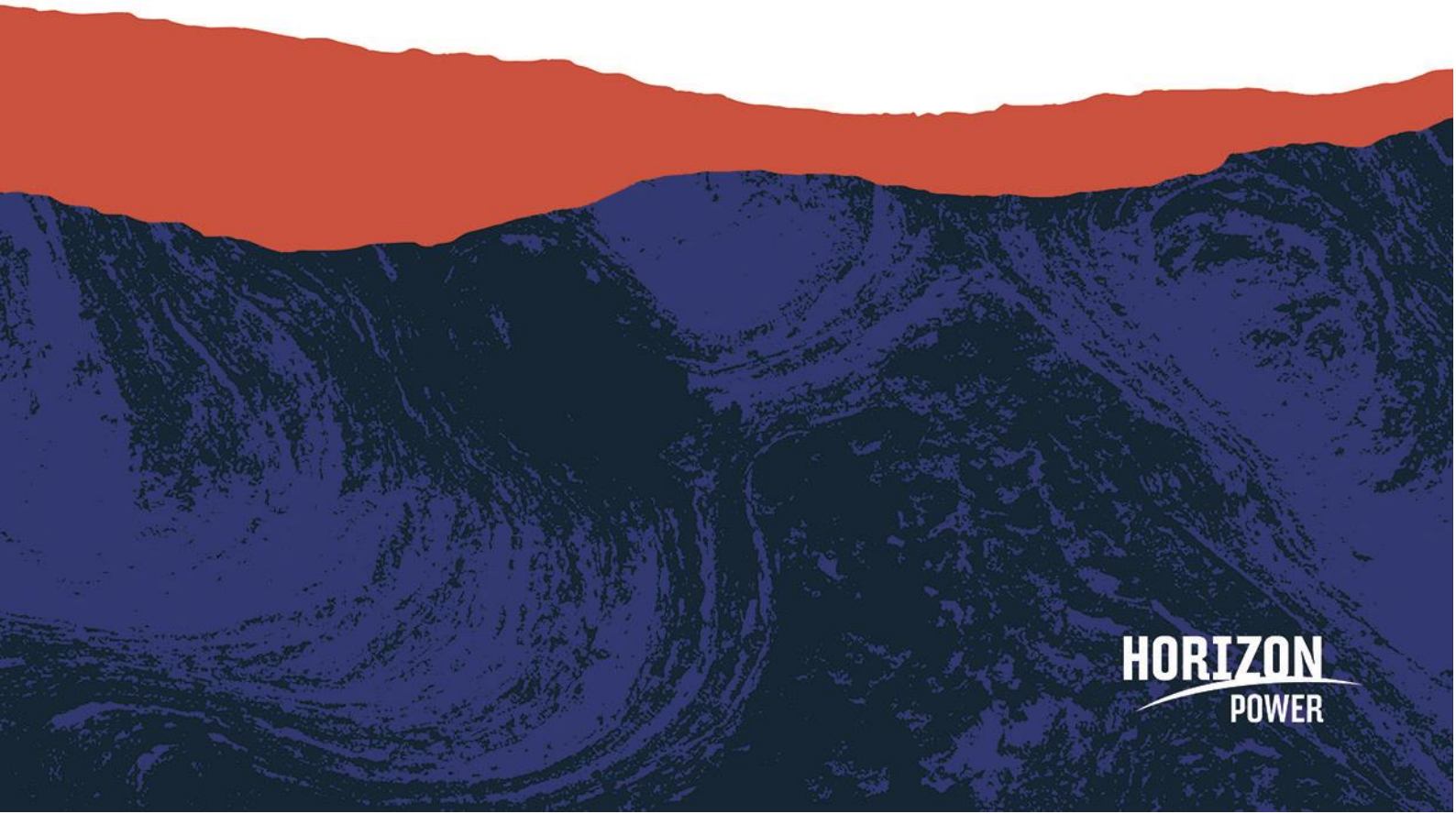
PROTECTED

East Pilbara Connection Project

Construction Environmental Management Plan

August 2024



Contents

1 Introduction

1.1 Project Context and Scope

Regional Power Corporation, trading as (T/A) Horizon Power, is a Western Australian (WA) Government Trading Enterprise (GTE) and the state's regional and remote energy provider. Horizon Power operates under the *Electricity Corporations Act 2005* and is governed by a Board of Directors accountable to the Minister for Energy.

Horizon Power is proposing to construct a 220 kV dual circuit common use transmission line connecting the South Hedland Terminal to the proposed Atlas Ridley Magnetite Mine, in the Pilbara region in Western Australia (the Project). The estimated length of the Transmission Line is 70.2 km comprising of mono poles, with an average height of 40 m. The Project is also likely to consist of access tracks along the pole route, geotechnical investigations and laydown areas for construction.

The Project involves the following permanent elements which will require up to 60.6 ha of permanent clearing:

– Approximately 70.2 km long 220 kV overhead transmission line
– Approximately 201 poles with a 20 x 20 m clearing footprint
– Permanent cleared access tracks (approximately 4 m wide).

The Project involves the following temporary elements which will require up to 40.2 ha of temporary clearing:

– Laydown area
– Geotechnical investigations
– Sites to facilitate stringing and winching of the transmission line.

1.2 Scope and purpose

This Construction Environmental Management Plan (CEMP) has been developed to outline environmental management measures to be implemented by Horizon Power and its contractors during the construction of the Project. This includes, but is not limited to, measures to manage dust, erosion and spread of weeds during clearing of native vegetation.

Figure 1 | **Project Location and Development Envelope**

N

0 2.5 5 10 Kilometers

Scale: 1:250,000

HORIZON POWER

2 Description of the Activity

2.1 Activity Overview

The project requires geotechnical survey works, which will consist of mainly incidental clearing (driving over and parking on native vegetation) for vehicle / machinery access to test sites. The Project also requires construction of the overhead transmission line including poles and permanent access tracks which will be used for maintenance.

