



Attachment 8 Likelihood of Occurrence

Casuarina South Precinct Residential Development - Lots 110, 111, 108 and 114 Lugg Place

EPBC Act Referral

316 Property Developments Pty Ltd and 316 Property Group Pty Ltd

SLR Project No.: 675.073556.00001

8.1 Flora

A PMST search and results from 360 Environmental (2023) (Att5_BiologicalSurvey) confirm the flora and vegetation values within the Project Area and broader Survey Area. Attachment 7 (Att7_PMST Results) provides the PMST search results for the Project Area.

Threatened flora that may occur in the Survey Area, based on the results from the PMST search and their likelihood of occurrence as assessed by 360 Environmental (2023) for the Survey Area are presented in Table 1.

The categories used by 360 Environmental (2023) to define the likelihood of occurrence of species in the Survey Area, are as follows:

- **Previously recorded:** The species has been previously recorded in the Project Area.
- **High (likely to occur):** There are existing flora records of the species in close proximity to the Survey Area (within 5 km) and:
 - o The species is strongly linked to a specific habitat, which is present in the Survey Area; or
 - o The species has more general habitat preferences, and suitable habitat is present.
- **Medium (may occur):** There is suitable habitat in the Survey Area, but the species is recorded infrequently in the locality; or there are existing records of the species from the locality (within 20 km), however:
 - o The species is strongly linked to a specific habitat, of which only a small amount is present in the Survey Area; or
 - o The species has more general habitat preferences, but only some suitable habitat is present.
- **Low (unlikely to occur):** The species is linked to a specific habitat, which is absent from the Survey Area; or suitable habitat is present, however there are no existing records of the species from the locality despite reasonable previous search effort in suitable habitat; or there is some suitable habitat in the Survey Area, however the species is very infrequently recorded in the locality.

Table 1: Threatened flora potentially occurring in the Survey Area from PMST

Scientific Name	Common Name	Conservation Status (Federal)	Post-Survey Likelihood of Occurrence
<i>Andersonia gracilis</i>	Slender Andersonia	Endangered	Low: Due to the location of historical records or preferred habitat not being present, <i>Andersonia gracilis</i> has a low likelihood of occurrence within the Survey Area.
<i>Banksia mimica</i>	Summer Honeypot	Endangered	Low: Due to the location of historical records or preferred habitat not being present, <i>Banksia mimica</i> has a low likelihood of occurrence within the Survey Area.
<i>Caladenia huegelii</i>	King Spider-orchid	Endangered	Low: Suitable habitat present. Nearest record occurs less than 5 km from the Survey Area.



Scientific Name	Common Name	Conservation Status (Federal)	Post-Survey Likelihood of Occurrence
<i>Diuris micrantha</i>	Dwarf Bee-orchid	Vulnerable	Low: Suitable habitat present. Nearest record occurs less than 5 km from the Survey Area.
<i>Diuris purdiei</i>	Purdie's Donkey-orchid	Endangered	Low: Suitable habitat present and record is over 5 km from the Survey Area.
<i>Drakaea elastica</i>	Glossy-leafed Hammer Orchid	Endangered	Low: Suitable habitat present. Nearest record occurs less than 5 km from the Survey Area.
<i>Drakaea micrantha</i>	Dwarf Hammer-orchid	Vulnerable	Low: Suitable habitat present. Nearest record is within 20 km of the Survey Area.
<i>Morelotia australiensis</i> listed as <i>Tetraria australiensis</i>	Southern Tetraria	Vulnerable	Low: No suitable habitat present. Nearest record is within 20 km of the Survey Area.
<i>Thelymitra variegata</i>	Queen of Sehba	Critically Endangered	Low: Suitable habitat present. Nearest record is within 20 km of the Survey Area.

8.2 Fauna

A PMST search (Att7_PMST Results) and results from the SLR (2024) (Att6_Fauna & Black Cockatoo Assessment) fauna assessment confirm the fauna values in the Project Area and broader Survey Area.

Threatened fauna that may occur in the Survey Area, based on the results from the PMST search and their likelihood of occurrence as assessed by SLR (2024) for the Survey Area are presented in

Table 2.

