	67 ± 9
Contextual Sites				
Distance Sampling				
Lot 2 Boyanup–Picton Rd	60	121 ± 17	NA	121 ± 17
Manea Park	103	186 ± 41	309 ± 83	495 ± 132
Reserve 23,000	52	82 ± 16	25 ± 3	107 ± 12
Southern Lots	33	73 ± 20	82 ± 9	155 ± 17
Strip Sampling				
Davenport Localities - part	7	7	NA	7
Golf Drive - part	4	4	NA	4
Gelorup	14	14	NA	14
Maidment Parade road reserve	2	2	NA	2
Sub-total	275	489 ± 94	416 ± 95	905 ± 178
Total	339	556 ± 103		945 ± 187

† This assumes equivalent habitat and equivalent density to the contiguous surveyed area, an assumption that has not been tested.

7.2 Black-cockatoos

The field survey recorded evidence of all three species of black-cockatoo occurring within the study area.

Applying the Foraging Habitat Scoring Tool (DoEE 2017) to the study area, resulted in 967.1 ha being classified as non-foraging habitat, largely areas that have already been cleared, 58.2 ha of habitat was classified as Very High Quality, 19.2 ha as High Quality, 14.2 ha as Quality and 69.8 ha as Low Quality. Evidence of foraging by all three black-cockatoo species was recorded within the study area.

The study area falls within the known breeding distribution for all three species of black-cockatoo (DoEE 2017). Eucalypt woodland dominated the larger fragments remaining within the study area. A total of 2,804 individual trees met the >50 cm DBH criteria of a potential breeding habitat tree (that is, a tree of a size with potential to form a suitable hollow, DoEE 2017). However, of this large number of potential breeding habitat trees, the dedicated hollow-assessment found only 19 trees supporting 20 hollows suitable for black-cockatoo nesting. One hollow was found to contain what appeared to be a black-cockatoo nest from the previous breeding season (two broken eggs of a size and colour consistent with black-cockatoos).

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Appendix 1

Statutory Framework



Commonwealth EPBC Act

Fauna species of national environmental significance are listed under the Commonwealth EPBC Act (Department of the Environment 2017), and may be classified as 'critically endangered', 'endangered', 'vulnerable' or 'lower risk', which are consistent with IUCN categories.

Critically Endangered (CR): a taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future.

Endangered (EN): a taxon is Endangered when it is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future.

Vulnerable (VU): a taxon is Vulnerable when it is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future.

Lower Risk (LR): a taxon is Lower Risk when it has been evaluated, does not satisfy the criteria for any of the categories Critically Endangered, Endangered or Vulnerable. Taxa included in the Lower Risk category can be separated into three subcategories:

1. **Conservation Dependent (CD).** Taxa which are the focus of a continuing taxon-specific or habitat-specific conservation program targeted towards the taxon in question, the cessation of which would result in the taxon qualifying for one of the threatened categories above within a period of five years.
2. **Near Threatened (NT).** Taxa which do not qualify for Conservation Dependent, but which are close to qualifying for Vulnerable.
3. **Least Concern (LC).** Taxa which do not qualify for Conservation Dependent or Near Threatened.

Migratory species are also protected under the EPBC Act as species of national environmental significance. Migratory species are those animals that migrate to Australia and its external territories, or pass through or over Australian waters during their annual migrations. The list of migratory species consists of those species listed under the following international conventions:

1. Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention);
2. China-Australia Migratory Bird Agreement (CAMBA);
3. Japan-Australia Migratory Bird Agreement (JAMBA); and,
4. Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).

Marine species are also protected under the EPBC Act, and are listed to ensure the long-term conservation of the species. Marine species include all Australian sea snakes, seals, crocodiles, dugongs, marine turtles, seahorses and seabirds that naturally occur in the Commonwealth marine area.

Western Australian Wildlife Conservation Act 1950

Classification of rare and endangered fauna under the state *Wildlife Conservation (Specially Protected Fauna) Notice 2016* (State of Western Australia 2017), recognises seven distinct schedules of taxa:

Schedule 1: fauna that are rare or likely to become extinct as critically endangered fauna (CR).

Schedule 2: fauna that are rare or likely to become extinct as endangered fauna (EN).

Schedule 3: fauna that are rare or likely to become extinct as vulnerable fauna (VU).

Schedule 4: fauna presumed to be extinct (EX).

Schedule 5: birds that are subject to an agreement between the government of Australia and the governments of Japan, China and the Republic of Korea relating to the protection of migratory birds, and birds in danger of extinction, which are declared to be fauna in need of special protection.

Schedule 6: fauna that is of special conservation need as conservation dependent fauna (CD). This category of species contains those taxa that do not meet the criteria for listing as threatened, but which are being maintained by specific management programmes.

Schedule 7: Other specially protected fauna (OS). This category contains those taxa that are at risk from harvesting, or other human interactions, which have potential to affect their conservation status if not appropriately managed.

Department of Biodiversity, Conservation and Attractions Priority Fauna

In addition, the Department of Biodiversity, Conservation and Attractions maintains a list of Priority species that have not been assigned statutory protection under the *Wildlife Conservation Act 1950* (see DBCA 2018). Species on this list are considered to be of conservation priority because there is insufficient information to make an assessment of their conservation status or they are considered to be rare but not threatened and are in need of monitoring. Under this list, species are classified according to five Priority categories:

Priority One: Taxa with few, poorly known populations on threatened lands

Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

Priority Two: Taxa with few, poorly known populations on conservation lands

Taxa that are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, unallocated Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

Priority Three: Taxa with several, poorly known populations, some on conservation lands

Taxa that are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

Priority Four: Taxa in need of monitoring

Taxa that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.

Priority Five: Taxa in need of monitoring

Taxa that are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Appendix 2

DBCA Regulation 17 Licence



DEPARTMENT OF PARKS AND WILDLIFE



Department of
Parks and Wildlife



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Wildlife Conservation Act 1950

REGULATION 17

Regulation 17 – Licence to take fauna for scientific purposes (Regulation 17 - Standard)

The undermentioned person may take fauna for research or other scientific purposes and where authorised, keep it in captivity, subject to the following and attached conditions, which may be added to, suspended or otherwise varied as considered fit.

Director General

Conditions

- 1 The licensee must comply with the provisions of the Wildlife Conservation Act 1950, Wildlife Conservation Regulations 1970 and any Notices in force under this legislation.
- 2 The licensee shall take fauna only in the manner stated on the endorsed Regulation 17 licence application form and endorsed related correspondence.
- 3 Unless specifically authorised in the conditions of this Licence or otherwise in writing by the Director General, species of fauna declared as likely to become extinct, rare or otherwise in need of special protection shall not be taken.
- 4 Any by-catch of fauna, which is declared to be rare, likely to become extinct, or otherwise in need of special protection shall be released immediately at the point of capture. Where such fauna taken under this licence is injured or deceased, the licensee shall contact the Department's Wildlife Licensing Section for advice on disposal. Records must be kept of any such fauna so captured and details are to be included in the report required under further condition below.
- 5 Any interaction involving Gazetted Threatened Fauna that may be harmful to the fauna and/or invasive may require approval from the Commonwealth Department of the Environment ph 02 6274 1111. Interaction with such species is controlled by the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 and Environment Protection and Biodiversity Conservation Regulations 2000 as well as the Wildlife Conservation Act 1950 and Wildlife Conservation Regulations 1970.
- 6 No fauna shall be taken in areas where it would impinge on pre-existing scientific research programs.
- 7 Except in the case of approved lethal traps, the licensee shall ensure that measures are taken in the capture and handling of fauna to prevent injury or mortality resulting from that capture or handling. Where traps or other mechanical means or devices are used to capture fauna these shall be deployed so as to prevent exposure of trapped animals to ants and debilitating weather conditions and inspected at regular intervals throughout each day of their use. At the conclusion of research all markers used, and signs and structures erected by the licensee shall be removed and the environment returned to its original condition.
- 8 Not more than ten specimens of any one protected species of fauna shall be taken and removed from any location less than 20km apart. Where exceptional circumstances make it necessary to take a larger number of specimens from a particular location in order to obtain adequate statistical data, the collector must proceed with circumspection and justify their actions to the Director General in advance.
- 9 The licensee shall not release any fauna or their progeny in any area where it does not naturally occur, nor hand such fauna over to any other person or authority unless approved by the Director General, nor dispose of the remains of such fauna in any manner likely to confuse the natural or present day distribution of the species.
- 10 Bioprospecting involving the removal of sample aquatic and terrestrial organisms for chemical extraction and bioactivity screening shall not be conducted without specific written approval by the Director General.
- 11 No fauna is to be taken from any CALM land, as defined in the Conservation and Land Management Regulations 2002, without prior written approval of the Director General. No fauna is to be taken from any public land without the prior written approval of the Government Authority managing that land.
- 12 The licensee must not enter upon any private property or pastoral lease for the purposes of this licence, nor take any fauna from any private land or pastoral lease without the prior consent in writing of the owner or occupier. Similarly, in the case of Aboriginal lands, the licensee must not enter upon or take fauna from such lands without the written approval of the Department of Aboriginal Affairs and/or the relevant native title holders or applicants.
- 13 Copies of this licence and any written approval or consent required by conditions of this licence must be carried by the licensee and any person/s authorised under the licence at all times when conducting activities relevant to the licence

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and must be presented to an authorised officer of the Department upon request.

- 14 All holotypes and syntypes and a half share of paratypes of species or subspecies permitted to be permanently taken under this licence shall be donated to the Western Australian Museum. Duplicates (one pair in each case) of any species collected, which represents a significant extension of geographic range shall upon request be donated to the Western Australian Museum.
- 15 To prevent any unnecessary collecting in this State, all specimens and material taken and retained under the authority of this license shall, upon request, be loaned to the Western Australian Museum. Any unused portion or portions of any specimen collected under the authority of this license shall be offered to the Western Australian Museum for inclusion in its collection or made available to other scientific workers if so required.
- 16 Within one month of the expiration of this licence, the holder shall submit an electronic return into the department's Wildlife Licensing System, detailing the locality, site, geocode, date and number of each species of fauna captured, sighted or vouchered during the currency of the licence. A copy of any paper, report or thesis resulting from the research shall upon completion be lodged with the Director General.

Purpose

Bunbury Outer Ring Road Alternate Alignments Fauna Assessment for Main Roads WA, targeting conservation significant species, including but not limited to; western ringtail possum (*Pseudocheirus occidentalis*), Carnaby's cockatoo (*Calyptorhynchus latirostris*), Baudin's cockatoo (*Calyptorhynchus baudinii*), forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*), south-western brush-tailed Phascogale (*Phascogale tapoatafa wambenger*), Chuditch (*Dasyurus geoffroii*) and Carter's Freshwater Mussel (*Westralunio carteri*). Fauna surveys by spotlighting / head torching, aural survey, secondary evidence and habitat assessment, and using camera traps, bat detectors, cage traps and Elliott traps. Captured fauna will have morphometrics and physical condition details recorded prior to release at capture site. Location:

Locations

Bunbury Outer Ring Road Alternate Alignments project area; within City of Bunbury, Shire of Capel and Shire of Dardanup.

Authorised Person

Surname

Given name(s)

Teale

Roy

Ford

Stewart

King

Jacinta

Graff

John

Greenham

Michael

Brooshooft

Penny

Joshua

Keen

Priddle

Shane

King

Brandon

DEPARTMENT OF PARKS AND WILDLIFE



Department of
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Date of Issue 24/10/2018
Valid From 24/10/2018
Date of Expiry 31/12/2018

Licensee: Dr Victoria Anne Cartledge
Address Biota Environmental Sciences
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Issued by a Wildlife Licensing Officer of the Department of Parks and Wildlife under delegation from the Minister for Environment pursuant to section 133(1) of the Conservation and Land Management Act 1984.

