ATTACHMENT 11: LIKELIHOOD OF OCCURRENCE ASSESSMENT FOR MNES (THREATENED SPECIES AND COMMUNITIES, MIGRATORY SPECIES)

Due to the inherent buffer in the PMST, the PMST report identified the potential presence of a number of Threatened and Migratory species which may be unlikely to occur within the Project Area. The EPBC Act Business Portal similarly identified the potential presence of a number of Threatened species within the Project Area, based on the spatial data for the Project Area loaded into the portal.

A 'Likelihood of Occurrence' assessment was conducted for the listed MNES, assessing the potential for these to occur within, or in proximity to, the Project Area. A 'Likelihood of Occurrence' category was applied to all species identified within the PMST report. Criteria used for the 'Likelihood of Occurrence' is described in the table below.

Table 1: Threatened Species and Migratory Species

Likelihood of Occurrence	Criteria
Unlikely	No observations of species/sensitive receptors within proximity to the Development Envelope.
Possible	Species/sensitive receptors were identified by the PMST as potentially occurring within the Development Envelope. Past observations of species are rare or restricted to limited individual sightings.
Likely	Species/sensitive receptors identified by PMST as likely to occur and/or use habitat within the Development Envelope. Development Envelope supports habitat likely to be utilised by the species for foraging, breeding, migration, or roosting.
Known	Species/sensitive receptors are known to occur within the Development Envelope. Species are regularly sighted within the area or known movements (such as migration) have been recorded as occurring within the Development Envelope.

The following information and data sources were used to inform the 'Likelihood of Occurrence' assessment for species listed under the EPBC Act and identified in the PMST:

- Results of recent targeted vegetation and fauna surveys over the Project Area
- Peer-reviewed scientific papers and studies, as cited
- Database searches:
    - EPBC Protected Matters Search Tool (PMST) (DCCEEW)
    - Atlas of Living Australia (CSIRO)
    - Species Profile and Threats Database (SPRATS) (DCCEEW)
    - Biologically Important Areas (BIA) (DCCEEW)
- Species Recovery Plans and Conservation Advice
- Previous environmental studies within or in proximity to the Project Area, as cited
- Targeted survey for the Northern Quoll, Ghost Bat and Greater Bilby , (Ecologia In prep [2024]).

The tables below provide details for these species and justification for classifying them as a having a "Known", "Likely", "Possible" or "Unlikely" occurrence within the Project Area. Potential impacts on species having a likelihood of occurrence of 'Known', 'Likely' or 'Possible' are assessed within the referral.

Table 2: Threatened Species

Common name	Scientific name	Conservation status (EPBC Act)	PMST Presence	Comments	Likelihood of Occurrence
Mammals (Terrestrial)					
Northern Quoll*	*Dasyurus hallucatus*	Endangered	NA	Low Ecological Services (Eco Logical Australia 2021) recorded unconfirmed signs (native mammal scats) of the Northern Quoll. Given the absence of species habitat requirements (rocky areas, Eucalypt forests etc.) and no previous records within 100 km of the Project Area (DBCA 2021), this species is considered as unlikely to occur within the Project Area (Eco Logical Australia 2021). A recent targeted survey found no records of the Northern Quoll and it was considered highly unlikely that the species would use the habitat within the footprint (Ecologia In prep [2024]).	Unlikely
Northern Brushtail Possum*	*Trichosurus vulpecula arnhemensis*	Vulnerable	Possible	No habitat for this species is present within the Project Area. Only one record 50 km east of the Project Area from 1965 (Eco Logical Australia 2021).	Unlikely
Ghost Bat*	*Macroderma gigas*	Vulnerable	Possible	No habitat for this species is present within the Project Area. Most recent record (2006) is 50 km northeast of the Project Area. A recent targeted survey similarly found no records of the Ghost Bat and it was considered highly unlikely that the species would use the habitat within the footprint (Ecologia In prep [2024]).	Unlikely
Greater Bilby	*Macrotis lagotis*	Vulnerable	Possible	Potential old diggings found at well pads three (3) and four (4) suggest that Bilbies have previously foraged within the area. However, according to the guidelines, old diggings on their own do not confirm presence of bilbies, therefore it is considered as “potential bilby activity, presence not confirmed” (DBCA, 2017). No presence of Bilby scats, active burrows or fresh tracks needed to confirm presence of Bilbies were found during the survey Validating historic survey effort in the area that suggests low	Unlikely