The categories used by SLR (2024) to define the likelihood of occurrence of species in the Survey Area, are as follows:

- **Previously recorded:** The species has been previously recorded in the Project Area.
- **High (likely to occur):** The species has been recorded in the Survey Area in the last 15 years and:
 - o The species is strongly linked to a specific habitat, which is present in the Survey Area; or
 - o The species has more general habitat preferences, and suitable habitat is present.
- **Medium (may occur):** There is suitable habitat in the Survey Area, but the species is recorded infrequently in the locality; or there are existing records of the species from the locality (within 20 km), however:
 - o The species is strongly linked to a specific habitat, of which only a small amount is present in the Survey Area; or
 - o The species has more general habitat preferences, but only some suitable habitat is present.
- **Low (unlikely to occur):** The species is linked to a specific habitat, which is absent from the Survey Area; or suitable habitat is present, however there are no existing



records of the species from the locality despite reasonable previous search effort in suitable habitat; or there is some suitable habitat in the Survey Area, however the species is very infrequently recorded in the locality.

Fauna species identified by database searches that occur exclusively within marine environments or are known to be extinct or locally extinct were also excluded from the list of significant species (SLR, 2024). The Survey Area does not contain any marine habitat.

Table 2: Threatened fauna potentially occurring in the Survey Area from PMST

Scientific Name	Common Name	Conservation Status (Federal)	Likelihood of Occurrence
<i>Botaurus poiciloptilus</i>	Australasian Bittern	Endangered	Low: The nearest record is 12 km to the northeast of the Survey Area at Forrestdale Lake and was recorded in 2012. The Survey Area does not contain suitable habitat for the species given a lack of dense fringing vegetation (freshwater wetlands with heavy vegetation, shrubbery, reedbeds and sedges).
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Vulnerable	Low: The nearest record is located 6 km to the south of the Survey Area and was recorded in 2005. The species was most recently recorded in 2013, approximately 18 km north of the Survey Area. While it is possible the taxon may use wetlands within the Survey Area, it typically uses larger water bodies (preferable habitat includes fresh and salt wetlands, muddy edges of lagoons, swamps, lakes, dams, soaks, sewage farms, and temporary floodwaters).
<i>Calidris canutus</i>	Red Knot	Vulnerable	Low: The nearest record is located 16 km to the north west of the Survey Area and was recorded in 2011. The Survey Area does not contain suitable habitat (coastal and extensive firm tidal flats).
<i>Calidris ferruginea</i>	Curlew Sandpiper	Critically Endangered	Low: The nearest record is 4.3 km south of the Survey Area and was recorded in 2001. The species was most recently recorded in 2010 approximately 11.5 km north of the Survey Area. The Survey Area does not contain suitable wading habitat (inter-tidal mudflats of estuaries, lagoons, mangrove channels, dams, floodwaters, and flooded



Scientific Name	Common Name	Conservation Status (Federal)	Likelihood of Occurrence
			saltbush surrounds of inland lakes).
<i>Calyptrorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	Vulnerable	Recorded: The species was recorded at nine locations throughout the Survey Area. The species was predominantly recorded in the Marri Woodland habitat. This habitat contains high quality foraging habitat for the species and may also be used for roosting and nesting. The database searches also identified a record 0.6 km from the Survey Area, recorded in 2018. The species was also recorded 30 km from the Survey Area in 2021 by Bamford Consulting Ecologists. The Survey Area contains suitable habitat (tall eucalypt forest, woodland).
<i>Charadrius leschenaultii</i>	Greater Sand Plover	Vulnerable	Low: The nearest record is 15 km to the northwest of the Survey Area, recorded in 2001 at Woodman Point. The Survey Area does not contain suitable habitat (tidal flats and beaches).
<i>Dasyurus geoffronii</i>	Chuditch, Western Quoll	Vulnerable	Medium: The nearest record is 4 km north of the Survey Area, recorded in 2013. The species was most recently recorded in 2017 approximately 10.5 km southwest of the Survey Area. The species may use the Eucalyptus woodland within the Survey Area.
<i>Leipoa ocellata</i>	Malleefowl	Vulnerable	Low: Survey Area falls outside species distribution.
<i>Numenius madagascariensis</i>	Eastern Curlew	Critically Endangered	Low: The nearest record is 8 km to the southwest of the Survey Area, recorded in 1938 and 10.5 km southwest of the Survey Area in 1948. The Survey Area does not contain suitable wading habitat (coastal, and tidal flats).
<i>Pristis pristis</i>	Large-tooth Sawfish	Endangered	Excluded: Exclusively marine species, and no marine habitat occurs within the Survey Area.
<i>Pseudocheirus occidentalis</i>	Western Ringtail Possum	Critically Endangered	Low: The Survey Area does not contain suitable habitat for the species (<i>Agonis</i> forest and woodland, and Tuart forest with <i>Agonis</i> mid storey).