Appendix 3

Desktop Review Results



A3: Mammals

Species Name	Common Name	State Listing	Federal Listing	Nature Map	EPBC PMST	Lot 15 2010	BORR 2012	Lot 1 Ducane 2014	Waterloo 2015
<i>Bettongia penicillata ogilbyi</i>	Woylie, Brush-tailed Bettong	S1	EN	•	•				
<i>Bos taurus</i>	European Cattle			•		•		•	
<i>Canis lupus</i>	Domestic Dog				•		•	•	
<i>Cercartetus concinnus</i>	Western Pygmy-possum			•					
<i>Chalinolobus gouldii</i>	Gould's Wattled Bat			•					
<i>Dasyurus geoffroii</i>	Chuditch	S3	VU	•	•				
<i>Equus caballus</i>	Horse					•		•	
<i>Falsistrellus mackenziei</i>	Western False Pipistrelle	P4		•					
<i>Felis catus</i>	Cat			•	•	•	•		•
<i>Hydromys chrysogaster</i>	Water-rat	P4		•				•	
<i>Isodon fusciventer</i>	Southern Brown Bandicoot	P4		•			•	•	
<i>Macropus fuliginosus</i>	Western Grey Kangaroo			•		•	•	•	•
<i>Mus musculus</i>	House Mouse			•	•				
<i>Myrmecobius fasciatus</i>	Numbat	S2	EN	•					
<i>Notamacropus irma</i>	Western Brush Wallaby	P4		•					
<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat			•					
<i>Nyctophilus gouldi</i>	Gould's Long-eared Bat			•					
<i>Oryctolagus cuniculus</i>	Rabbit			•	•	•	•	•	•
<i>Phascogale tapoatafa wambenger</i>	Wambenger Brush-tailed Phascogale	S6		•					
<i>Pseudocheirus occidentalis</i>	Western Ringtail Possum	S1	CR	•	•	•	•	•	•
<i>Rattus fuscipes</i>	Western Bush Rat			•					
<i>Rattus rattus</i>	Black Rat			•	•		•		
<i>Setonix brachyurus</i>	Quokka	S3	V	•	•				
<i>Sus scrofa</i>	Pig			•	•		•		
<i>Tachyglossus aculeatus</i>	Short-beaked Echidna						•		
<i>Trichosurus vulpecula</i>	Common Brushtail Possum			•			•	•	•
<i>Vespadelus regulus</i>	Southern Forest Bat			•					
<i>Vulpes vulpes</i>	Red Fox			•	•	•	•	•	•

A3: Birds

Species Name	Common Name	State Listing	Federal Listing	Nature Map	EPBC PMST	Lo 15 2010	BORR 2012	Lot 1 Ducane 2014	Waterloo 2015
<i>Acanthiza apicalis</i>	Inland Thornbill			•					
<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill			•			•	•	•
<i>Acanthiza inornata</i>	Western Thornbill			•			•	•	
<i>Acanthorhynchus superciliosus</i>	Western Spinebill			•					•
<i>Accipiter cirrocephalus</i>	Collared Sparrowhawk			•					
<i>Accipiter fasciatus</i>	Brown Goshawk		Ma	•					•
<i>Acrocephalus australis</i>	Australian Reed-Warbler			•					
<i>Actitis hypoleucos</i>	Common Sandpiper	S5	M; Ma	•	•				
<i>Anas castanea</i>	Chestnut Teal			•					
<i>Anas gracilis</i>	Grey Teal			•					•
<i>Anas superciliosa</i>	Pacific Black Duck			•			•		•
<i>Anhinga novaehollandiae</i>	Australasian Darter			•					
<i>Anthochaera carunculata</i>	Red Wattlebird			•			•	•	•
<i>Anthochaera lunulata</i>	Western Wattlebird			•			•		
<i>Anthus novaeseelandiae</i>	Australasian Pipit					•	•		•
<i>Aquila audax</i>	Wedge-tailed Eagle			•			•		
<i>Ardea alba</i>	Great Egret		Ma	•	•				
<i>Ardea pacifica</i>	White-necked Heron			•					•
<i>Arenaria interpres</i>	Ruddy Turnstone	S5	M; Ma	•					
<i>Artamus cinereus</i>	Black-faced Woodswallow			•			•		•
<i>Artamus cyanopterus</i>	Dusky Woodswallow			•		•			•
<i>Aythya australis</i>	Hardhead			•					
<i>Barnardius zonarius</i>	Australian Ringneck			•		•	•	•	•
<i>Biziura lobata</i>	Musk Duck		Ma	•					•
<i>Bubulcus ibis</i>	Cattle Egret		Ma	•	•				
<i>Burhinus grallarius</i>	Bush Stone-curlew			•					
<i>Butorides striata</i>	Striated Heron								•
<i>Cacatua pastinator</i>	Western Corella			•					
<i>Cacatua sanguinea</i>	Little Corella			•					•

Species Name	Common Name	State Listing	Federal Listing	Nature Map	EPBC PMST	Lo 15 2010	BORR 2012	Lot 1 Ducane 2014	Waterloo 2015
<i>Cacatua tenuirostris</i>	Long-billed Corella						•		
<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo		Ma	•			•		
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	S5	M; Ma	•	•				
<i>Calidris canutus</i>	Red Knot		EN; M; Ma	•	•				
<i>Calidris ferruginea</i>	Curlew Sandpiper	S1, S3; S5	CR; M; Ma	•	•				
<i>Calidris melanotos</i>	Pectoral Sandpiper	S5	M; Ma		•				
<i>Calidris ruficollis</i>	Red-necked Stint	S5	M; Ma	•					
<i>Calidris tenuirostris</i>	Great Knot	S1, S3; S5	CR; M; Ma	•					
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black-Cockatoo	S3	VU	•	•		•	•	•
<i>Calyptorhynchus baudinii</i>	Baudin's Black-Cockatoo	S2	EN	•	•				
<i>Calyptorhynchus latirostris</i>	Carnaby's Black-Cockatoo	S2	EN	•	•		•	•	
<i>Chalcites lucidus</i>	Shining Bronze-Cuckoo			•					
<i>Charadrius ruficapillus</i>	Red-capped Plover		Ma	•					
<i>Chenonetta jubata</i>	Australian Wood Duck			•			•		•
<i>Chroicocephalus novaehollandiae</i>	Silver Gull		Ma	•					
<i>Cincloramphus mathewsi</i>	Rufous Songlark								•
<i>Circus approximans</i>	Swamp Harrier		Ma	•					
<i>Cladorhynchus leucocephalus</i>	Banded Stilt			•					
<i>Colluricincla harmonica</i>	Grey Shrike-thrush			•			•	•	•
<i>Columba livia</i>	Rock Dove			•	•				•
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike		Ma	•		•	•	•	•
<i>Corvus bennetti</i>	Little Crow								•
<i>Corvus coronoides</i>	Australian Raven			•		•	•	•	•
<i>Coturnix pectoralis</i>	Stubble Quail		Ma	•					
<i>Cracticus nigrogularis</i>	Pied Butcherbird			•					•
<i>Cracticus torquatus</i>	Grey Butcherbird			•			•		•
<i>Cygnus atratus</i>	Black Swan			•					
<i>Dacelo novaeguineae</i>	Laughing Kookaburra			•			•	•	•
<i>Daphoenositta chrysoptera</i>	Varied Sittella			•			•		
<i>Egretta garzetta</i>	Little Egret								•

Species Name	Common Name	State Listing	Federal Listing	Nature Map	EPBC PMST	Lo 15 2010	BORR 2012	Lot 1 Ducane 2014	Waterloo 2015
<i>Egretta novaehollandiae</i>	White-faced Heron			•			•		•
<i>Elanus axillaris</i>	Black-shouldered Kite								•
<i>Elseya melanops</i>	Black-fronted Dotterel			•					•
<i>Eolophus roseicapilla</i>	Galah						•	•	•
<i>Eopsaltria griseogularis</i>	Western Yellow Robin			•			•		
<i>Epthianura albifrons</i>	White-fronted Chat			•					•
<i>Erythronyx cinctus</i>	Red-kneed Dotterel			•					
<i>Falco berigora</i>	Brown Falcon			•					•
<i>Falco cenchroides</i>	Nankeen Kestrel		Ma	•		•	•		•
<i>Falco longipennis</i>	Australian Hobby			•			•		
<i>Falco peregrinus</i>	Peregrine Falcon	S7		•					•
<i>Falcunculus frontatus</i>	Crested Shrike-tit	P4	VU	•					
<i>Fulica atra</i>	Eurasian Coot			•			•		•
<i>Gallinula tenebrosa</i>	Dusky Moorhen			•					•
<i>Gavicalis virens</i>	Singing Honeyeater					•	•		•
<i>Gerygone fusca</i>	Western Gerygone			•			•	•	•
<i>Glossopsitta porphyrocephala</i>	Purple-crowned Lorikeet						•		
<i>Grallina cyanoleuca</i>	Magpie-lark		Ma	•			•	•	•
<i>Gymnorhina tibicen</i>	Australian Magpie			•		•	•	•	•
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle		Ma	•	•				
<i>Haliastur sphenurus</i>	Whistling Kite		Ma	•			•	•	
<i>Heteroscenes pallidus</i>	Pallid Cuckoo		Ma	•					•
<i>Hieraaetus morphnoides</i>	Little Eagle			•					
<i>Himantopus leucocephalus</i>	Pied Stilt		Ma	•					
<i>Hirundo neoxena</i>	Welcome Swallow		Ma	•			•	•	•
<i>Hydroprogne caspia</i>	Caspian Tern	S5	M	•	•				
<i>Hypotaenidia philippensis</i>	Buff-banded Rail			•					
<i>Lichmera indistincta</i>	Brown Honeyeater			•		•	•	•	•
<i>Limosa lapponica</i>	Bar-tailed Godwit	S5	M; Ma	•	•				
<i>Limosa limosa</i>	Black-tailed Godwit	S5	M; Ma	•					

Species Name	Common Name	State Listing	Federal Listing	Nature Map	EPBC PMST	Lo 15 2010	BORR 2012	Lot 1 Ducane 2014	Waterloo 2015
<i>Malacorhynchus membranaceus</i>	Pink-eared Duck			•					
<i>Malurus elegans</i>	Red-winged Fairy-wren			•				•	
<i>Malurus splendens</i>	Splendid Fairy-wren			•			•		•
<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater			•					
<i>Merops ornatus</i>	Rainbow Bee-eater		Ma	•	•	•			
<i>Microcarbo melanoleucos</i>	Little Pied Cormorant			•			•	•	
<i>Microeca fascians</i>	Jacky Winter						•		
<i>Myiagra inquieta</i>	Restless Flycatcher			•					
<i>Neophema elegans</i>	Elegant Parrot			•			•		•
<i>Ninox boobook</i>	Southern Boobook					•		•	•
<i>Numenius madagascariensis</i>	Eastern Curlew	S1, S3; S5	CR	•	•				
<i>Numenius phaeopus</i>	Whimbrel	S5	M; Ma	•					
<i>Nycticorax caledonicus</i>	Nankeen Night-Heron		Ma	•					
<i>Ocyphaps lophotes</i>	Crested Pigeon			•					•
<i>Oxyura australis</i>	Blue-billed Duck	P4		•					
<i>Pachycephala pectoralis</i>	Golden Whistler						•	•	
<i>Pachycephala rufiventris</i>	Rufous Whistler			•		•	•	•	•
<i>Pandion haliaetus</i>	Eastern Osprey	S5	Ma	•	•				
<i>Pardalotus punctatus</i>	Spotted Pardalote			•					•
<i>Pardalotus striatus</i>	Striated Pardalote			•		•	•		•
<i>Pelecanus conspicillatus</i>	Australian Pelican		Ma	•					
<i>Petrochelidon nigricans</i>	Tree Martin		Ma	•			•		
<i>Petroica multicolor</i>	Scarlet Robin			•		•	•	•	
<i>Phalacrocorax carbo</i>	Great Cormorant			•					
<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant			•					•
<i>Phalacrocorax varius</i>	Pied Cormorant			•					
<i>Phaps chalcoptera</i>	Common Bronzewing			•			•	•	•
<i>Phaps elegans</i>	Brush Bronzewing			•					
<i>Phylidonyris niger</i>	White-cheeked Honeyeater			•					
<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater			•			•	•	•