2.2 Clearing of Native Vegetation

The proposed clearing will occur within the Development Envelope (Figure 1) which is 10,363 ha in size. No more than 100.8 ha of clearing is proposed, as shown in Table 1.

Clearing of native vegetation within the DE will only be undertaken as specified by the Clearing Permit, including the extent and method of clearing to be undertaken and any specific management measures outlined in the permit conditions.

Table 1 Clearing estimated within the DE

Proposed clearing	Clearing breakdown
100.8 ha	– Permanent clearing: 60.6 ha – Temporary clearing: 40.2 ha

3 Avoidance Measures

Initial avoidance and minimisation was undertaken during route selection and a large area was surveyed to allow for further refinement after the biological survey, to remove environmental constraints from the DE. The following avoidance measures have been applied:

- A 20 m avoidance buffer has been placed around Priority species recorded during the SLR (2024) survey, including:
  - *Gymnanthera cunninghamii*
  - *Tephrosia rosea* var. Port Hedland (A.S. George 1114).
- Avoidance areas have been placed around Stony Hills and Rocky Outcrops and Breakaways fauna habitat types. These will be avoided for all project activities.
- Avoidance areas have been placed around the Minor Drainage and Major Drainage habitat types. These will not be impacted by permanent clearing, there may be minor temporary impacts to this habitat type in the form of vehicles driving over these habitat types during stringing.
- Avoidance areas have been placed around the MaEc vegetation type, which is also associated with the major drainage fauna habitat type. There may still be minor temporary clearing in the form of vehicles driving over this vegetation type during stringing.

4 Management Measures

The management measures listed in Table 2 will be implemented during geotechnical investigations and construction of this Project. Clearing of native vegetation will occur as per the conditions in the NVCP issued by DWER.

Table 2 Management Measures to be Implemented During Geotechnical Investigations and Construction

Aspect	Management Measure
Geotechnical works	
Extent of Clearing	– No clearing is permitted outside the DE (Figure 1)

Aspect	Management Measure
	– Where possible, pre-existing access tracks will be used and vehicles and machinery will exit the DE along the same route used for access. – Avoidance areas will be clearly communicated prior to geotechnical investigations commencing and no more than 35.2 ha of clearing will be undertaken for geotechnical investigations. – Clearing will be minimised where possible through placement of geotechnical tests in existing cleared locations. – Mechanical clearing for the development of formal access tracks is not proposed during geotechnical works. – Works will be undertaken systematically to minimise re-run and compaction of access tracks. – The clearing locations are to be demarcated with flagging tape, GPS or similar prior to clearing activities. – A pre-clearing toolbox will be held so all staff are aware of their responsibilities under the permit and the application of the avoidance areas. – Clearing areas are to be checked by an Environmental Specialist or Site Supervisor prior to clearing to ensure avoidance areas are correctly applied.
Flora and vegetation	– Areas that are degraded, sparsely vegetated and/or previously cleared will be used preferentially for geotechnical tests, laydown and access. – Mechanically cleared areas will be restored, as follows: • Topsoil will be stockpiled separately to other excavated materials. • On completion of test pit works, excavated materials will be placed back into the test pits. Topsoil from the test pit will then be respread over the surface. • Recontouring of soil within the test pit and laydown areas will be undertaken to prevent compaction. – The clearing area allows for driving over vegetation to access geotechnical sites. Driving on vegetation will be kept to the minimum required to perform the works. – Movement of vehicles and machinery will be in convoy along access tracks/ routes and will not go into adjacent vegetation. – No permanent clearing in drainage lines is permitted, including permanent access tracks
Fauna	– Clearing of native vegetation will be undertaken in a slow, progressive manner in one direction to allow fauna to move away from the clearing area. – Construction personnel will not touch, feed or otherwise directly interact with fauna. – Vehicle and machinery speeds within the DE will be restricted to reduce the likelihood of fauna strike.
Weeds	– All vehicles and machinery will arrive clean on site. – Movement of vehicles and machinery will be restricted to the DE or established tracks and roads.
Soils and erosion	– Standard construction measures regarding erosion and sediment control will be implemented during clearing and geotechnical works. – Designated access tracks will be applied to prevent additional disturbance.
Dust	– Standard construction dust control and mitigation measures will be implemented during clearing. This may include the use of a water trucks, or similar. – Ground disturbance and clearing of vegetation will be restricted during high winds if dust cannot be adequately controlled. – Reduced vehicle speed limits will be applied in areas of unconsolidated soil. – Use of defined routes for machinery/ vehicles travelling on unsealed roads.
Noise	– The contractor will comply with the Environmental Protection (Noise) Regulations 1997 – Complaints regarding noise will be recorded and investigated by Horizon Power.
Waste	– Rubbish will be disposed of in appropriate containers and all waste will be removed from the site.