				likelihood that bilby's will be present / active or impacted.	
West Kimberley black-footed rock-wallaby	*Petrogale lateralis subsp. (West Kimberley)*	Vulnerable	Possible	No habitat for this species is present within the Project Area. Three historical records (1901 and 1992) occur 30 km west of the Project Area.	Unlikely
Birds					
Gouldian Finch*	*Erythura hallucatus*	Endangered	Possible	Potentially suitable habitat is present within the Project Area. Closest record is 30 km south of the Project Area from 2010	Possible
Princess Parrot, Alexandra's Parrot	*Polytelis alexandrae*	Vulnerable	Possible	Project Area is at the northern extent of this species range, with most records confined to the Great Sandy Desert, Little Sandy Desert, Great Victoria Desert and Central Ranges bioregions. One historical record is located within 100 km of the Project Area.	Unlikely
Curlew sandpiper	*Calidris ferruginea*	Critically Endangered	Possible	No suitable habitat for this species is present within the Project Area. A nearby record (2003) is located approximately 15 km to the west-southwest of the Project Area and is associated with the Fitzroy River.	Unlikely
Eastern Curlew	*Numenius madagascariensis*	Critically Endangered	Possible	No habitat for this species is present within the Project Area.	Unlikely
Night Parrot	*Pezoporus occidentalis*	Endangered	Possible	The closest confirmed record is over 400 km south-east of the Project Area.	Unlikely
Purple-crowned fairy-wren (western)*	*Malurus coronatus coronatus*	Endangered	Possible	No habitat for this species is present within the Project Area. Several historical records (1920 - 2000) 25 km east of the Project Area	Unlikely
Australian Painted Snipe	*Rostratula australis*	Endangered	Possible	No habitat for this species is present within the Project Area.	Unlikely
Grey falcon	*Falco hypoleucos*	Vulnerable	Possible	Marginally suitable habitat for this species occurs within the Project Area. Only one record 50 km south of the Project Area from 2002.	Possible
Red Goshawk	*Erythrotriorchis radiatus*	Endangered	Possible	This species was not in scope of the flora and fauna survey as it was only added to the PMST list in March 2023.	Possible

Reptiles					
Northern Blue-tongue Skink	*Tiliqua scincoides intermedia*	Critically Endangered	Possible	This species was not in scope of the flora and fauna survey as it was only added to the PMST list in December 2023.	Possible
Mertens' Water Monitor	*Varanus mertensi*	Endangered	Unlikely	This species was not in scope of the flora and fauna survey as it was only added to the PMST list in December 2023. No drainage channels.	Possible
Fish					
Largetooth sawfish, Freshwater sawfish*	*Pristis pristis*	Vulnerable	Possible	No habitat for this species is present within the Project Area. Records are confined to the Fitzroy River.	Unlikely

Notes:
Species having a likelihood of occurrence of 'Known', 'Likely' or 'Possible' are highlighted by blue shading.
*Species not having a likelihood of occurrence of 'Known', 'Likely' or 'Possible' but highlighted by DCCEEW as potentially occurring (letter of 14 February 2023).

Table 3: Migratory Species

Common name	Scientific name	Conservation status (EPBC Act)	PMST Presence	Comments	Likelihood of Occurrence
Migratory Birds					
Common Sandpiper	*Actitis hypoleucos*	Migratory	Possible	Two records from 2009 occur 10 km north of the project area. Sections of the Project Area are likely to provide marginally suitable habitat seasonally and after major rainfall events.	Possible
Fork-tailed swift	*Apus pacificus*	Migratory	Possible	This species occurs across a variety of habitats. One record from 2010 occurs 15 km west of the Project Area.	Possible
Sharp-tailed Sandpiper	*Calidris acuminata*	Vulnerable	Possible	One record from 2009 occurs 10 km north of the project area. Sections of the project area are likely to provide marginally suitable habitat seasonally and after major rainfall events.	Possible
Pectoral Sandpiper	*Calidris melanotos*	Migratory	Possible	No suitable habitat for this species is present within the Project Area.	Unlikely

Red-rumped Swallow	*Cecropis daurica*	Migratory	Possible	No suitable habitat for this species is present within the Project Area.	Unlikely
Oriental plover	*Charadrius veredus*	Migratory	Possible	One record from 2010 occurs 20 km west of the Project Area. Sections of the Project Area may provide marginally suitable habitat seasonally and after major rainfall events, however majority of records of this species are confined to coastal areas.	Unlikely
Oriental pratincole	*Glareola maldivarum*	Migratory	Possible	No habitat for this species is present within the Project Area. Only one record is known, from 50 km west of the Project Area, from 2003.	Unlikely
Barn Swallow	*Hirundo rustica*	Migratory	Possible	No habitat for this species is present within the Project Area.	Unlikely
Grey Wagtail	*Motacilla cinerea*	Migratory	Possible	No habitat for this species is present within the Project Area.	Unlikely
Yellow Wagtail	*Motacilla flava*	Migratory	Possible	No habitat for this species is present within the Project Area.	Unlikely
Reptiles					
Salt-water Crocodile, Estuarine Crocodile	*Crocodylus porosus*	Migratory	Possible	The Project Area is located over 120 km inland. No surface water areas are present. Based on GIS analysis of the wider Development Envelope (Geoscience Australia 2022) the surface hydrology within the region is limited to non-perennial watercourses. The presence of suitable habitat for this species is considered unlikely.	Unlikely