Species Name	Common Name	State Listing	Federal Listing	Nature Map	EPBC PMST	Lo 15 2010	BORR 2012	Lo 1 Ducane 2014	Waterloo 2015
<i>Platalea flavipes</i>	Yellow-billed Spoonbill			•			•		•
<i>Platycercus icterotis</i>	Western Rosella			•					
<i>Plegadis falcinellus</i>	Glossy Ibis	S5	M; Ma	•					
<i>Pluvialis fulva</i>	Pacific Golden Plover	S5	M; Ma	•					
<i>Podargus strigoides</i>	Tawny Frogmouth			•			•	•	
<i>Podiceps cristatus</i>	Great Crested Grebe			•					
<i>Poliocephalus poliocephalus</i>	Hoary-headed Grebe			•					
<i>Polytelis anthopeplus</i>	Regent Parrot			•			•		•
<i>Poodytes gramineus</i>	Little Grassbird			•				•	
<i>Porphyrio porphyrio</i>	Purple Swamphen		Ma	•					•
<i>Porzana fluminea</i>	Australian Spotted Crake			•					
<i>Purpureicephalus spurius</i>	Red-capped Parrot			•		•	•	•	•
<i>Quoyornis georgianus</i>	White-breasted Robin			•					
<i>Recurvirostra novaehollandiae</i>	Red-necked Avocet		Ma	•					
<i>Rhipidura fuliginosa</i>	Grey Fantail			•		•	•	•	•
<i>Rhipidura leucophrys</i>	Willie Wagtail			•		•	•	•	•
<i>Rostratula australis</i>	Australian Painted-snipe	S2	EN		•				
<i>Sericornis frontalis</i>	White-browed Scrubwren			•			•		
<i>Smicronis brevirostris</i>	Weebill			•		•	•	•	•
<i>Spatula rhynchotis rhynchotis</i>	Australian Shoveler			•					
<i>Stictonetta naevosa</i>	Freckled Duck			•					
<i>Stipiturus malachurus</i>	Southern Emu-wren	S3		•					
<i>Strepera versicolor</i>	Grey Currawong			•			•		•
<i>Streptopelia chinensis</i>	Spotted Dove			•	•				
<i>Streptopelia senegalensis</i>	Laughing Dove			•	•			•	
<i>Tachybaptus novaehollandiae</i>	Australasian Grebe			•					
<i>Tadorna tadornoides</i>	Australian Shelduck			•			•		•
<i>Threskiornis moluccus</i>	Australian White Ibis						•	•	•
<i>Threskiornis spinicollis</i>	Straw-necked Ibis		Ma	•			•		•
<i>Todiramphus sanctus</i>	Sacred Kingfisher		Ma	•				•	•

Species Name	Common Name	State Listing	Federal Listing	Nature Map	EPBC PMST	Lo 15 2010	BORR 2012	Lot 1 Ducane 2014	Waterloo 2015
<i>Trichoglossus moluccanus</i>	Rainbow Lorikeet			•				•	
<i>Tringa brevipes</i>	Grey-tailed Tattler	S5; P4	M	•					
<i>Tringa glareola</i>	Wood Sandpiper	S5	M; Ma	•					
<i>Tringa nebularia</i>	Common Greenshank	S5	M; Ma	•	•				
<i>Tringa stagnatilis</i>	Marsh Sandpiper	S5	M; Ma	•					
<i>Turnix varius</i>	Painted Button-quail	S2	VU	•			•		
<i>Tyto alba</i>	Barn Owl			•					
<i>Vanellus tricolor</i>	Banded Lapwing			•					
<i>Zapornia tabuensis</i>	Spotless Crake		Ma	•					
<i>Zosterops lateralis</i>	Silvereye		Ma	•			•	•	•

A3: Reptiles

Species Name	Common Name	State Listing	Federal Listing	Nature Map	EPBC PMST	Lot 15 2010	BORR 2012	Lot 1 Ducane 2014	Waterloo 2015
<i>Acriscincus trilineatus</i>	Western Three-lined Skink			•			•		
<i>Chelodina colliei</i>	South-western Snake-necked Turtle			•					
<i>Christinus marmoratus</i>	Marbled Gecko			•		•			
<i>Cryptoblepharus buehneri</i>				•			•		
<i>Ctenopus australis</i>				•					
<i>Ctenopus fallens</i>				•					
<i>Ctenopus impar</i>				•					
<i>Ctenopus labillardieri</i>				•					
<i>Ctenopus ora</i>	Coastal Plains Skink	P3		•					
<i>Echiopsis curta</i>	Bardick			•					
<i>Egernia kingii</i>	King's Skink			•		•			•
<i>Egernia napoleonis</i>				•			•		•
<i>Elapognathus coronatus</i>	Crowned Snake			•					
<i>Hemiergis gracilipes</i>				•					
<i>Hemiergis quadrilineata</i>				•			•		
<i>Lerista distinguenda</i>				•					
<i>Lerista elegans</i>				•					
<i>Lialis burtonis</i>				•					
<i>Lissolepis luctuosa</i>	Western Swamp Skink			•					
<i>Menetia greyii</i>				•		•	•		•
<i>Morelia spilota</i>	Carpet Python			•					
<i>Morethia lineoocellata</i>				•					•
<i>Morethia obscura</i>						•	•		
<i>Neelaps bimaculatus</i>	Black-naped Snake			•					
<i>Notechis scutatus</i>	Tiger Snake			•					
<i>Parasuta gouldii</i>				•					

Species Name	Common Name	State Listing	Federal Listing	Nature Map	EPBC PMST	Lot 15 2010	BORR 2012	Lot 1 Ducane 2014	Waterloo 2015
<i>Pogona minor</i>	Dwarf Bearded Dragon			•		•			
<i>Pseudonaja affinis</i>	Dugite			•			•		•
<i>Simoselaps bertholdi</i>	Jan's Banded Snake			•					
<i>Tiliqua rugosa</i>				•		•	•		
<i>Underwoodisaurus milii</i>	Barking Gecko			•					
<i>Varanus gouldii</i>	Bungarra or Sand Monitor			•					
<i>Varanus rosenbergi</i>	Heath Monitor			•					

A3: Amphibians

Species Name	Common Name	State Listing	Federal Listing	Nature Map	EPBC PMST	Lot 15 2010	BORR 2012	Lot 1 Ducane 2014	Waterloo 2015
<i>Crinia georgiana</i>	Quacking Frog			•					•
<i>Crinia glauerti</i>	Clicking Frog			•			•	•	•
<i>Crinia insignifera</i>	Squelching Froglet			•			•	•	•
<i>Crinia pseudinsignifera</i>	Bleating Froglet			•					
<i>Geocrinia leai</i>	Ticking Frog			•				•	
<i>Heleioporus eyrei</i>	Moaning Frog			•					•
<i>Heleioporus inornatus</i>	Whooping Frog			•					
<i>Limnodynastes dorsalis</i>	Western Banjo Frog			•					•
<i>Litoria adelaidensis</i>	Slender Tree Frog			•			•		•
<i>Litoria moorei</i>	Motorbike Frog			•					•

Appendix 4

NatureMap Database Search Results



NAME	NAME_ID	FAMILY	GENUS	SPECIES	VERNACULAR	KINGDOM	DIVISION	CLASS	ORDER	SUP_CODE	SUP_NAME
Crinia georgiana	25398	Myobatrachidae	Crinia	georgiana	Quacking Frog	Animalia	Chordata	Amphibia	Anura	AMPHI	Amphibian
Crinia glauerti	25399	Myobatrachidae	Crinia	glauerti	Clicking Frog	Animalia	Chordata	Amphibia	Anura	AMPHI	Amphibian
Crinia insignifera	25400	Myobatrachidae	Crinia	insignifera	Squelching Froglet	Animalia	Chordata	Amphibia	Anura	AMPHI	Amphibian
Crinia pseudinsignifera	25401	Myobatrachidae	Crinia	pseudinsignifera	Bleating Froglet	Animalia	Chordata	Amphibia	Anura	AMPHI	Amphibian
Geocrinia leai	25404	Myobatrachidae	Geocrinia	leai	Ticking Frog	Animalia	Chordata	Amphibia	Anura	AMPHI	Amphibian
Heleioporus eyrei	25410	Limnodynastidae	Heleioporus	eyrei	Moaning Frog	Animalia	Chordata	Amphibia	Anura	AMPHI	Amphibian
Heleioporus inornatus	25411	Limnodynastidae	Heleioporus	inornatus	Whooping Frog	Animalia	Chordata	Amphibia	Anura	AMPHI	Amphibian
Limnodynastes dorsalis	25415	Limnodynastidae	Limnodynastes	dorsalis	Western Banjo Frog	Animalia	Chordata	Amphibia	Anura	AMPHI	Amphibian
Litoria adelaidensis	25378	Hylidae	Litoria	adelaidensis	Slender Tree Frog	Animalia	Chordata	Amphibia	Anura	AMPHI	Amphibian
Litoria moorei	25388	Hylidae	Litoria	moorei	Motorbike Frog	Animalia	Chordata	Amphibia	Anura	AMPHI	Amphibian
Acanthiza apicalis	24260	Acanthizidae	Acanthiza	apicalis	Broad-tailed Thornbill, Inland Thornbill	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Acanthiza chrysorrhoa	24261	Acanthizidae	Acanthiza	chrysorrhoa	Yellow-rumped Thornbill	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Acanthiza inornata	24262	Acanthizidae	Acanthiza	inornata	Western Thornbill	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Acanthorhynchus superciliosus	24560	Meliphagidae	Acanthorhynchus	superciliosus	Western Spinebill	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Accipiter cirrocephalus	25535	Accipitridae	Accipiter	cirrocephalus	Collared Sparrowhawk	Animalia	Chordata	Aves	Falconiformes	BIRD	Bird
Accipiter fasciatus	25536	Accipitridae	Accipiter	fasciatus	Brown Goshawk	Animalia	Chordata	Aves	Falconiformes	BIRD	Bird
Acrocephalus australis	25755	Sylviidae	Acrocephalus	australis	Australian Reed Warbler	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Actitis hypoleucos	41323	Scolopacidae	Actitis	hypoleucos	Common Sandpiper	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Anas castanea	24310	Anatidae	Anas	castanea	Chestnut Teal	Animalia	Chordata	Aves	Anseriformes	BIRD	Bird
Anas gracilis	24312	Anatidae	Anas	gracilis	Grey Teal	Animalia	Chordata	Aves	Anseriformes	BIRD	Bird
Anas platyrhynchos	24313	Anatidae	Anas	platyrhynchos	Mallard	Animalia	Chordata	Aves	Anseriformes	BIRD	Bird
Anas rhynchotis	24315	Anatidae	Anas	rhynchotis	Australasian Shoveler	Animalia	Chordata	Aves	Anseriformes	BIRD	Bird
Anas superciliosa	24316	Anatidae	Anas	superciliosa	Pacific Black Duck	Animalia	Chordata	Aves	Anseriformes	BIRD	Bird
Anhinga novaehollandiae	47414	Anhingidae	Anhinga	novaehollandiae	Australasian Darter	Animalia	Chordata	Aves	Pelecaniformes	BIRD	Bird
Anous tenuirostris subsp. melanops	24506	Laridae	Anous	tenuirostris	Australian Lesser Noddy	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Anthochaera carunculata	24561	Meliphagidae	Anthochaera	carunculata	Red Wattlebird	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Anthochaera lunulata	24562	Meliphagidae	Anthochaera	lunulata	Western Little Wattlebird	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Aquila audax	24285	Accipitridae	Aquila	audax	Wedge-tailed Eagle	Animalia	Chordata	Aves	Falconiformes	BIRD	Bird
Ardea ibis	25558	Ardeidae	Ardea	ibis	Cattle Egret	Animalia	Chordata	Aves	Ciconiiformes	BIRD	Bird
Ardea modesta	41324	Ardeidae	Ardea	modesta	great egret, white egret	Animalia	Chordata	Aves	Ciconiiformes	BIRD	Bird
Ardea novaehollandiae	24340	Ardeidae	Ardea	novaehollandiae	White-faced Heron	Animalia	Chordata	Aves	Ciconiiformes	BIRD	Bird
Ardea pacifica	24341	Ardeidae	Ardea	pacifica	White-necked Heron	Animalia	Chordata	Aves	Ciconiiformes	BIRD	Bird
Ardenna carneipes	41326	Procellariidae	Ardenna	carneipes	Flesh-footed Shearwater, Fleishy-footed Shearwater	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Arenaria interpres	25736	Scolopacidae	Arenaria	interpres	Ruddy Turnstone	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Artamus cinereus	25566	Artamidae	Artamus	cinereus	Black-faced Woodswallow	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Artamus cyanopterus	24353	Artamidae	Artamus	cyanopterus	Dusky Woodswallow	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Aythya australis	24318	Anatidae	Aythya	australis	Hardhead	Animalia	Chordata	Aves	Anseriformes	BIRD	Bird
Biziura lobata	24319	Anatidae	Biziura	lobata	Musk Duck	Animalia	Chordata	Aves	Anseriformes	BIRD	Bird
Burhinus grallarius	24359	Burhinidae	Burhinus	grallarius	Bush Stone-curlew	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Cacatua pastinator	25714	Psittacidae	Cacatua	pastinator	Western Long-billed Corella	Animalia	Chordata	Aves	Psittaciformes	BIRD	Bird
Cacatua sanguinea	25716	Psittacidae	Cacatua	sanguinea	Little Corella	Animalia	Chordata	Aves	Psittaciformes	BIRD	Bird
Cacomantis flabelliformis	25598	Cuculidae	Cacomantis	flabelliformis	Fan-tailed Cuckoo	Animalia	Chordata	Aves	Cuculiformes	BIRD	Bird
Cacomantis pallidus	42307	Cuculidae	Cacomantis	pallidus	Pallid Cuckoo	Animalia	Chordata	Aves	Cuculiformes	BIRD	Bird
Calidris acuminata	24779	Scolopacidae	Calidris	acuminata	Sharp-tailed Sandpiper	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Calidris canutus	25738	Scolopacidae	Calidris	canutus	Red Knot, knot	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Calidris ferruginea	24784	Scolopacidae	Calidris	ferruginea	Curlew Sandpiper	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Calidris ruficollis	24788	Scolopacidae	Calidris	ruficollis	Red-necked Stint	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Calidris tenuirostris	24790	Scolopacidae	Calidris	tenuirostris	Great Knot	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Calyptorhynchus banksii	25717	Psittacidae	Calyptorhynchus	banksii	Red-tailed Black-Cockatoo	Animalia	Chordata	Aves	Psittaciformes	BIRD	Bird
Calyptorhynchus banksii subsp. naso	24731	Psittacidae	Calyptorhynchus	banksii	Forest Red-tailed Black Cockatoo	Animalia	Chordata	Aves	Psittaciformes	BIRD	Bird
Calyptorhynchus baudinii	24733	Psittacidae	Calyptorhynchus	baudinii	Baudin's Cockatoo, White-tailed Long-billed Black Cockatoo	Animalia	Chordata	Aves	Psittaciformes	BIRD	Bird
Calyptorhynchus latirostris	24734	Psittacidae	Calyptorhynchus	latirostris	Carnaby's Cockatoo, White-tailed Short-billed Black Cockatoo	Animalia	Chordata	Aves	Psittaciformes	BIRD	Bird
Calyptorhynchus sp.	48400	Psittacidae	Calyptorhynchus	sp.	white-tailed black cockatoo	Animalia	Chordata	Aves	Psittaciformes	BIRD	Bird
Charadrius leschenaultii	25575	Charadriidae	Charadrius	leschenaultii	Greater Sand Plover	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Charadrius ruficapillus	24377	Charadriidae	Charadrius	ruficapillus	Red-capped Plover	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Chenonetta jubata	24321	Anatidae	Chenonetta	jubata	Australian Wood Duck, Wood Duck	Animalia	Chordata	Aves	Anseriformes	BIRD	Bird
Chrysococcyx lucidus	25601	Cuculidae	Chrysococcyx	lucidus	Shining Bronze Cuckoo	Animalia	Chordata	Aves	Cuculiformes	BIRD	Bird
Circus approximans	24288	Accipitridae	Circus	approximans	Swamp Harrier	Animalia	Chordata	Aves	Falconiformes	BIRD	Bird