Aspect	Management Measure
Hydrocarbons and chemicals	– Hydrocarbons and chemicals will be appropriately managed on site to prevent spills, including maintaining equipment in good working order in accordance with manufacturers specifications. – No refuelling will be undertaken within 50 m of a waterway, drain or drainage line. – Hydrocarbons will be appropriately stored at least 50 m away from drainage lines and stored in an appropriate bunded container. – Refuelling will be undertaken on hardstand or using catch trays only. Uncontrolled refuelling is not permitted. – Chemicals will be appropriately stored.
Heritage	– Should aboriginal cultural heritage materials be uncovered during construction works, works are to stop immediately within 20 m of the find. The Contractor is to contact the Horizon Project Manager and an incident will be raised. The area will be cordoned off and no access permitted to the area by people until the incident is investigated and resolved.
Construction	
Extent of Clearing	– No clearing is permitted outside the DE (Figure 1) – Clearing will be minimised where possible through placement of assets and access tracks in existing cleared locations where possible. – The clearing locations are to be demarcated prior to clearing activities. – Clearing areas are to be checked by an Environmental Specialist or Site Supervisor prior to clearing to ensure no more than 100.8 ha of clearing is undertaken for the Project (including the 35.2 ha of clearing required for geotechnical investigations detailed above). – A pre-clearing toolbox will be held so all staff are aware of their responsibilities under the permit and application of avoidance areas. – Avoidance areas will be applied to prevent impacts to Priority flora and critical fauna habitat.
Flora and vegetation	– Areas that are degraded, sparsely vegetated and/or previously cleared will be used preferentially for laydown and access tracks. – Works will be undertaken systematically to minimise re-run and compaction of access tracks. – Any clearing required for temporary purposes, and not required for ongoing maintenance, will be rehabilitated upon completion of construction including re-laying of soil and recontouring to prevent compaction.
Fauna	– Clearing of native vegetation will be undertaken in a slow, progressive manner in one direction to allow fauna to move away from the clearing area. – Construction personnel will not touch, feed or otherwise directly interact with fauna. – Vehicle and machinery speeds within the DE will be restricted to reduce the likelihood of fauna strike.
Weeds	– The Contractor will ensure that no weed-affected soil, mulch, fill or other material is brought into the DE. – Vehicles and machinery will arrive clean, and weed control will be undertaken at the site post-construction as required. – Movement of vehicles and machinery will be restricted to the DE or established tracks and roads to prevent the spread of weeds.
Erosion and soils	– Standard construction measures regarding erosion and sediment control will be implemented during construction works. – Designated access tracks will be applied to prevent additional disturbance. – Acid sulphate soils will be managed in accordance with the ASSMP (if required pending geotechnical investigations, in accordance with the *Treatment and management of soils and water in acid sulfate soil landscapes* (DER, 2015b[1]).

[1] Department of Environment Regulation 2015b, Treatment and management of soils and water in acid sulfate soil landscapes, May 2015, Perth, Western Australia

Aspect	Management Measure
Dust	– Standard construction dust control and mitigation measures will be implemented during clearing. This may include the use of a water trucks, or similar. – Ground disturbance and clearing of vegetation will be restricted during high winds if dust cannot be adequately controlled. – Reduced vehicle speed limits will be applied in areas of unconsolidated soil.
Noise	– The contractor will comply with the Environmental Protection (Noise) Regulations 1997 – Complaints regarding noise will be recorded and investigated by Horizon Power.
Waste	– Rubbish will be disposed of in appropriate containers and all waste will be removed from the site.
Hydrocarbons and chemicals	– Hydrocarbons and chemicals will be appropriately managed on site to prevent spills, including maintaining equipment in good working order in accordance with manufacturers specifications. – No refuelling will be undertaken within 50 m of a waterway, drain or drainage line. – Hydrocarbons will be appropriately stored at least 50 m away from drainage lines and stored in an appropriate bunded container. – Refuelling will be undertaken on hardstand or using catch trays only. Uncontrolled refuelling is not permitted. – Chemicals will be appropriately stored.
Heritage	– Should aboriginal cultural heritage materials be uncovered during construction works, works are to stop immediately within 20 m of the find. The Contractor is to contact the Horizon Project Manager and an incident will be raised. The area will be cordoned off and no access permitted to the area by people until the incident is investigated and resolved.

Appendix C: Significant Fauna Likelihood of Occurrence Assessment

Table 8: Significant fauna likelihood of occurrence assessment for species that are known, likely or may occur within the Development Envelope

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
Northern Quoll (*Dasyurus hallucatus*)	Endangered under BC Act and EPBC Act	**Known to occur** The Northern Quoll favours dissected rocky escarpments, utilising a variety of den sites, including rocky crevices, tree hollows, log and termite mounds. It favours rocky areas, taking refuge in rock crevices and utilising gullies and drainage lines. This species was not recorded during the field survey (SLR, 2024). However, a recent survey that intersects the eastern section of the DE recorded the Northern Quoll (Biota, 2024). There are also abundant (1,282) previous records within the DE (DBCA, 2023), with most of the records within the Outcrops and Breakaways habitat type. Therefore, the Northern Quoll is known to occur within the DE.	1. **Outcrops and Breakaways**: This habitat may be used for denning and foraging and is considered habitat critical to the survival of the Northern Quoll as they are rocky areas that provide prime habitat for the species (Hill & Ward, 2010). Avoidance areas have been applied around this habitat type to mitigate impacts to the Northern Quoll. 2. **Stony Hills:** This habitat may be used for denning and foraging is considered habitat critical to the survival of the Northern Quoll as they are rocky areas that provide prime habitat for the species (Hill & Ward, 2010). Avoidance areas have been applied around this habitat type to mitigate impacts to the Northern Quoll. 3. **Major Drainage** and **Minor Drainage:** After significant rainfall events these habitats will provide valuable and water sources for this species. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types. 4. **Open Eucalypt Woodland, Low *Acacia stellaticeps* over *Triodia,* Mixed *Acacia* Shrubs and *Triodia* Plains and Sparse *Triodia* Plains**: This is suitable foraging and dispersal habitat for the Northern Quoll. Up to 100.8 ha may be cleared for the Project.
Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*) (Pilbara form)	Vulnerable under BC Act and EPBC Act	**Known to occur** The Pilbara Leaf-nosed Bat is restricted to areas with suitable day roosts, which are typically deep caves that retain humidity or disused underground mines (Cramer et al., 2016). The Pilbara Leaf-nosed Bat was recorded seven times within the Outcrops and Breakaways and Low *Acacia stellaticeps* over *Triodia* adjacent to the Outcrops and Breakaways habitat (SLR, 2024). Further, this species was recorded in a recent survey that intersects the eastern section of the DE (Biota, 2024). Therefore the Pilbara Leaf-nosed Bat is known to occur within the DE.	5. **Outcrops and Breakaways**: The caves in the Outcrops and Breakaways provide ideal roosting habitat for the Pilbara Leaf-nosed Bat and this habitat type is considered habitat critical to the survival of the species as the conservation advice (TSSC, 2016) defines transitory diurnal roosts as critical habitat. Avoidance areas have been applied around this habitat type to mitigate impacts to the Pilbara Leaf-nosed Bat. 6. **Major Drainage** and **Minor Drainage**: the Pilbara Leaf-nosed Bat may use these habitats for foraging and dispersal. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types.

