

Native Vegetation Clearing Permit

Native Vegetation Clearing Permit – Supporting Document

Turner River Solar Hub

7 November 2025 100-AE-EN-0018

Rev: 0



EXECUTIVE SUMMARY

Pilbara Energy (Generation) Pty Ltd (PEG), a wholly owned subsidiary of Fortescue Ltd (Fortescue), is proposing to develop the Turner River Solar Hub (TRSH) (the Project), comprising renewable energy and supporting infrastructure in the Pilbara region of Western Australia. The solar farm will export electricity via connection to Fortescue's Pilbara Energy Connect network, enabling energy supply across Fortescue's operations in the Pilbara. The development of the Project will be assessed by the submission of a Mine Development Closure Plan (MDCP) to Department of Mines Petroleum and Exploration (DMPE).

The Project's Indicative Disturbance Footprint (IDF) is 1,108.2 ha and PEG is proposing to clear up to 1,089.9 ha of native vegetation within a Purpose Permit Application Area (PPAA) of 1,416.5 ha. The PPAA is separated into a Southern and Northern PPAA (Post Text Figure 1).

The Project was referred to the Environmental Protection Authority (EPA) under the *Environmental Protection Act 1986* (EP Act) 05 May 2025 and a decision to not assess was made under section 38G(1) on the 23 May 2025. The Project was also referred to Department of Climate Change, Energy, the Environment and Water (DCCEEW) under section 18 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and was determined to be a Controlled Action on 7 July 2025 for impacts to two protected matters (threatened species and communities); *Dasyurus hallucatus* (Northern Quoll) and *Macrotis lagotis* (Greater Bilby). DCCEEW assessment and approval of the Project under the *EPBC Act* is currently pending.

Detailed surveys were undertaken to assess the impact of the Project on environmental receptors. A summary of the main baseline environmental assessments concluded the following:

Three vegetation types of conservation significance were recorded in the PPAA.

- ChAaTc, supports large numbers of *Triodia chichesterensis* (P3) as the dominant spinifex hummock grass and refuge for conservation significant species.
- ChAaTs, considered locally significant due to a restricted distribution within the survey area however was not dominated by any species that are considered uncommon or restricted and was considered well represented outside of the Survey Area.
- ChAspTe, considered be locally significant due to occasional populations of *Neptunia longipila* (P2) on ecotonal clay boundaries however, the main habitat for this flora species is vegetation type AsyAISf which occurs outside of the PPAA.

No Threatened Ecological Communities (TECs), Priority Ecological Communities (PECs), Groundwater Dependent Ecosystems (GDE's), or Threatened flora species listed under the EPBC Act or *Biodiversity Conservation Act 2016* (WA) (BC Act) were recorded within the PPAA.



Three Department of Biodiversity Conservation and Attractions (DBCA) Priority flora species were identified; *Goodenia obscurata* (P3), *Euploca mutica* (P3), and *Triodia chichesterensis* (P3) within the PPAA. The latter two species are within the IDF with up to 4,345,600 individual *Triodia chichesterensis* and 502 *Euploca mutica* individuals directly impacted by Project activities. However, both species are well represented outside the PPAA.

Two conservation significant fauna species (Greater Bilby and Pilbara Leaf-Nosed Bat) were recorded, and a further thirteen species had a medium to high likelihood of occurrence within the PPAA. The Project is not likely to significantly impact the habitat of these species as less than 2% of the mapped Survey Extent of critical and/or supporting fauna habitat is within the IDF. The exception is Plain (sand) habitat, which is critical habitat for Greater Bilby, with up to 16.8% of this habitat within the IDF. However, the Plain (sand) habitat is widely distributed in the broader Pilbara bioregion and continues into the surrounding Abydos Plain (Spectrum, 2025b). The Greater Bilby is also highly mobile and forages over vast areas, so it is likely the species will disperse into areas of suitable habitat that is widespread within the local area (Spectrum, 2025b).

Nonetheless, to mitigate potential adverse impacts to Greater Bilby, Northern Quoll and other conservation significant fauna, approximately 228.4 ha within the PPAA has been designated as 'Avoidance Areas' (Post Text Figure 12) where no development will occur. Additionally, adjacent to the PPAA, an indicative Fauna Management Area (Post Text Figure 13) over a resident Northern Quoll and Greater Bilby population in close proximity (<1 km) to the PPAA, has been proposed during the EPBC referral process. The Fauna Management Area is intended to be where outcome-based management actions (e.g., weed, introduced predator and fire control) will be implemented to protect and conserve the resident Greater Bilby and Northern Quoll populations.

An assessment against the Ten Clearing Principles (detailed in Section 3) concludes that the proposed clearing is not likely to be at variance with any one of the Ten Clearing Principles.

Potential direct and indirect impacts to environmental receptors will be managed by the implementation of Environmental Management Measures (refer to Section 4) and the rehabilitation of the Project area in accordance with the MDCP (refer to Section 5).



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1 INTRODUCTION

This report has been prepared to support an application for a Native Vegetation Clearing Permit (NVCP), as required by the *EP Act* and Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (WA), for the Project described in Table 1-1. This NVCP is intended to be the legal instrument for clearing authorisation for the Project MDCP, to be submitted to DMPE for assessment.