NAME	NAME_ID	FAMILY	GENUS	SPECIES	VERNACULAR	KINGDOM	DIVISION	CLASS	ORDER	SUP_CODE	SUP_NAME
Cladorhynchus leucocephalus	24774	Recurvirostridae	Cladorhynchus	leucocephalus	Banded Stilt	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Colluricincla harmonica	25675	Pachycephalidae	Colluricincla	harmonica	Grey Shrike-thrush	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Columba livia	24399	Columbidae	Columba	livia	Domestic Pigeon	Animalia	Chordata	Aves	Columbiformes	BIRD	Bird
Coracina novaehollandiae	25568	Campephagidae	Coracina	novaehollandiae	Black-faced Cuckoo-shrike	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Corvus coronoides	25592	Corvidae	Corvus	coronoides	Australian Raven	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Coturnix pectoralis	24671	Phasianidae	Coturnix	pectoralis	Stubble Quail	Animalia	Chordata	Aves	Galliformes	BIRD	Bird
Cracticus nigrogularis	24420	Cracticidae	Cracticus	nigrogularis	Pied Butcherbird	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Cracticus tibicen	25595	Cracticidae	Cracticus	tibicen	Australian Magpie	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Cracticus torquatus	25596	Cracticidae	Cracticus	torquatus	Grey Butcherbird	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Cygnus atratus	24322	Anatidae	Cygnus	atratus	Black Swan	Animalia	Chordata	Aves	Anseriformes	BIRD	Bird
Dacelo novaeguineae	30901	Halcyonidae	Dacelo	novaeguineae	Laughing Kookaburra	Animalia	Chordata	Aves	Coraciiformes	BIRD	Bird
Daphoenositta chrysoptera	25673	Neosittidae	Daphoenositta	chrysoptera	Varied Sittella	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Diomedea exulans	25618	Diomedidae	Diomedea	exulans	Wandering Albatross	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Diomedea exulans subsp. exulans	30836	Diomedidae	Diomedea	exulans	Snowy Albatross	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Dromaius novaehollandiae	24470	Casuariidae	Dromaius	novaehollandiae	Emu	Animalia	Chordata	Aves	Struthioniformes	BIRD	Bird
Elseyornis melanops	47937	Charadriidae	Elseyornis	melanops	Black-fronted Dotterel	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Eopsaltria australis subsp. griseogularis	24651	Petroicidae	Eopsaltria	australis	Western Yellow Robin	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Eopsaltria georgiana	24652	Petroicidae	Eopsaltria	georgiana	White-breasted Robin	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Epthianura albifrons	24567	Meliphagidae	Epthianura	albifrons	White-fronted Chat	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Erythronyctes cinctus	24379	Charadriidae	Erythronyctes	cinctus	Red-kneed Dotterel	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Eudyptes chrysocome subsp. filholi	24813	Spheniscidae	Eudyptes	chrysocome	Rockhopper Penguin	Animalia	Chordata	Aves	Sphenisciformes	BIRD	Bird
Eudyptula minor	25746	Spheniscidae	Eudyptula	minor	Little Penguin	Animalia	Chordata	Aves	Sphenisciformes	BIRD	Bird
Falco berigora	25621	Falconidae	Falco	berigora	Brown Falcon	Animalia	Chordata	Aves	Falconiformes	BIRD	Bird
Falco cenchroides	25622	Falconidae	Falco	cenchröides	Australian Kestrel, Nankeen Kestrel	Animalia	Chordata	Aves	Falconiformes	BIRD	Bird
Falco longipennis	25623	Falconidae	Falco	longipennis	Australian Hobby	Animalia	Chordata	Aves	Falconiformes	BIRD	Bird
Falco peregrinus	25624	Falconidae	Falco	peregrinus	Peregrine Falcon	Animalia	Chordata	Aves	Falconiformes	BIRD	Bird
Falcunculus frontatus subsp. leucogaster	24616	Pachycephalidae	Falcunculus	frontatus	Western Shrike-tit, Crested Shrike-tit	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Fulica atra	25727	Rallidae	Fulica	atra	Eurasian Coot	Animalia	Chordata	Aves	Gruiformes	BIRD	Bird
Gallinula tenebrosa	25729	Rallidae	Gallinula	tenebrosa	Dusky Moorhen	Animalia	Chordata	Aves	Gruiformes	BIRD	Bird
Gallirallus philippensis	25730	Rallidae	Gallirallus	philippensis	Buff-banded Rail	Animalia	Chordata	Aves	Gruiformes	BIRD	Bird
Gerygone fusca	25530	Acanthizidae	Gerygone	fusca	Western Gerygone	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Grallina cyanoleuca	24443	Dicruridae	Grallina	cyanoleuca	Magpie-lark	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Haematopus longirostris	24487	Haematopodidae	Haematopus	longirostris	Pied Oystercatcher	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Haliaeetus leucogaster	24293	Accipitridae	Haliaeetus	leucogaster	White-bellied Sea-Eagle	Animalia	Chordata	Aves	Falconiformes	BIRD	Bird
Haliastur sphenurus	24295	Accipitridae	Haliastur	sphenurus	Whistling Kite	Animalia	Chordata	Aves	Falconiformes	BIRD	Bird
Halobaena caerulea	24689	Procellariidae	Halobaena	caerulea	Blue Petrel	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Hieraaetus morphnoides	47965	Accipitridae	Hieraaetus	morphnoides	Little Eagle	Animalia	Chordata	Aves	Falconiformes	BIRD	Bird
Himantopus himantopus	25734	Recurvirostridae	Himantopus	himantopus	Black-winged Stilt	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Hirundo neoxena	24491	Hirundinidae	Hirundo	neoxena	Welcome Swallow	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Hydroprogne caspia	48587	Laridae	Hydroprogne	caspia	Caspian Tern	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Larus novaehollandiae subsp. novaehollandiae	24511	Laridae	Larus	novaehollandiae	Silver Gull	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Larus pacificus	25638	Laridae	Larus	pacificus	Pacific Gull	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Lichmera indistincta	25661	Meliphagidae	Lichmera	indistincta	Brown Honeyeater	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Limosa lapponica	30932	Scolopacidae	Limosa	lapponica	Bar-tailed Godwit	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Limosa limosa	25741	Scolopacidae	Limosa	limosa	Black-tailed Godwit	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Macronectes giganteus	24690	Procellariidae	Macronectes	giganteus	Southern Giant Petrel	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Malacorhynchus membranaceus	24326	Anatidae	Malacorhynchus	membranaceus	Pink-eared Duck	Animalia	Chordata	Aves	Anseriformes	BIRD	Bird
Malurus elegans	25650	Maluridae	Malurus	elegans	Red-winged Fairy-wren	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Malurus splendens	25654	Maluridae	Malurus	splendens	Splendid Fairy-wren	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Megalurus gramineus	25758	Sylviidae	Megalurus	gramineus	Little Grassbird	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Melithreptus brevirostris	25663	Meliphagidae	Melithreptus	brevirostris	Brown-headed Honeyeater	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Merops ornatus	24598	Meropidae	Merops	ornatus	Rainbow Bee-eater	Animalia	Chordata	Aves	Coraciiformes	BIRD	Bird
Morus serrator	48008	Sulidae	Morus	serrator	Australasian Gannet	Animalia	Chordata	Aves	Pelecaniformes	BIRD	Bird
Myiagra inquieta	25610	Dicruridae	Myiagra	inquieta	Restless Flycatcher	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Neophema elegans	24738	Psittacidae	Neophema	elegans	Elegant Parrot	Animalia	Chordata	Aves	Psittaciformes	BIRD	Bird
Neophema petrophila	24739	Psittacidae	Neophema	petrophila	Rock Parrot	Animalia	Chordata	Aves	Psittaciformes	BIRD	Bird
Numenius madagascariensis	24798	Scolopacidae	Numenius	madagascariensis	Eastern Curlew	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Numenius phaeopus	25742	Scolopacidae	Numenius	phaeopus	Whimbrel	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird