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
			7. **Stony Hills**: the Pilbara Leaf-nosed Bat may use these habitats for foraging and dispersal. Potential foraging habitat surrounding known or suspected roost sites can be critical to the survival of the Pilbara Leaf-nosed Bat (TSSC, 2016). The Stony Hills habitat type was mapped as surrounding sites where the Pilbara Leaf-nosed Bat was recorded in the SLR (2024) survey. Therefore, this is considered critical habitat for the species. Avoidance areas have been applied around these habitat types to mitigate impacts to the Pilbara Leaf-nosed Bat. 8. **Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains** and **Open Eucalypt Woodland**: the Pilbara Leaf-nosed Bat may use these habitats for foraging and dispersal. Potential foraging habitat surrounding known or suspected roost sites can be critical to the survival of the Pilbara Leaf-nosed Bat (TSSC, 2016). Each of these habitat types were mapped as surrounding sites where the Pilbara Leaf-nosed Bat was recorded in the SLR (2024) survey. Therefore, they are considered critical habitat for the species. Up to 100.8 ha of this suitable foraging and dispersal habitat may be cleared for the Project.
Bilby (*Macrotis lagotis*)	Vulnerable under BC Act and EPBC Act	**Known to occur** The Bilby is described as occupying a wide range of vegetation types, including open tussock grasslands on upland hills. Mulga woodland/shrubland growing on ridges and rises and spinifex growing on sandplains and dunes, drainage systems, salt lake systems and other alluvial areas. Targeted Bilby searches were undertaken throughout the survey (SLR, 2024) in areas of suitable Bilby habitat with no Bilbies recorded. Further, a targeted assessment for the Bilby by GHD in 2022 (which intersects the DE) did not record the species. However, Bilby have been recorded within the western portion of the DE in previous studies (Phoenix, 2022). The species was previously recorded in the Low *Acacia stellaticeps* over *Triodia* and Sparse *Triodia* Plains habitats. Therefore, the Bilby is known to occur within the DE.	9. **Low *Acacia stellaticeps* over *Triodia*** and **Sparse *Triodia* Plains**: The Bilby has been previously recorded in these habitats and may use them for denning, foraging and dispersal. Critical habitat for the Bilby includes suitable habitats where the species is likely to occupy (DCCEEW, 2023b). Therefore, these habitats are critical habitat for the Bilby and up to 100.8 ha of may be cleared. 10. **Major Drainage, Minor Drainage, Mixed *Acacia* Shrubs and *Triodia* Plains** and **Open Eucalypt Woodland:** Based on habitat preferences for the Bilby as described in their recovery plan (DCCEEW, 2023b), they may occur within these habitat types, however were not recorded here during the SLR (2024) survey.
Western Pebble-mound Mouse (*Pseudomys chapmani*)	Priority 4 under DBCA list	**Known to occur** The Western Pebble-mound Mouse is endemic to the Pilbara and their mounds are usually found on gentle slopes and spurs that are often	11. **Stony Hills**: the Western Pebble-mound mouse was recorded three times within this habitat and it is highly likely that mounds are currently occupied (SLR, 2024). This habitat is considered suitable burrowing, refuge, and foraging habitat for the Western Pebble-mound Mouse and is therefore considered critical habitat. Avoidance areas have been