Scientific Name	Common Name	Conservation Status (Federal)	Likelihood of Occurrence
<i>Rostratula australis</i>	Australian Painted Snipe	Endangered	Low: No literature or DBCA database records within 20 km of the Survey Area. Species was returned by PMST, which searches by modelled distribution, not actual records; and Nature Map, which does not provide discrete locations of records. The Survey Area contains habitat that is suitable for the species (well vegetated surrounds and shallows of wetlands).
<i>Sternula nereis nereis</i>	Australian Fairy Tern	Vulnerable	Low: The nearest record is located 15 km to the west of the Survey Area and was recorded in 2019. The species was most recently recorded in 2020, approximately 16.5 km to the west of the Survey Area. The Survey Area does not contain suitable habitat (coastal, bays, inlets, beaches, salt ponds and lakes).
<i>Tringa nebularia</i>	Common Greenshank	Endangered	Low: The nearest record is 3 km south west of the Survey Area, recorded in 1991. The species was most recently recorded in 2013 approximately 13 km north of the Survey Area. While it is possible the taxon may use temporary wetlands within the Survey Area, it typically uses larger water bodies and coastal habitats (preferable habitat includes permanent and temporary wetlands, billabongs, swamps, lakes, floodplains, sewage farms salt works ponds, flooded irrigated crops, mudflats, mangrove swamps, and muddy shallows of lagoons).
<i>Zanda baudinii</i> listed as <i>Calyptorhynchus baudinii</i>	Baudin's Cockatoo	Endangered	Medium: The species was recorded 10.5 km to the east of the Survey Area in 2012. The species was also recorded 30 km from the Survey Area in 2021 by Bamford Consulting Ecologists. The Survey Area falls outside the modelled distribution for the species however contains suitable habitat for use by the species (forests and farm trees).



Scientific Name	Common Name	Conservation Status (Federal)	Likelihood of Occurrence
<i>Zanda latirostris</i> listed as <i>Calyptorhynchus latirostris</i>	Carnaby's Black Cockatoo	Endangered	Recorded: The species was recorded at five locations throughout the Survey Area. The species was recorded in the Marri Woodland and the Wetland/Shrubland habitats. These habitats provide high quality foraging opportunities for the species and may also provide nesting and roosting habitat. The database searches identified a record 0.1 km from the Survey Area, recorded in in 2016. The species was also recorded 8 km from the Survey Area in 2020 by Emerge Associates (2020). The Survey Area contains suitable habitat (forests, woodlands, heathlands, farms).

8.3 Migratory Species

Threatened Migratory Species that may occur in the Project Area and the broader Survey Area, based on the results from the PMST (Att3_PMST Results), and their expected occurrence as assessed by SLR (2025) for the Survey Area (Att6_Fauna & Black Cockatoo Assessment) are presented in Table 3.

The categories used to define the expected occurrence of Migratory species are the same applied for Threatened Fauna as described in Section 8.2.