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Nycticorax caledonicus	25564	Ardeidae	Nycticorax	caledonicus	Rufous Night Heron	Animalia	Chordata	Aves	Ciconiiformes	BIRD	Bird
Oceanites oceanicus	24497	Hydrobatidae	Oceanites	oceanicus	Wilson's Storm-petrel	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Ocyphaps lophotes	24407	Columbidae	Ocyphaps	lophotes	Crested Pigeon	Animalia	Chordata	Aves	Columbiformes	BIRD	Bird
Onychoprion anaethetus	41347	Laridae	Onychoprion	anaethetus	Bridled Tern	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Oxyura australis	24328	Anatidae	Oxyura	australis	Blue-billed Duck	Animalia	Chordata	Aves	Anseriformes	BIRD	Bird
Pachycephala rufiventris	25680	Pachycephalidae	Pachycephala	rufiventris	Rufous Whistler	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Pachyptila belcheri	24692	Procellariidae	Pachyptila	belcheri	Slender-billed Prion	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Pachyptila desolata	24693	Procellariidae	Pachyptila	desolata	Antarctic Prion	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Pachyptila salvini	25707	Procellariidae	Pachyptila	salvini	Salvin's Prion	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Pandion cristatus	48591	Accipitridae	Pandion	cristatus	Osprey, Eastern Osprey	Animalia	Chordata	Aves	Falconiformes	BIRD	Bird
Pardalotus punctatus	25681	Pardalotidae	Pardalotus	punctatus	Spotted Pardalote	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Pardalotus striatus	25682	Pardalotidae	Pardalotus	striatus	Striated Pardalote	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Passer domesticus	25687	Passeridae	Passer	domesticus	House Sparrow	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Passer montanus	24642	Passeridae	Passer	montanus	Eurasian Tree Sparrow	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Pelecanoides urinatrix subsp. exsul	24649	Pelecanoididae	Pelecanoides	urinatrix	Common Diving Petrel	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Pelecanus conspicillatus	24648	Pelecanidae	Pelecanus	conspicillatus	Australian Pelican	Animalia	Chordata	Aves	Pelecaniformes	BIRD	Bird
Petrochelidon nigricans	48061	Hirundinidae	Petrochelidon	nigricans	Tree Martin	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Petroica boodang	48066	Petroicidae	Petroica	boodang	Scarlet Robin	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Phalacrocorax carbo	25697	Phalacrocoracidae	Phalacrocorax	carbo	Great Cormorant	Animalia	Chordata	Aves	Pelecaniformes	BIRD	Bird
Phalacrocorax fuscescens	24665	Phalacrocoracidae	Phalacrocorax	fuscescens	Black-faced Cormorant	Animalia	Chordata	Aves	Pelecaniformes	BIRD	Bird
Phalacrocorax melanoleucos	25698	Phalacrocoracidae	Phalacrocorax	melanoleucos	Little Pied Cormorant	Animalia	Chordata	Aves	Pelecaniformes	BIRD	Bird
Phalacrocorax sulcirostris	24667	Phalacrocoracidae	Phalacrocorax	sulcirostris	Little Black Cormorant	Animalia	Chordata	Aves	Pelecaniformes	BIRD	Bird
Phalacrocorax varius	25699	Phalacrocoracidae	Phalacrocorax	varius	Pied Cormorant	Animalia	Chordata	Aves	Pelecaniformes	BIRD	Bird
Phaps chalcoptera	24409	Columbidae	Phaps	chalcoptera	Common Bronzewing	Animalia	Chordata	Aves	Columbiformes	BIRD	Bird
Phaps elegans	25587	Columbidae	Phaps	elegans	Brush Bronzewing	Animalia	Chordata	Aves	Columbiformes	BIRD	Bird
Phylidonyris niger	48071	Meliphagidae	Phylidonyris	niger	White-cheeked Honeyeater	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Phylidonyris novaehollandiae	24596	Meliphagidae	Phylidonyris	novaehollandiae	New Holland Honeyeater	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Platalea flavipes	24841	Threskiornithidae	Platalea	flavipes	Yellow-billed Spoonbill	Animalia	Chordata	Aves	Ciconiiformes	BIRD	Bird
Platalea regia	24842	Threskiornithidae	Platalea	regia	Royal Spoonbill	Animalia	Chordata	Aves	Ciconiiformes	BIRD	Bird
Platycercus icterotis	25720	Psittacidae	Platycercus	icterotis	Western Rosella	Animalia	Chordata	Aves	Psittaciformes	BIRD	Bird
Platycercus spurius	24747	Psittacidae	Platycercus	spurius	Red-capped Parrot	Animalia	Chordata	Aves	Psittaciformes	BIRD	Bird
Platycercus zonarius	25721	Psittacidae	Platycercus	zonarius	Australian Ringneck, Ring-necked Parrot	Animalia	Chordata	Aves	Psittaciformes	BIRD	Bird
Plegadis falcinellus	24843	Threskiornithidae	Plegadis	falcinellus	Glossy Ibis	Animalia	Chordata	Aves	Ciconiiformes	BIRD	Bird
Pluvialis fulva	24382	Charadriidae	Pluvialis	fulva	Pacific Golden Plover	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Pluvialis squatarola	24383	Charadriidae	Pluvialis	squatarola	Grey Plover	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Podargus strigoides	25703	Podargidae	Podargus	strigoides	Tawny Frogmouth	Animalia	Chordata	Aves	Caprimulgiformes	BIRD	Bird
Podiceps cristatus	25704	Podicipedidae	Podiceps	cristatus	Great Crested Grebe	Animalia	Chordata	Aves	Podicipediformes	BIRD	Bird
Poliocephalus poliocephalus	24681	Podicipedidae	Poliocephalus	poliocephalus	Hoary-headed Grebe	Animalia	Chordata	Aves	Podicipediformes	BIRD	Bird
Polytelis anthopeplus	25722	Psittacidae	Polytelis	anthopeplus	Regent Parrot	Animalia	Chordata	Aves	Psittaciformes	BIRD	Bird
Porphyrio porphyrio	25731	Rallidae	Porphyrio	porphyrio	Purple Swamphen	Animalia	Chordata	Aves	Gruiformes	BIRD	Bird
Porzana fluminea	24769	Rallidae	Porzana	fluminea	Australian Spotted Crake	Animalia	Chordata	Aves	Gruiformes	BIRD	Bird
Porzana tabuensis	24771	Rallidae	Porzana	tabuensis	Spotless Crake	Animalia	Chordata	Aves	Gruiformes	BIRD	Bird
Psophodes nigrogularis subsp. nigrogularis	24388	Cinclosomatidae	Psophodes	nigrogularis	Western Whipbird (western heath)	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Pterodroma brevirostris	24702	Procellariidae	Pterodroma	brevirostris	Kerguelen Petrel	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Pterodroma lessonii	24703	Procellariidae	Pterodroma	lessonii	White-headed Petrel	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Pterodroma mollis	25711	Procellariidae	Pterodroma	mollis	Soft-plumaged Petrel	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Puffinus assimilis subsp. assimilis	24711	Procellariidae	Puffinus	assimilis	Little Shearwater	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Recurvirostra novaehollandiae	24776	Recurvirostridae	Recurvirostra	novaehollandiae	Red-necked Avocet	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Rhipidura albiscapa	48096	Dicruridae	Rhipidura	albiscapa	Grey Fantail	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Rhipidura leucophrys	25614	Dicruridae	Rhipidura	leucophrys	Willie Wagtail	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Rhipidura rufiventris	25616	Dicruridae	Rhipidura	rufiventris	Northern Fantail	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Sericornis frontalis	25534	Acanthizidae	Sericornis	frontalis	White-browed Scrubwren	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Smicronis brevirostris	30948	Acanthizidae	Smicronis	brevirostris	Weebill	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Sterna bergii	24522	Laridae	Sterna	bergii	Crested Tern	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Sterna hirundo	25642	Laridae	Sterna	hirundo	Common Tern	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Sternula nereis	48594	Laridae	Sternula	nereis	Fairy Tern	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Stictonetta naevosa	24329	Anatidae	Stictonetta	naevosa	Freckled Duck	Animalia	Chordata	Aves	Anseriformes	BIRD	Bird
Stipiturus malachurus	25655	Maluridae	Stipiturus	malachurus	Southern Emu-wren	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird