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
		vegetated by hard spinifex (Ford and Johnson, 2007; Van Dyck and Strahan, 2008). Western Pebble-mound Mouse mounds were recorded three times within the Stony Hills habitat, and twice within the Outcrops and Breakaways habitat (SLR, 2024). However, studies have shown that not all mounds in an area are occupied by a Pebble-mound Mouse at any one time (Anstee, 1996). Further, given the presence of an entrance hole and the lack of debris around the entrance, it is highly unlikely that the mounds are currently occupied (SLR, 2024). This species was recorded once within the Mixed *Acacia* Shrubs and *Triodia* Plains habitat, however, the record is 40 m away from the Outcrops and Breakaways habitat, therefore it is considered dispersal habitat for the species. The Low *Acacia stellaticeps* over *Triodia* habitat, Open Eucalypt Woodland and Sparse *Triodia* Plans are also considered dispersal habitat for the species. This species was also recorded during the Atlas Ridley Mine survey, adjacent to the DE (Biota, 2024). Therefore, the Western Pebble-mound Mouse is known to occur within the DE.	applied around this habitat type to mitigate impacts to the to the Western Pebble-mound Mouse. 12. **Outcrops and Breakaways**: the Western Pebble-mound mouse was recorded twice within this habitat and it is highly likely that mounds are currently occupied (SLR, 2024). This habitat is considered suitable burrowing, refuge, and foraging habitat for the Western Pebble-mound Mouse and is therefore considered critical habitat. Avoidance areas have been applied around this habitat type to mitigate impacts to the to the Western Pebble-mound Mouse. 13. **Mixed *Acacia* Shrubs and *Triodia* Plains, Low *Acacia stellaticeps* over *Triodia,* Open Eucalypt Woodland** and **Sparse *Triodia* Plains**: Based on habitat preferences, these habitats may be used as foraging and dispersal habitat by the Western Pebble-mound Mouse. Up to 100.8 ha of this suitable foraging and dispersal habitat may be cleared for the Project.
Grey Falcon (*Falco hypoleucos*)	Vulnerable under BC Act and EPBC Act	**Likely to occur** This species favours lightly timbered and untimbered lowland plains that are crossed with tree-lined watercourses, but also can be found in grassland and sand dune habitats. The DE has two Drainage habitats with eucalypt trees along the riverbanks, which constitutes suitable nesting habitat. The plains surrounding the Major Drainage and Minor Drainage habitats is likely to supporting habitat used for foraging. Therefore, the Grey Falcon is likely to occur within the DE.	14. **Major Drainage** and **Minor Drainage**: The eucalypt trees along the drainage habitats are suitable nesting habitat for the Grey Falcon. Breeding habitat is important to the survival of a species, however critical habitat has not been defined for the Grey Falcon. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types. 15. **Low *Acacia stellaticeps* over *Triodia,* Mixed *Acacia* Shrubs and *Triodia* Plains, Open Eucalypt Woodland** and **Sparse *Triodia* Plains**: Based on habitat preferences for the Grey Falcon, these habitat types surrounding the Major and Minor Drainage habitats are suitable foraging and dispersal habitats. Up to 100.8 ha of this suitable foraging and dispersal habitat may be cleared for the Project.
Oriental Pratincole (*Glareola maldivarum*)	Migratory under BC Act and EPBC Act	**Likely to occur** This species prefers plains, shallow wet and dry edges of open bare wetlands and tidal mudflats and beach habitat. This species does not breed in Australia.	16. **Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains, Major Drainage, Minor Drainage, Open Eucalypt Woodland** and **Sparse *Triodia* Plains**: These habitats are suitable foraging habitat for the Oriental Pratincole. Avoidance areas have been placed around the Major Drainage and Minor Drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
		The Oriental Pratincole was previously recorded within the DE in 2004 (DBCA, 2023) within the Low *Acacia stellaticeps* over *Triodia* habitat, which has the potential to become inundated during the wet season, providing suitable habitat used for foraging. Due to the species preference for open plains and seasonal wetland habitat, it is also considered that the Oriental Pratincole may use the Mixed *Acacia* Shrubs and *Triodia* Plains, Major Drainage, Minor Drainage, Open Eucalypt Woodland and Sparse *Triodia* Plains habitats within the DE. Therefore, the Oriental Pratincole is likely to occur within the DE.	driving over these drainage habitat types. Up to 100.8 ha of the remaining suitable foraging habitat may be cleared for the Project.
Common Greenshank (*Tringa nebularia*)	Endangered under EPBC Act Migratory under BC Act and EPBC Act	**Likely to occur** This species is found in coastal areas, riverbanks and coastal to freshwater wetlands. This species has been recorded frequently and recently within the desktop study (SLR, 2024) and likely occurs within the DE. The Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage and Minor Drainage habitats constitute supporting habitat for this species. This species is considered likely to occur within the DE and if present will occur between August and March. Therefore, the Common Greenshank is likely to occur within the DE.	17. **Low *Acacia stellaticeps* over *Triodia,* Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage** and **Minor Drainage**: These habitat types have the potential to inundated after significant rain events and are therefore suitable foraging habitats. Foraging habitat is defined as habitat critical to the survival of the species (DCCEEW, 2024e). Avoidance areas have been placed around the Major Drainage and Minor Drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these drainage habitat types. Up to 100.8 ha of the remaining critical habitat may be cleared for the Project.
Barn Swallow (*Hirundo rustica*)	Migratory under BC Act and EPBC Act	**Likely to occur** This species is typically observed in close proximity to urban water bodies and coastal wetlands. This species has been recorded frequently within the desktop study (SLR, 2024) and likely occurs within the DE. The Major and Minor Drainage habitats constitute supporting habitat for this species for their value as foraging, roosting and dispersal habitat. Additionally, the Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains and Sparse *Triodia* Plains have the potential to inundated after significant rain events and therefore may also be suitable habitat. This species is considered likely to occur and if present will occur between Spring and Summer.	18. **Low *Acacia stellaticeps* over *Triodia,* Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage** and **Minor Drainage**: These habitat types have the potential to inundated after significant rain events and are therefore suitable foraging, roosting and dispersal habitats. Habitat critical for the survival of the Barn Swallow has not been defined. Avoidance areas have been placed around the Major Drainage and Minor Drainage habitat types for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these drainage habitat types. Up to 100.8 ha of the remaining potential foraging, roosting and dispersal habitats may be cleared for the Project.
Little Curlew (*Numenius minutus*)	Migratory under BC Act and EPBC Act	**Likely to occur** This species forages within short, dry grassland and sedgeland, including dry floodplains and blacksoil plains, which have scattered, shallow	19. **Low *Acacia stellaticeps* over *Triodia,* Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage, Minor Drainage** and **Open Eucalypt Woodland:** These habitats are suitable foraging habitat