Table 3: Migratory Species potentially occurring in the Survey Area from PMST

Scientific Name	Common Name	Conservation Status (Federal)	Expected Occurrence
<i>Actitis hypoleucos</i>	Common Sandpiper	Migratory; Marine	Low: The nearest record is 4.5 km to the northwest of the Survey Area, recorded in 1991. One record was made in Lake Richmond, Rockingham in 2009. Survey Area contains habitat that is suitable for the species (interior wetlands, and river pools).
<i>Apus pacificus</i>	Fork-tailed Swift	Migratory; Marine	Low: The nearest records 5.5 km to the south of the Survey Area recorded in 2000. The species may fly through the Survey Area but is unlikely to be dependent on the habitats contained within the Survey Area.
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Vulnerable; Migratory; Marine	Low: The nearest record is located 6 km to the south of the Survey Area and was recorded in 2005. The species was most recently recorded in 2013, approximately



Scientific Name	Common Name	Conservation Status (Federal)	Expected Occurrence
			18 km north of the Survey Area. While it is possible the taxon may use wetlands within the Survey Area, it typically uses larger water bodies (preferable habitat includes fresh and salt wetlands, muddy edges of lagoons, swamps, lakes, dams, soaks, sewage farms, and temporary floodwaters).
<i>Calidris canutus</i>	Red Knot	Vulnerable; Migratory; Marine	Low: The nearest record is located 16 km to the north west of the Survey Area and was recorded in 2011. The Survey Area does not contain suitable habitat (coastal and extensive firm tidal flats).
<i>Calidris ferruginea</i>	Curlew Sandpiper	Critically Endangered; Migratory; Marine	Low: The nearest record is 4.3 km south of the Survey Area and was recorded in 2001. The species was most recently recorded in 2010 approximately 11.5 km north of the Survey Area. The Survey Area does not contain suitable wading habitat (inter-tidal mudflats of estuaries, lagoons, mangrove channels, dams, floodwaters, and flooded saltbush surrounds of inland lakes).
<i>Calidris melanotos</i>	Pectoral Sandpiper	Migratory; Marine	Low: The nearest and most recent record is 11.5 km to the north of the Survey Area, recorded in 2012. The Survey Area does not contain suitable wading habitat (coastal fresh to saline wetlands, mudflats, and swamps with dense vegetation).
<i>Charadrius leschenaultii</i>	Greater Sand Plover	Vulnerable; Migratory; Marine	Low: The nearest record is 15 km to the northwest of the Survey Area, recorded in 2001 at Woodman Point. The Survey Area does not contain suitable habitat (tidal flats and beaches).
<i>Motacilla cinerea</i>	Grey Wagtail	Migratory; Marine	Low: The Survey Area does not contain suitable habitat for the species (fresh sandy or rocky streams, mown grass, ploughed land, and sewage ponds).
<i>Numenius madagascariensis</i>	Eastern Curlew	Critically Endangered; Migratory; Marine	Low: The nearest record is 8 km to the southwest of the Survey Area, recorded in 1938 and 10.5 km southwest of the Survey Area in 1948. The Survey Area does not contain suitable wading habitat (coastal, and tidal flats).



Scientific Name	Common Name	Conservation Status (Federal)	Expected Occurrence
<i>Pandion haliaetus</i>	Osprey	Migratory; Marine	Low: The nearest record is located 12.5 km to the northeast of the Survey Area and was recorded in 1991. While it is possible the taxon may use wetlands within the Survey Area, it typically uses larger water bodies and coastal habitats (preferred habitats include coastal, estuaries, large rivers, major rivers, wetlands, and river pools).
<i>Pristis pristis</i>	Large-tooth Sawfish	Endangered	Excluded: Exclusively marine species, and no marine habitat occurs within the Survey Area.
<i>Tringa nebularia</i>	Common Greenshank	Endangered; Migratory; Marine	Low: The nearest record is 3 km south west of the Survey Area, recorded in 1991. The species was most recently recorded in 2013 approximately 13 km north of the Survey Area. While it is possible the taxon may use temporary wetlands within the Survey Area, it typically uses larger water bodies and coastal habitats (preferable habitat includes permanent and temporary wetlands, billabongs, swamps, lakes, floodplains, sewage farms salt works ponds, flooded irrigated crops, mudflats, mangrove swamps, and muddy shallows of lagoons).