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Strepera versicolor	25597	Cracticidae	Strepera	versicolor	Grey Currawong	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Streptopelia chinensis	25589	Columbidae	Streptopelia	chinensis	Spotted Turtle-Dove	Animalia	Chordata	Aves	Columbiformes	BIRD	Bird
Streptopelia senegalensis	25590	Columbidae	Streptopelia	senegalensis	Laughing Turtle-Dove	Animalia	Chordata	Aves	Columbiformes	BIRD	Bird
Tachybaptus novaehollandiae	25705	Podicipedidae	Tachybaptus	novaehollandiae	Australasian Grebe, Black-throated Grebe	Animalia	Chordata	Aves	Podicipediformes	BIRD	Bird
Tadorna tadornoides	24331	Anatidae	Tadorna	tadornoides	Australian Shelduck, Mountain Duck	Animalia	Chordata	Aves	Anseriformes	BIRD	Bird
Thalassarche carteri	34134	Diomedidae	Thalassarche	carteri	Indian Yellow-nosed Albatross	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Thalassarche melanophris	44607	Diomedidae	Thalassarche	melanophris	Black-browed Albatross	Animalia	Chordata	Aves	Procellariiformes	BIRD	Bird
Thalasseus bergii	48597	Laridae	Thalasseus	bergii	Crested Tern	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Thinornis rubricollis	48135	Charadriidae	Thinornis	rubricollis	Hooded Plover, Hooded Dotterel	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Threskiornis spinicollis	24845	Threskiornithidae	Threskiornis	spinicollis	Straw-necked Ibis	Animalia	Chordata	Aves	Ciconiiformes	BIRD	Bird
Todiramphus sanctus	25549	Halcyonidae	Todiramphus	sanctus	Sacred Kingfisher	Animalia	Chordata	Aves	Coraciiformes	BIRD	Bird
Trichoglossus haematodus	25723	Psittacidae	Trichoglossus	haematodus	Rainbow Lorikeet	Animalia	Chordata	Aves	Psittaciformes	BIRD	Bird
Tringa brevipes	24803	Scolopacidae	Tringa	brevipes	Grey-tailed Tattler	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Tringa glareola	24806	Scolopacidae	Tringa	glareola	Wood Sandpiper	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Tringa nebularia	24808	Scolopacidae	Tringa	nebularia	Common Greenshank, greenshank	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Tringa stagnatilis	24809	Scolopacidae	Tringa	stagnatilis	Marsh Sandpiper, little greenshank	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Turnix varius	48147	Turnicidae	Turnix	varius	Painted Button-quail	Animalia	Chordata	Aves	Turniciformes	BIRD	Bird
Tyto alba subsp. delicatula	24852	Tytonidae	Tyto	alba	Barn Owl	Animalia	Chordata	Aves	Strigiformes	BIRD	Bird
Vanellus miles	25577	Charadriidae	Vanellus	miles	Masked Lapwing	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Vanellus tricolor	24386	Charadriidae	Vanellus	tricolor	Banded Lapwing	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Xenus cinereus	41351	Scolopacidae	Xenus	cinereus	Terek Sandpiper	Animalia	Chordata	Aves	Charadriiformes	BIRD	Bird
Zosterops lateralis	25765	Zosteropidae	Zosterops	lateralis	Grey-breasted White-eye, Silvereye	Animalia	Chordata	Aves	Passeriformes	BIRD	Bird
Arctocephalus forsteri	24208	Otariidae	Arctocephalus	forsteri	New Zealand Fur Seal, long-nosed fur-seal	Animalia	Chordata	Mammalia	Carnivora	MAMMAL	Mammal
Arctocephalus tropicalis	24209	Otariidae	Arctocephalus	tropicalis	Subantarctic fur-seal	Animalia	Chordata	Mammalia	Carnivora	MAMMAL	Mammal
Balaenoptera acutorostrata	24044	Balaenopteridae	Balaenoptera	acutorostrata	Dwarf Minke Whale	Animalia	Chordata	Mammalia	Cetacea	MAMMAL	Mammal
Bettongia penicillata subsp. ogilbyi	24162	Potoroidae	Bettongia	penicillata	Woylie, Brush-tailed Bettong	Animalia	Chordata	Mammalia	Diprotodontia	MAMMAL	Mammal
Bos taurus	24251	Bovidae	Bos	taurus	European Cattle	Animalia	Chordata	Mammalia	Artiodactyla	MAMMAL	Mammal
Cercartetus concinnus	24086	Burramyidae	Cercartetus	concinnus	Western Pygmy-possum, Mundarda	Animalia	Chordata	Mammalia	Diprotodontia	MAMMAL	Mammal
Chalinolobus gouldii	24186	Vespertilionidae	Chalinolobus	gouldii	Gould's Watted Bat	Animalia	Chordata	Mammalia	Chiroptera	MAMMAL	Mammal
Dasyurus geoffroi	24092	Dasyuridae	Dasyurus	geoffroi	Chuditch, Western Quoll	Animalia	Chordata	Mammalia	Dasyuromorphia	MAMMAL	Mammal
Eubalaena australis	24043	Balaenidae	Eubalaena	australis	Southern Right Whale	Animalia	Chordata	Mammalia	Cetacea	MAMMAL	Mammal
Falsistrellus mackenziei	24189	Vespertilionidae	Falsistrellus	mackenziei	Western False Pipistrelle, Western Falsistrelle	Animalia	Chordata	Mammalia	Chiroptera	MAMMAL	Mammal
Felis catus	24041	Felidae	Felis	catus	Cat	Animalia	Chordata	Mammalia	Carnivora	MAMMAL	Mammal
Hydromys chrysogaster	24215	Muridae	Hydromys	chrysogaster	Water-rat, Rakali	Animalia	Chordata	Mammalia	Rodentia	MAMMAL	Mammal
Isodon fusciventer	48588	Peramelidae	Isodon	fusciventer	Quenda, southwestern brown bandicoot	Animalia	Chordata	Mammalia	Peramelemorphia	MAMMAL	Mammal
Macropus fuliginosus	24132	Macropodidae	Macropus	fuliginosus	Western Grey Kangaroo	Animalia	Chordata	Mammalia	Diprotodontia	MAMMAL	Mammal
Megaptera novaeangliae	24051	Balaenopteridae	Megaptera	novaeangliae	Humpback Whale	Animalia	Chordata	Mammalia	Cetacea	MAMMAL	Mammal
Mesoplodon bowdoini	24076	Ziphiidae	Mesoplodon	bowdoini	Andrew's Beaked Whale	Animalia	Chordata	Mammalia	Cetacea	MAMMAL	Mammal
Mesoplodon grayi	24078	Ziphiidae	Mesoplodon	grayi	Gray's Beaked Whale	Animalia	Chordata	Mammalia	Cetacea	MAMMAL	Mammal
Mirounga leonina	24213	Phocidae	Mirounga	leonina	Southern Elephant Seal	Animalia	Chordata	Mammalia	Carnivora	MAMMAL	Mammal
Mus musculus	24223	Muridae	Mus	musculus	House Mouse	Animalia	Chordata	Mammalia	Rodentia	MAMMAL	Mammal
Myrmecobius fasciatus	24146	Myrmecobiidae	Myrmecobius	fasciatus	Numbat, Walpurti	Animalia	Chordata	Mammalia	Dasyuromorphia	MAMMAL	Mammal
Neophoca cinerea	24210	Otariidae	Neophoca	cinerea	Australian Sea-lion	Animalia	Chordata	Mammalia	Carnivora	MAMMAL	Mammal
Notamacropus irma	48022	Macropodidae	Notamacropus	irma	Western Brush Wallaby	Animalia	Chordata	Mammalia	Diprotodontia	MAMMAL	Mammal
Nyctophilus geoffroyi	24194	Vespertilionidae	Nyctophilus	geoffroyi	Lesser Long-eared Bat	Animalia	Chordata	Mammalia	Chiroptera	MAMMAL	Mammal
Nyctophilus gouldi	24195	Vespertilionidae	Nyctophilus	gouldi	Gould's Long-eared Bat	Animalia	Chordata	Mammalia	Chiroptera	MAMMAL	Mammal
Oryctolagus cuniculus	24085	Leporidae	Oryctolagus	cuniculus	Rabbit	Animalia	Chordata	Mammalia	Lagomorpha	MAMMAL	Mammal
Phascogale tapoatafa	25508	Dasyuridae	Phascogale	tapoatafa	Brush-tailed Phascogale	Animalia	Chordata	Mammalia	Dasyuromorphia	MAMMAL	Mammal
Phascogale tapoatafa subsp. wambenger	48070	Dasyuridae	Phascogale	tapoatafa	South-western Brush-tailed Phascogale, Wambenger	Animalia	Chordata	Mammalia	Dasyuromorphia	MAMMAL	Mammal
Pseudocheirus occidentalis	24166	Pseudocheiridae	Pseudocheirus	occidentalis	Western Ringtail Possum, ngwayir	Animalia	Chordata	Mammalia	Diprotodontia	MAMMAL	Mammal
Rattus fuscipes	24243	Muridae	Rattus	fuscipes	Western Bush Rat	Animalia	Chordata	Mammalia	Rodentia	MAMMAL	Mammal
Rattus rattus	24245	Muridae	Rattus	rattus	Black Rat	Animalia	Chordata	Mammalia	Rodentia	MAMMAL	Mammal
Setonix brachyurus	24145	Macropodidae	Setonix	brachyurus	Quokka	Animalia	Chordata	Mammalia	Diprotodontia	MAMMAL	Mammal
Stenella coeruleoalba	48113	Delphinidae	Stenella	coeruleoalba	Striped Dolphin	Animalia	Chordata	Mammalia	Cetacea	MAMMAL	Mammal
Sus scrofa	24259	Suidae	Sus	scrofa	Pig	Animalia	Chordata	Mammalia	Artiodactyla	MAMMAL	Mammal
Trichosurus vulpecula	25521	Phalangeridae	Trichosurus	vulpecula	Common Brushtail Possum	Animalia	Chordata	Mammalia	Diprotodontia	MAMMAL	Mammal
Tursiops aduncus	30954	Delphinidae	Tursiops	aduncus	Indo-Pacific Bottlenose Dolphin	Animalia	Chordata	Mammalia	Cetacea	MAMMAL	Mammal
Tursiops truncatus	24069	Delphinidae	Tursiops	truncatus	Bottlenose Dolphin	Animalia	Chordata	Mammalia	Cetacea	MAMMAL	Mammal

NAME	NAME_ID	FAMILY	GENUS	SPECIES	VERNACULAR	KINGDOM	DIVISION	CLASS	ORDER	SUP_CODE	SUP_NAME
Vespadelus regulus	24206	Vespertilionidae	Vespadelus	regulus	Southern Forest Bat	Animalia	Chordata	Mammalia	Chiroptera	MAMMAL	Mammal
Vulpes vulpes	24040	Canidae	Vulpes	vulpes	Red Fox	Animalia	Chordata	Mammalia	Carnivora	MAMMAL	Mammal
Acritoscincus trilineatus	42368	Scincidae	Acritoscincus	trilineatus	Western Three-lined Skink	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Caretta caretta	25335	Cheloniidae	Caretta	caretta	Loggerhead Turtle	Animalia	Chordata	Reptilia	Testudines	REPTILE	Reptile
Chelodina colliei	43380	Cheluidae	Chelodina	colliei	South-western Snake-necked Turtle	Animalia	Chordata	Reptilia	Testudines	REPTILE	Reptile
Christinus marmoratus	24980	Gekkonidae	Christinus	marmoratus	Marbled Gecko	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Cryptoblepharus buchananii	30893	Scincidae	Cryptoblepharus	buchananii		Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Ctenotus australis	25027	Scincidae	Ctenotus	australis		Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Ctenotus fallens	25039	Scincidae	Ctenotus	fallens		Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Ctenotus impar	25047	Scincidae	Ctenotus	impar		Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Ctenotus labillardieri	25049	Scincidae	Ctenotus	labillardieri		Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Ctenotus ora	41641	Scincidae	Ctenotus	ora	Coastal Plains Skink	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Echiopsis curta	25251	Elapidae	Echiopsis	curta	Bardick	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Egernia kingii	25096	Scincidae	Egernia	kingii	King's Skink	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Egernia napoleonis	25100	Scincidae	Egernia	napoleonis		Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Elapognathus coronatus	25250	Elapidae	Elapognathus	coronatus	Crowned Snake	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Hemiergis gracilipes	30919	Scincidae	Hemiergis	gracilipes	skink	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Hemiergis quadrilineata	25119	Scincidae	Hemiergis	quadrilineata		Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Hydrophis platurus	43384	Elapidae	Hydrophis	platurus	Yellow-bellied Seasnake	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Lerista distinguenda	25131	Scincidae	Lerista	distinguenda		Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Lerista elegans	25133	Scincidae	Lerista	elegans		Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Lialis burtonis	25005	Pygopodidae	Lialis	burtonis		Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Lissolepis luctuosa	42413	Scincidae	Lissolepis	luctuosa	Western Swamp Skink	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Menetia greyii	25184	Scincidae	Menetia	greyii		Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Morelia spilota subsp. imbricata	25240	Boidae	Morelia	spilota	Carpet Python	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Morethia lineoocellata	25191	Scincidae	Morethia	lineoocellata		Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Natator depressus	25344	Cheloniidae	Natator	depressus	Flatback Turtle	Animalia	Chordata	Reptilia	Testudines	REPTILE	Reptile
Neelaps bimaculatus	25248	Elapidae	Neelaps	bimaculatus	Black-naped Snake	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Notechis scutatus	25252	Elapidae	Notechis	scutatus	Tiger Snake	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Parasuta gouldii	25253	Elapidae	Parasuta	gouldii		Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Pogona minor	25510	Agamidae	Pogona	minor	Dwarf Bearded Dragon	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Pseudonaja affinis	25511	Elapidae	Pseudonaja	affinis	Dugite	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Simoselaps bertholdi	25266	Elapidae	Simoselaps	bertholdi	Jan's Banded Snake	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Tiliqua rugosa	25519	Scincidae	Tiliqua	rugosa		Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Tiliqua rugosa subsp. rugosa	25207	Scincidae	Tiliqua	rugosa		Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Underwoodisaurus milii	24983	Gekkonidae	Underwoodisaurus	milii	Barking Gecko	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Varanus gouldii	25218	Varanidae	Varanus	gouldii	Bungarra or Sand Monitor	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Varanus rosenbergi	25225	Varanidae	Varanus	rosenbergi	Heath Monitor	Animalia	Chordata	Reptilia	Squamata	REPTILE	Reptile
Eolophus roseicapillus		Cacatuidae	Eolophus	roseicapillus		Animalia				BIRD	Bird

Appendix 5

EPBC Act Protected Matters Search Tool Results





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: 25/10/18 18:48:25

[Summary](#)

[Details](#)