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
		freshwater pools or areas seasonally inundated. Open woodlands with grassy or burnt understorey, dry saltmarshes, coastal swamps, mudflats or sandflats of estuaries or beaches on sheltered coasts, mown lawns, gardens, recreational areas, ovals, racecourses and verges of roads, and airstrips are also used. This species has been recorded frequently and recently within the desktop study area (SLR, 2024). The Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage, Minor Drainage and Open Eucalypt Woodland habitats constitute supporting habitat for the species. If present, the species will occur in the DE between October and April. Therefore, the Little Curlew is likely to occur within the DE.	for the Little Curlew. Habitat critical for the survival of the Little Curlew has not been defined. Avoidance areas have been placed around the Major Drainage and Minor Drainage habitat types for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these drainage habitat types. Up to 100.8 ha of the remaining suitable foraging habitat may be cleared for the Project.
Oriental Plover (*Charadrius veredus*)	Migratory under BC Act and EPBC Act	**Likely to occur** This species typically prefers grasslands and thinly vegetated plains, and open areas such as recently burnt country and heavily grazed pastures. This species has been recorded recently within the desktop study area (SLR, 2024). The Low *Acacia stellaticeps* over *Triodia*, Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage and Minor Drainage constitute supporting habitat for the species as they may become inundated after significant rain events. This species is considered likely to occur during potential flooding events, and if present, will occur within the DE between mid-September and April. Therefore, the Oriental Plover is likely to occur within the DE.	20. **Low *Acacia stellaticeps* over *Triodia,* Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage** and **Minor Drainage**: These habitat types have the potential to inundated after significant rain events and are therefore suitable foraging habitat. Habitat critical for the survival of the Oriental Plover has not been defined. Avoidance areas have been placed around the Major Drainage and Minor Drainage habitat types for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these drainage habitat types. Up to 100.8 ha of the remaining suitable foraging habitat may be cleared for the Project.
Osprey (*Pandion haliaetus*)	Migratory under BC Act and EPBC Act	**Likely to occur** This species requires extensive areas of open fresh, brackish or saline water for foraging. They are mostly found in coastal areas but occasionally travel inland along major rivers. They frequent a variety of wetland habitats including inshore waters, reefs, bays, coastal cliffs, beaches, estuaries, mangrove swamps, broad rivers, reservoirs and large lakes and waterholes. This species has been recorded recently within the desktop study area (SLR, 2024). The Major and Minor Drainage habitats constitute critical habitat for the Osprey because of their value for hunting and dispersal. Therefore, the Osprey is likely to occur within the DE during flooding events.	21. **Major Drainage** and **Minor Drainage**: SLR (2024) defined these habitats as critical to the survival of the Osprey due to their value for hunting and dispersal. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types.

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
Peregrine Falcon (*Falco peregrinus*)	Other specially protected under DBCA list	**Likely to occur** This species mainly occurs along rivers and ranges as well as wooded watercourses and lakes. It nests primarily on cliffs and granite outcrops and quarries. This species was not observed during the field survey (SLR, 2024), however has been previously recorded twice within 3 km of the DE in recent years (DBCA, 2023). The trees in the Open Eucalypt Woodland, Major Drainage and Minor Drainage habitats within the DE and surrounds may provide suitable habitat used for nesting and hunting. Therefore, the Peregrine Falcon is likely to occur within the DE.	**22. Open Eucalypt Woodland, Major Drainage** and **Minor Drainage:** These are suitable nesting, dispersal and foraging habitat for the Peregrine Falcon. Critical habitat for the Peregrine Falcon has not been defined, however breeding habitat is considered important. Avoidance areas have been placed around the Major Drainage and Minor Drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these drainage habitat types. Up to 100.8 ha of the remaining suitable foraging, dispersal and nesting habitat may be cleared for the Project.
Ghost Bat (*Macroderma gigas*)	Vulnerable under BC Act and EPBC Act	**Likely to occur** This species requires undisturbed roost caves or mineshafts. There are suitable roosting caves for Ghost Bats in the vicinity of the DE. The species was not recorded during the field survey of the DE (SLR, 2024), however was recorded during the Biota (2024) survey outside of the transmission line DE. The Ghost Bat may utilise suitable rock fissures and boulder piles within the DE. The Major and Minor Drainage habitats also constitute moderate value habitat as they may be used as foraging and dispersal habitat. Therefore, the Ghost Bat is likely to occur within the DE.	23. **Outcrops and Breakaways:** Habitat critical to the survival of the Ghost Bat isn't defined, however, Biota (2024) defined the rocky hills habitat within their survey area (which intersects the DE) as potential critical habitat for the Ghost Bat (Biota, 2024). This habitat is considered similar to the Outcrops and Breakaways habitat and is therefore considered critical habitat as well. Avoidance areas have been applied around this habitat type to mitigate impacts to the Ghost Bat. 24. **Major Drainage** and **Minor Drainage:** the Ghost Bat may use these habitats for foraging and dispersal. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types.
Brush-tailed Mulgara (*Dasycercus blythi*)	Priority 4 under DBCA list	**Likely to occur** The Brush-tailed Mulgara is associated with hummock spinifex grasslands, but also uses other vegetation types (often sandplains, grasslands and woodlands) when mixed with or adjacent to hummock grasslands. This species was previously recorded within the DE (Biota, 2024; Phoenix, 2022). The Low *Acacia stellaticeps* over *Triodia* habitat and the Mixed *Acacia* Shrubs and *Triodia* habitat would support this species. Approximately 83% of the DE consists of these two habitat types, which indicates the species may be able to persist throughout the majority of the DE. Therefore, the Brush-tailed Mulgara is likely to occur within the DE.	25. **Low *Acacia stellaticeps* over *Triodia*** and **Mixed *Acacia* Shrubs and *Triodia* Plains**: The Brush-tailed Mulgara may use these habitat types for burrowing, foraging and dispersal. The species was not recorded in the DE and habitat critical to the survival of the species has not been defined. Therefore up to 100.8 ha of supporting habitat in the form of burrowing, foraging and dispersal habitat may be cleared for the Project.

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
Pilbara Olive Python (*Liasis olivacea barroni*)	Vulnerable under BC Act and EPBC Act	**Likely to occur** This species generally shelters under rock piles, or under spinifex and often basks on stop of rocks. This species is known to frequent water bodies. The Pilbara Olive Python has been previously recorded within the DE, however preferred habitat is not within the DE. If present, the species likely utilises the Minor and Major drainage habitats and the Outcrops and Breakaways habitat within the DE as supporting habitat. Therefore, the Pilbara Olive Python is likely to occur within the DE.	26. **Outcrops and Breakaway**: The Pilbara Olive Python may use this habitat for dispersal. Critical habitat is not defined for this species (DEWHA, 2008). However, Biota (2024) defined the rocky hills habitat they recorded within the Atlas Iron survey area as potential critical habitat for the species. The Outcrops and Breakaway habitat is similar and therefore potentially critical habitat for the species. Avoidance areas have been applied around this habitat type to mitigate impacts to the Pilbara Olive Python. 27. **Major Drainage and Minor Drainage**: The Pilbara Olive Python may use this habitat for foraging. Avoidance areas have been placed around these drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these habitat types.
Pilbara Grasswren (*Amytornus whitei whitei*)	Priority 4 under DBCA List	**May occur** This species is restricted to spinifex associations on rocky slopes and ridges, with or without shrubs or light tree cover, preferring areas with tall dense spinifex hummocks. This species has been recorded within the desktop study area (SLR, 2024). The Sparse *Triodia* Plains and Stony Hills habitats constitute critical habitat for this species due to their value for foraging and shelter. Therefore, the Pilbara Grasswren may occur within the DE.	28. **Sparse *Triodia* Plains** and **Stony Hills**: the Pilbara Grasswren may use these habitats for foraging and shelter. Critical habitat for this species has not been defined however SLR defined these habitats as critical habitat because of their value for foraging and shelter (SLR, 2024). Avoidance areas have been applied around the Stony Hills habitat type. However, up to 100.8 ha of critical habitat in the form of Sparse *Triodia* Plains may be cleared as a result of the Project.
Glossy Ibis (*Plegadis falcinellus*)	Migratory under BC Act and EPBC Act	**May occur** The preferred foraging and breeding habitat of this species includes freshwater marshes at the edges of lakes and rivers, lagoons, floodplains, wet meadows, swamps, reservoirs, sewage pongs, rice-fields and cultivated areas under irrigation. This species builds a platform nest of sticks in trees or shrubs above water. This species was recorded within the desktop study areas (SLR, 2024) and may occur within the DE. There are several habitats which may flood and provide suitable habitat for the species. Additionally dry grassland habitat is suitable for this species. Therefore, the Glossy Ibis may occur within the DE on a sporadic basis during flooding events.	29. **Low *Acacia stellaticeps* over *Triodia,* Mixed *Acacia* Shrubs and *Triodia* Plains, Sparse *Triodia* Plains, Major Drainage** and **Minor Drainage**: These habitat types have the potential to inundated after significant rain events and are therefore suitable foraging and breeding habitats. There is no critical habitat defined for this species. Avoidance areas have been placed around the Major Drainage and Minor Drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these drainage habitat types. Up to 100.8 ha of the remaining potential foraging and breeding habitat may be cleared for the Project.

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
Fork-tailed Swift (*Apus pacificus*)	Migratory under BC Act and EPBC Act	**May occur** This species is almost exclusively aerial over varied habitats, ranging from rainforests to semi-deserts. This species has been recorded within the desktop study area (SLR, 2024). All habitats within the DE may potentially be utilised as supporting habitat for foraging and dispersal. Therefore, the Fork-tailed Swift may occur within the DE.	**30. Closed *Acacia* Shrubland, Low *Acacia stellaticeps* over *Triodia*, Major Drainage, Minor Drainage, Mixed *Acacia* Shrubs and *Triodia* Plains, Open Eucalypt Woodland, Outcrops and Breakaways, Sparse *Triodia* Plains** and **Stony Hills:** All habitats within the DE may be used as foraging and dispersal habitat for the Fork-tailed Swift. There is no critical habitat defined for this species. **31.** Avoidance areas have been applied around the Outcrops and Breakaways and Stony Hills habitat types. **32.** Avoidance areas have been placed around the Major Drainage and Minor Drainage habitats for permanent clearing. There may still be temporary clearing in the form of vehicles driving over these drainage habitat types. **33.** Up to 100.8 ha of the remaining potential foraging and dispersal habitat may be cleared for the Project.
Short-tailed Mouse (*Leggadina lakedownensis*)	Priority 4 under DBCA List	**May occur** This species uses spinifex and *Acacia* on seasonally inundated sandy-clay soils as well as sandy soils and cracking clays to build burrows which they shelter during the day. In the Pilbara, it occurs on stony hummock grassland. This species was recorded within the desktop study area (SLR, 2024). The Sparse *Triodia* Plains and Stony Hills habitat constitute critical habitat for the species because of their value for foraging and shelter. Therefore, the Short-tailed Mouse may occur within the DE.	34. **Sparse *Triodia* Plains** and **Stony Hills**: SLR (2024) defined these habitats as critical habitat for the Short-tailed Mouse because of their value for foraging and shelter. Avoidance areas have been applied around the Stony Hills habitat type. However up to 100.8 ha of the remaining potential foraging and shelter habitat may be cleared for the Project.
Curlew Sandpiper (*Calidris ferruginea*)	Critically Endangered under the BC Act and EPBC Act Migratory under EPBC Act	**May occur** There are records of these species in proximity to the DE, however there are limited suitable habitats for the species within the DE. There are suitable tidal flats < 10 km north of the DE, and there are drainage habitats that connect these flats to the DE. Therefore, there is an opportunity for these species to occur within the DE in the Major Drainage and Minor Drainage habitats after significant rain events that would flood these habitats.	**35. Major Drainage** and **Minor Drainage**: The bird species may use this habitat for foraging and dispersal after flooding events. This is considered critical habitat for the Curlew Sandpiper, Great Knot, Red Knot, Sharp-tailed Sandpiper and Black-tailed Godwit as any foraging habitat is considered critical habitat for these species (DCCEEW, 2023; DCCEEW, 2024a, DCCEEW, 2024b; DCCEEW, 2024c; DCCEEW, 2024d). Avoidance areas have been placed around the Major Drainage and Minor Drainage habitats for permanent clearing. There may still be
Great Knot (*Calidris tenuirostris*)	Critically Endangered under the BC Act		