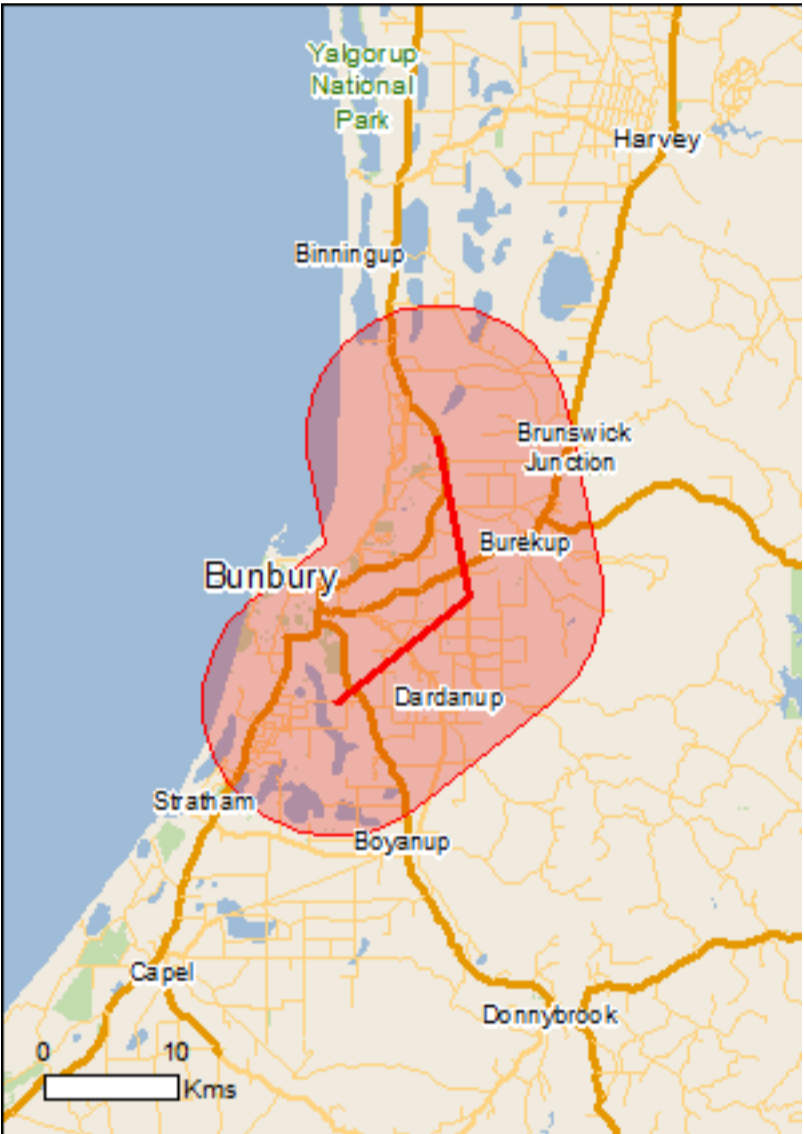
[Matters of NES](#)

[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:	69
Listed Migratory Species:	43

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:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	69
Whales and Other Cetaceans:	13
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	9
Regional Forest Agreements:	1
Invasive Species:	29
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)		[Resource Information]
Name		Proximity
Peel-yalgorup system		Within 10km of Ramsar

Listed Threatened Ecological Communities	[Resource Information]
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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
Corymbia calophylla - Xanthorrhoea preissii woodlands and shrublands of the Swan Coastal Plain	Endangered	Community known to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area

Listed Threatened Species	[Resource Information]
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Name	Status	Type of Presence
Birds		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
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	Breeding 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
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

Name	Status	Type of Presence
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	area 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 likely 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
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Name	Status	Type of Presence
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Fish		
Galaxiella nigrostriata Blackstriped Dwarf Galaxias, Black-stripe Minnow [88677]	Endangered	Species or species habitat likely to occur within area
Nannatherina balstoni Balston's Pygmy Perch [66698]	Vulnerable	Species or species habitat likely to occur within area
Mammals		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Bettongia penicillata ogilbyi Woylie [66844]	Endangered	Species or species habitat may occur within area
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Congregation or aggregation known to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Vulnerable	Species or species habitat may occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Breeding known to occur within area
Setonix brachyurus Quokka [229]	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 known to occur within area
Plants		
Andersonia gracilis Slender Andersonia [14470]	Endangered	Species or species habitat may occur within area
Austrostipa bronwenae [87808]	Endangered	Species or species habitat known to occur within area
Austrostipa jacobsoniana [87809]	Critically Endangered	Species or species habitat known to occur within area
Banksia nivea subsp. uliginosa Swamp Honey-pot [82766]	Endangered	Species or species habitat may occur within area
Banksia squarrosa subsp. argillacea Whicher Range Dryandra [82769]	Vulnerable	Species or species habitat may occur within

Name	Status	Type of Presence
area		
Brachyscias verecundus Ironstone Brachyscias [81321]	Critically 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
Caladenia procera Carbunup King Spider Orchid [68679]	Critically Endangered	Species or species habitat may occur within area
Chamelaucium sp. S coastal plain (R.D.Royce 4872) Royce's Waxflower [87814]	Vulnerable	Species or species habitat may occur within area
Diuris drummondii Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat likely to occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat known to occur within area
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat likely to occur within area
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 known to occur within area
Eleocharis keigheryi Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat known to occur within area
Gastrolobium papilio Butterfly-leaved Gastrolobium [78415]	Endangered	Species or species habitat may occur within area
Lambertia echinata subsp. occidentalis Western Prickly Honeysuckle [64528]	Endangered	Species or species habitat may occur within area
Petrophile latericola Laterite Petrophile [64532]	Endangered	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 known 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
Verticordia densiflora var. pedunculata Long-stalked Featherflower [55689]	Endangered	Species or species habitat may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known

Name	Status	Type of Presence
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	Breeding likely 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
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
Diomedea 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
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

Name	Threatened	Type of Presence
Onychoprion anaethetus Bridled Tern [82845]		habitat may occur within area Foraging, feeding or related behaviour likely to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may 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
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	Breeding likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		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

Name	Threatened	Type of Presence
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Congregation or aggregation 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
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land

[Resource Information]

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

Name
Commonwealth Land - Defence - BUNBURY TRAINING DEPOT

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]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Catharacta skua Great Skua [59472]		Species or species habitat may occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Name	Threatened	Type of Presence
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
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
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
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
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Puffinus assimilis Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Sterna anaethetus Bridled Tern [814]		Foraging, feeding or related behaviour likely to occur within area
Sterna caspia Caspian Tern [59467]		Foraging, feeding or

Name	Threatened	Type of Presence
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	related behaviour known to occur within area
		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]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely 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
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

Name	Threatened	Type of Presence
Mitotichthys meraculus Western Crested Pipefish [66259]		habitat may occur within area 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
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
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 may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or

Name	Threatened	Type of Presence
		related behaviour known to occur within area
Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]	Endangered	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]		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 Dophin, 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]	Vulnerable	Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Congregation or aggregation known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves		[Resource Information]
Name		State
Dardanup		WA
Leschenault Peninsula		WA
Morangarel		WA
NTWA Bushland covenant (0022)		WA
NTWA Bushland covenant (0146)		WA
NTWA Bushland covenant (0150)		WA
Unnamed WA40552		WA
Unnamed WA40564		WA
Unnamed WA46108		WA

Regional Forest Agreements	[Resource Information]
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Note that all areas with completed RFAs have been included.

Name	State
South West WA RFA	Western Australia

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

Name	Status	Type of Presence
Birds		
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur

Name	Status	Type of Presence
		within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Asparagus declinatus Bridal Veil, Bridal Veil Creeper, Pale Berry Asparagus Fern, Asparagus Fern, South African Creeper [66908]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Brachiaria mutica Para Grass [5879]		Species or species habitat may occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Genista linifolia Flax-leaved Broom, Mediterranean Broom, Flax Broom [2800]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Olea europaea Olive, Common Olive [9160]		Species or species habitat may occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Solanum elaeagnifolium Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade,		Species or species habitat likely to occur

Name	Status	Type of Presence
Tomato Weed, White Nightshade, Bull-nettle, Prairie- berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf- nettle, Trompillo [12323]		within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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

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

-33.25222 115.74889,-33.34194 115.77056,-33.4025 115.67861

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.

Appendix 6

DoEE 2017 Foraging Habitat Scoring Tool



Table 3: Foraging habitat scoring tool

Starting Score	Foraging habitat for Carnaby's Cockatoo	Foraging habitat for Baudin's Cockatoo	Foraging habitat for Forest Red-tailed Black cockatoo
10 (Very high quality)	Foraging habitat that is being managed for black cockatoos such as habitat that is the focus of successful rehabilitation , and/or has some level of protection from clearing, and/or is quality habitat described below with attributes contributing to meet a score of ≥ 10 .	Foraging habitat that is being managed for black cockatoos such as habitat that is the focus of, successful rehabilitation , and/or has some level of protection from clearing, and/or is quality habitat described below with attributes contributing to meet a score of ≥ 10 .	Foraging habitat that is being managed for black cockatoos such as habitat that is the focus of successful rehabilitation , and/or has some level of protection from clearing, and/or is quality habitat described below with attributes contributing to meet a score of ≥ 10 .
7 (High quality)	Native shrubland, kwongan heathland and woodland dominated by proteaceous plant species such as <i>Banksia</i> spp. (including <i>Dryandra</i> spp.), <i>Hakea</i> spp. and <i>Grevillea</i> spp., as well as native eucalypt woodland and forest that contains foraging species, including along roadsides. Does not include orchards, canola, or areas under a RFA.	Native eucalypt woodlands and forest, and proteaceous woodland and heath, particularly marri, including along roadsides. Does not include orchards or areas under a RFA.	Jarrah and marri woodlands and forest, and edges of karri forests, including wandoo and blackbutt, within the range of the subspecies, including along roadsides. Does not include areas under a RFA.
5 (Quality)	Pine plantation or introduced eucalypts.	Pine plantation or introduced eucalypts.	Introduced eucalypts as well as the introduced Cape lilac (<i>Melia azedarach</i>).
1 (Low quality)	Individual foraging plants or small stand of foraging plants.	Individual foraging plants or small stand of foraging plants.	Individual foraging plants or small stand of foraging plants.
Additions	Context adjustor - attributes improving functionality of foraging habitat	Context adjustor - attributes improving functionality of foraging habitat	Context adjustor - attributes improving functionality of foraging habitat
+3	Is within the Swan Coastal Plain (important foraging area).	Is within the known foraging area (see map).	Jarrah and/or marri show good recruitment (i.e. evidence of young trees).
+3	Contains trees with suitable nest hollows.	Contains trees with suitable nest hollows.	Contains trees with suitable nest hollows.
+2	Primarily comprises marri.	Primarily contains marri.	Primarily contains marri and/or jarrah.
+2	Contains trees with potential to be used for breeding (dbh ≥ 500 mm or ≥ 300 mm dbh for salmon gum and wandoo).	Contains trees with potential to be used for breeding (dbh ≥ 500 mm or ≥ 300 mm dbh for salmon gum and wandoo).	Contains trees with potential to be used for breeding (dbh ≥ 500 mm or ≥ 300 mm dbh for salmon gum and wandoo).
+1	Is known to be a roosting site.	Is known to be a roosting site.	Is known to be a roosting site.
Subtractions	Context adjustor - attributes reducing functionality of foraging habitat	Context adjustor - attributes reducing functionality of foraging habitat	Context adjustor - attributes reducing functionality of foraging habitat quality
-2	No clear evidence of feeding debris.	No clear evidence of feeding debris.	No clear evidence of feeding debris.
-2	No other foraging habitat within 6 km.	No other foraging habitat within 6 km.	No other foraging habitat within 6 km.
-1	Is > 12 km from a known breeding location.	Is > 12 km from a known breeding location.	Is > 12 km from a known breeding location.
-1	Is > 12 km from a known roosting site.	Is > 12 km from a known roosting site.	Is > 12 km from a known roosting site.
-1	Is > 2 km from a watering point.	Is > 2 km from a watering point.	Is > 2 km from a watering point.
-1	Disease present (e.g. <i>Phytophthora cinnamomi</i> or marri canker).	Disease present (e.g. <i>Phytophthora cinnamomi</i> or marri canker).	Disease present (e.g. <i>Phytophthora cinnamomi</i> or marri canker).

Appendix 7

DoEE 2017 Foraging Habitat Scoring Tool Raw Results



Appendix 7.1: Carnaby's Black-Cockatoo. Application of the Foraging Habitat Scoring Tool. Vegetation codes and descriptions after GHD (2019).

Veg. Unit	Veg. description	Area (ha)	Starting Score	+3: Is within the Swan Coastal Plain (important foraging area).	+3: Contains trees with suitable nest hollows.	+2: Primarily comprises marri	+2: Contains trees with potential to be used for breeding (DBH ≥ 50 cm)	+1: Is known to be a roosting site	Final Score
1	Highly modified / Cleared	786.1	-				-	-	0
2	Non native vegetation	123.3	-	-	-	-	-	-	0
3	Revegetation / Planted	16.8	1	3	3	-	2	-	9
3a	Recent Revegetation / Planted	17.4	1	3	3	-	2	-	9
4	Low woodland of <i>Eucalyptus rudis</i> and <i>Melaleuca raphiophylla</i>	21.9	-	-	-	-	-	-	0
5	<i>Corymbia calophylla</i> and <i>Melaleuca preissiana</i> / <i>Kunzea glabrescens</i> Swamp	2.1	7	3	-	2	2	-	14
6	Very open woodland of <i>Melaleuca raphiophylla</i> over introduced grasses and herbs in paddocks and road reserves	25.2	-	-	-	-	-	-	0
7	<i>Melaleuca preissiana</i> and <i>Kunzea glabrescens</i> Swamp	4.6	-	-	-	-	-	-	0
8	Mosaic of <i>Melaleuca raphiophylla</i> , <i>Corymbia calophylla</i> and <i>Eucalyptus rudis</i> woodland	3.7	1	3	-	-	2	-	6
9	Woodland of <i>Eucalyptus rudis</i> and <i>Corymbia calophylla</i> over <i>Melaleuca raphiophylla</i> on creeklines	5.9	7	3	-	2	2	-	14
10	Woodland of <i>Melaleuca raphiophylla</i> , <i>Eucalyptus rudis</i> and <i>Casuarina obesa</i> ; fringing vegetation along Collie River	2.3	-	-	-	-	-	-	0
11	Open Forest of <i>Corymbia calophylla</i> and <i>Eucalyptus rudis</i> over <i>Agonis flexuosa</i> along the Preston River	21.6	7	3	-	2	2	-	14
11a	Open Forest of <i>Eucalyptus rudis</i> on upper banks of Brunswick River	0.3	-	-	-	-	-	-	0
12	<i>Melaleuca raphiophylla</i> and <i>Melaleuca lateritia</i> Shrubland (MrMI)	1.0	-	-	-	-	-	-	0
12a	(blank)	0.4	-	-	-	-	-	-	0

Veg. Unit	Veg. description	Area (ha)	Starting Score	+3: Is within the Swan Coastal Plain (important foraging area).	+3: Contains trees with suitable nest hollows.	+2: Primarily comprises marri	+2: Contains trees with potential to be used for breeding (DBH ≥ 50 cm)	+1: Is known to be a roosting site	Final Score
13	<i>Astartea scoparia</i> shrubland	0.2	-	-	-	-	-	-	0
14	Woodland of <i>Corymbia calophylla</i> and <i>Agonis flexuosa</i> over weedy grass and herbland	6.8	7	3	3	2	2	-	17
15	Open woodland of <i>Corymbia calophylla</i> over introduced grasses in road reserves and paddocks	25.0	7	3	3	2	2	-	17
16	<i>Agonis flexuosa</i> Closed Woodland over pasture grasses	25.8	-	-	-	-	-	-	0
17	Scattered <i>Eucalyptus rudis</i>	1.4	-	-	-	-	-	-	0
18	Isolated Trees of <i>Eucalyptus</i> species / <i>Agonis flexuosa</i> and <i>Melaleuca</i> species in paddocks	10.7	1	3	-	-	2	-	6
19	Woodland of <i>Eucalyptus marginata</i> over <i>Agonis flexuosa</i> , <i>Banksia attenuata</i> and <i>B. ilicifolia</i>	23.1	7	3	3	-	2	-	15
20	<i>Eucalyptus marginata</i> , <i>Banksia</i> spp, <i>Kunzea glabrescens</i>	3.0	7	3	-	-	2	-	12
	Grand Total	1128.5							

Appendix 7.2: Baudin's Black-Cockatoo. Application of the Foraging Habitat Scoring Tool. Vegetation codes and descriptions after GHD (2019).

Veg. Unit	Veg. description	Area (ha)	Starting Score	+3: Is within the known foraging area	+3: Contains trees with suitable nest hollows.	+2: Primarily comprises marri	+2: Contains trees with potential to be used for breeding (DBH ≥ 50 cm)	+1: Is known to be a roosting site	Final Score
1	Highly modified / Cleared	786.1	-				-	-	0
2	Non native vegetation	123.3	-	-	-	-	-	-	0
3	Revegetation / Planted	16.8	1	3	3	-	2	-	9
3a	Recent Revegetation / Planted	17.4	1	3	3	-	2	-	9
4	Low woodland of <i>Eucalyptus rudis</i> and <i>Melaleuca raphiophylla</i>	21.9	-	-	-	-	-	-	0
5	<i>Corymbia calophylla</i> and <i>Melaleuca preissiana</i> / <i>Kunzea glabrescens</i> Swamp	2.1	7	3	-	2	2	-	14
6	Very open woodland of <i>Melaleuca raphiophylla</i> over introduced grasses and herbs in paddocks and road reserves	25.2	-	-	-	-	-	-	0
7	<i>Melaleuca preissiana</i> and <i>Kunzea glabrescens</i> Swamp	4.6	-	-	-	-	-	-	0
8	Mosaic of <i>Melaleuca raphiophylla</i> , <i>Corymbia calophylla</i> and <i>Eucalyptus rudis</i> woodland	3.7	1	3	-	-	2	-	6
9	Woodland of <i>Eucalyptus rudis</i> and <i>Corymbia calophylla</i> over <i>Melaleuca raphiophylla</i> on creeklines	5.9	7	3	-	2	2	-	14
10	Woodland of <i>Melaleuca raphiophylla</i> , <i>Eucalyptus rudis</i> and <i>Casuarina obesa</i> ; fringing vegetation along Collie River	2.3	-	-	-	-	-	-	0
11	Open Forest of <i>Corymbia calophylla</i> and <i>Eucalyptus rudis</i> over <i>Agonis flexuosa</i> along the Preston River	21.6	7	3	-	2	2	-	14
11a	Open Forest of <i>Eucalyptus rudis</i> on upper banks of Brunswick River	0.3	-	-	-	-	-	-	0
12	<i>Melaleuca raphiophylla</i> and <i>Melaleuca lateritia</i> Shrubland (MrMI)	1.0	-	-	-	-	-	-	0
12a	(blank)	0.4	-	-	-	-	-	-	0

Veg. Unit	Veg. description	Area (ha)	Starting Score	+3: Is within the known foraging area	+3: Contains trees with suitable nest hollows.	+2: Primarily comprises marri	+2: Contains trees with potential to be used for breeding (DBH ≥ 50 cm)	+1: Is known to be a roosting site	Final Score
13	<i>Astartea scoparia</i> shrubland	0.2	-	-	-	-	-	-	0
14	Woodland of <i>Corymbia calophylla</i> and <i>Agonis flexuosa</i> over weedy grass and herbland	6.8	7	3	3	2	2	-	17
15	Open woodland of <i>Corymbia calophylla</i> over introduced grasses in road reserves and paddocks	25.0	7	3	3	2	2	-	17
16	<i>Agonis flexuosa</i> Closed Woodland over pasture grasses	25.8	-	-	-	-	-	-	0
17	Scattered <i>Eucalyptus rudis</i>	1.4	-	-	-	-	-	-	0
18	Isolated Trees of <i>Eucalyptus</i> species / <i>Agonis flexuosa</i> and <i>Melaleuca</i> species in paddocks	10.7	1	3	-	-	2	-	6
19	Woodland of <i>Eucalyptus marginata</i> over <i>Agonis flexuosa</i> , <i>Banksia attenuata</i> and <i>B. ilicifolia</i>	23.1	7	3	3	-	2	-	15
20	<i>Eucalyptus marginata</i> , <i>Banksia</i> spp, <i>Kunzea glabrescens</i>	3.0	7	3	-	-	2	-	12
	Grand Total	1128.5							

Appendix 7.3: Forest Red-tailed Black-Cockatoo. Application of the Foraging Habitat Scoring Tool. Vegetation codes and descriptions after GHD (2019).

Veg. Unit	Veg. description	Area (ha)	Starting Score	+3: Jarrah shows good recruitment.	+3: Contains trees with suitable nest hollows.	+2: Primarily Contains marri and/or Jarrah	+2: Contains trees with potential to be used for breeding (DBH ≥ 50 cm)	+1: Is known to be a roosting site	Final Score
1	Highly modified / Cleared	786.1	-	-	-	-	-	-	-
2	Non native vegetation	123.3	-	-	-	-	-	-	-
3	Revegetation / Planted	16.8	1	-	-	-	2	-	3
3a	Recent Revegetation / Planted	17.4	1	-	3	-	2	-	6
4	Low woodland of <i>Eucalyptus rudis</i> and <i>Melaleuca raphiophylla</i>	21.9	1		-	-	2	-	3
5	<i>Corymbia calophylla</i> and <i>Melaleuca preissiana</i> / <i>Kunzea glabrescens</i> Swamp	2.1	7	3	-	-	2	-	12
6	Very open woodland of <i>Melaleuca raphiophylla</i> over introduced grasses and herbs in paddocks and road reserves	25.2	-		-	-	2	-	2
7	<i>Melaleuca preissiana</i> and <i>Kunzea glabrescens</i> Swamp	4.6	-	-	-	-	2	-	2
8	Mosaic of <i>Melaleuca raphiophylla</i> , <i>Corymbia calophylla</i> and <i>Eucalyptus rudis</i> woodland	3.7	1	3	-	-	2	-	6
9	Woodland of <i>Eucalyptus rudis</i> and <i>Corymbia calophylla</i> over <i>Melaleuca raphiophylla</i> on creeklines	5.9	7	3	-	2	2	-	14
10	Woodland of <i>Melaleuca raphiophylla</i> , <i>Eucalyptus rudis</i> and <i>Casuarina obesa</i> ; fringing vegetation along Collie River	2.3	1	-	-	-	2	-	3
11	Open Forest of <i>Corymbia calophylla</i> and <i>Eucalyptus rudis</i> over <i>Agonis flexuosa</i> along the Preston River	21.6	7	3	-	2	2	-	14
11a	Open Forest of <i>Eucalyptus rudis</i> on upper banks of Brunswick River	0.3	1	-	-	-	2	-	3
12	<i>Melaleuca raphiophylla</i> and <i>Melaleuca lateritia</i> Shrubland (MrMI)	1.0	-	-	-	-	-	-	-
12a	(blank)	0.4	-	-	-	-	-	-	-

Veg. Unit	Veg. description	Area (ha)	Starting Score	+3: Jarrah shows good recruitment.	+3: Contains trees with suitable nest hollows.	+2: Primarily Contains marri and/or Jarrah	+2: Contains trees with potential to be used for breeding (DBH \geq 50 cm)	+1: Is known to be a roosting site	Final Score
13	<i>Astartea scoparia</i> shrubland	0.2	-	-	-	-	-	-	-
14	Woodland of <i>Corymbia calophylla</i> and <i>Agonis flexuosa</i> over weedy grass and herbland	6.8	7	3	3	2	2	-	17
15	Open woodland of <i>Corymbia calophylla</i> over introduced grasses in road reserves and paddocks	25.0	7	3	3	2	2	-	17
16	<i>Agonis flexuosa</i> Closed Woodland over pasture grasses	25.8	-	-	-	-	-	-	-
17	Scattered <i>Eucalyptus rudis</i>	1.4	1	-	-	-	2	-	3
18	Isolated Trees of <i>Eucalyptus</i> species / <i>Agonis flexuosa</i> and <i>Melaleuca</i> species in paddocks	10.7	1	-	-	-	2	-	3
19	Woodland of <i>Eucalyptus marginata</i> over <i>Agonis flexuosa</i> , <i>Banksia attenuata</i> and <i>B. ilicifolia</i>	23.1	7	3	3	2	2	-	17
20	<i>Eucalyptus marginata</i> , <i>Banksia</i> spp, <i>Kunzea glabrescens</i>	3.0	7	3	-	2	2	-	14
	Grand Total	1128.5	-	-	-	-	-	-	