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
	Vulnerable and Migratory under EPBC Act	These habitats would likely be used as foraging and dispersal habitat only, and do not constitute important habitat for any of the species. Therefore, these species may occur within the DE.	temporary clearing in the form of vehicles driving over these drainage habitat types.
Red Knot (*Calidris canutus*)	Endangered under the BC Act Vulnerable and Migratory under the EPBC Act		
Grey-tailed Tattler (*Tringa brevipes*)	Priority 4 listed by DBCA Migratory under BC Act and EPBC Act		
White-winged Black Tern *(Chlidonias leucopterus)*	Migratory under BC Act and EPBC Act		
Gull-billed Tern (*Gelochelidon nilotica*)	Migratory under BC Act and EPBC Act		
Caspian Tern (*Hydroprogne caspia*)	Migratory under BC Act and EPBC Act		
Common Tern (*Sterna hirundo*)	Migratory under BC Act and EPBC Act		
Common Sandpiper *(Actitis hypoleucos)*	Migratory under BC Act and EPBC Act		
Sharp-tailed Sandpiper (*Calidris acuminata*)	Vulnerable under EPBC Act		

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
	Migratory under BC Act and EPBC Act		
Sanderling (*Calidris alba*)	Migratory under BC Act and EPBC Act		
Broad-billed Sandpiper (*Calidris falcinellus*)	Migratory under BC Act and EPBC Act		
Pectoral Sandpiper (*Calidris melanotos*)	Migratory under BC Act and EPBC Act		
Ruff (*Calidris pugnax*)	Migratory under BC Act and EPBC Act		
Red-necked Stint (*Calidris ruficollis*)	Migratory under BC Act and EPBC Act		
Long-toed Stint (*Calidris subminuta*)	Migratory under BC Act and EPBC Act		
Pin-tailed Snipe (*Gallinago stenura*)	Migratory under BC Act and EPBC Act		
Bar-tailed Godwit (*Limosa lapponica*)	Migratory under BC Act and EPBC Act		
Black-tailed Godwit (*Limosa limosa*)	Migratory under BC Act and EPBC Act		

Fauna Species	Status	Likelihood of occurrence	Suitable habitat within the DE
	Endangered under EPBC Act		
Whimbrel (*Numenius phaeopus*)	Migratory under BC Act and EPBC Act		
Red-necked Phalarope (*Phalaropus lobatus*)	Migratory under BC Act and EPBC Act		
Wood Sandpiper (*Tringa glareola*)	Migratory under BC Act and EPBC Act		
Marsh Sandpiper (*Tringa stagnatilis*)	Migratory under BC Act and EPBC Act		

Appendix D: Significant Flora Likelihood of Occurrence Assessment

Table 9: Significant flora likelihood of occurrence assessment for species that are known, likely or may occur within the Development Envelope

Flora Species	Status	Likelihood of occurrence
Tephrosia rosea var. Port Hedland (A.S. George 1114)	Priority 1 under DBCA list	**Known to occur** Two individuals of *Tephrosia rosea* subsp. Port Hedland were recorded opportunistically from one location in the AsTe vegetation type.
Gymnanthera cunninghamii	Priority 3 under DBCA list	**Known to occur** Six individuals of *Gymnanthera cunninghamii* across four locations were opportunistically recorded in the MaEc vegetation type.
Eragrostis crateriformis	Priority 3 under DBCA list	**Likely to occur** There are records of this species nearby to the DE, with the closest record being 0.15 km away. This species' preferred habitat is clayey loam or clay, creek banks and depressions (SLR, 2024).
Euploca mutica	Priority 3 under DBCA list	**Likely to occur** There are records of this species nearby to the DE, with the closest record being 0.08 km away. This species' preferred habitat is flat sand plains (SLR, 2024).
Euploca parviantrum	Priority 1 under DBCA list	**May occur** There are records of this species nearby to the DE, with the closest record being 6.87 km away. This species' preferred habitat is sandy soils, flats, plains and rocky slopes (SLR, 2024).
Euphorbia inappendiculata var. *inappendiculata*	Priority 2 under DBCA list	**May occur** There are records of this species nearby to the DE, with the closest record being 60.93 km away. This species' preferred habitat is red, brown clay or loam and plains (SLR, 2024).
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	Priority 3 under DBCA list	**May occur** There are records of this species nearby to the DE, with the closest record being 3.03 km away. This species' preferred habitat is sandy plains (SLR, 2024).
Euphorbia clementii	Priority 3 under DBCA list	**May occur** There are records of this species nearby to the DE, with the closest record being 6.19 km away. This species' preferred habitat is gravelly hillsides and stony grounds (SLR, 2024).
Rothia indica subsp. *australis*	Priority 3 under DBCA list	**May occur**

Flora Species	Status	Likelihood of occurrence
		This species has previously been recorded within the DE. This species' preferred habitat is sandy soils, sandhills and sandy flats (SLR, 2024).
Bulbostylis burbidgeae	Priority 4 under DBCA list	**May occur** There are records of this species nearby to the DE, with the closest record being 5.85 km away. This species' preferred habitat is granitic soils, granite outcrops and cliff bases (SLR, 2024).