The total proposed clearing to be assessed under this NVCP is detailed in Section 1.2. This report describes baseline environmental data (refer Section 2) to provide a context within which to assess the impacts of the proposed clearing activities against the Ten Land Clearing Principles described within Schedule 5 of the *EP Act* (refer Section 3). Environment management measures to mitigate potential impact and indirect impacts to environmental receptors as a result of the proposed clearing are detailed (refer Section 4) along with planned rehabilitation measures in accordance with an MDCP (refer Section 5).

The Project was referred to the EPA under the *EP Act* 05 May 2025 and a decision to not assess was made under s.38G(1) on the 23 May 2025. The Project was also referred to DCCEEW under section 18 of the *EPBC Act* and was determined to be a Controlled Action on 7 July 2025 for impacts to two protected matters (threatened species and communities); *Dasyurus hallucatus* (Northern Quoll) and *Macrotis lagotis* (Greater Bilby). DCCEEW assessment and approval of the Project is currently pending.

1.1 Summary of the Project

The Turner River Solar Hub (the Project) is 100% owned by Pilbara Energy (Generation) Pty Ltd (PEG) (ACN 631 303 305), a wholly-owned subsidiary of Fortescue.

The key details of the Project are presented in Table 1-1.

Table 1-1: Project Details

Site Details	
Project Name	Turner River Solar Hub (formerly known as North Star Junction West and Wodgina Projects)
Description of Operation	The Project is located approximately 120 km south of Port Hedland in the Pilbara region of Western Australia. It is strategically located approximately 25 km west of Fortescue's existing North Star Magnetite Project. This Project aims to support Fortescue's commitment to achieving zero net emissions by 2030. The Project will comprise the following renewable energy infrastructure: • Solar array



- Transmission lines
- Substation
- Battery Electric Storage System (BESS)
- Switch rooms.

Other mining activities to support the Project include:

- Control room including office, spares storage, workshop, amenity and ablution facilities.
- · Laydown areas.
- Access tracks.
- · Topsoil stockpiles.

During construction, temporary infrastructure will be located within the proposed project footprint:

- Construction compounds.
- Mobile fuel storage and diesel fired electricity generators.
- Workshop.
- · Laydowns.
- Temporary concrete batching

The Project will be developed on Miscellaneous Licence tenure held by various entities that are subsidiaries of Fortescue Ltd, to facilitate the construction of renewable energy generation facilities and supporting infrastructure.

The Project will be developed in accordance with the associated Turner River Solar Hub Mining Development Closure Plan (MDCP), to be submitted to DMPE for assessment.

Total Clearing Proposed

1,089.9 ha of native vegetation (within a PPAA of 1,416.5 ha).

Estimated Project Commencement Date

Construction: 2026 (subject to approvals)

Tenement Details

Tenement	Tenement Holder	Status
L4500293	FMG Magnetite Pty Ltd	Live
L4500462	Pilbara Energy Company Pty Ltd	Live
L4500692	Pilbara Energy (Generation) Pty Ltd	Live
L4500693	Pilbara Energy (Generation) Pty Ltd	Live
L4500694	Pilbara Energy (Generation) Pty Ltd	Live
L4500838	Pilbara Energy (Generation) Pty Ltd	Pending



Clearing Method	Vegetation clearing will be undertaken in the form of mechanical clearing.				
Timeframe for clearing	2026 –2031 Native vegetation will be progressively cleared as accordance with the associated Turner River Sola for assessment.				
Purpose of Clearing	The clearing is required for the construction, insta Solar Hub Project (to be submitted to DMPE for a				
Proponent Details	3				
Company Name	Pilbara Energy (Generation) Pty Ltd				
ACN/ABN	ACN: 631 303 305 ABN: 31 631 303 305				
Address	Ground Floor, 256 St Georges Terrace, Perth, W.	A 6000			
Postal Address	PO Box 6915 East Perth, Western Australia				
Key Contact	Name	Zéna Harman			
	Position Senior Manager, Sustaining Environmental Approvals				
	Phone 08 6218 8888				
	Email	miningapprovals@fortescue.com			

1.2 Proposed Clearing Activities

PEG is applying to clear 1,089.9 ha of native vegetation within an IDF of 1,108.2 ha (Post Text Figure 1) to facilitate the construction and operation of the Project. Approximately 18.3 ha of the IDF is classified as already cleared. The proposed disturbance is located within a PPAA of 1,416.5 ha. The disturbance estimates of native vegetation across each tenement for the Project have been detailed within Table 1-2.

Table 1-2: Tenement Activity

Disturbance Activity	Total Area (ha)	Total Native Vegetation (ha)
L45/293	0.6	0.4
L45/462	0.3	0.1
L45/692	769.0	760.2
L45/693	30.0	20.9
L45/694	298.0	298.0
L45/838	10.3	10.3
Total	1,108.2	1,089.9

1.3 Mitigation Hierarchy

Considerable design efforts have been expended to ensure the Project will have minimal impact on the environment. The Project has implemented the following avoidance and



mitigation measures to eliminate, reduce or otherwise mitigate the need for and scale of the proposed clearing of native vegetation:

- The Project has been significantly reduced in size and designed to avoid sensitive environmental receptors such as conservation significant fauna habitat, PECs, TECs, waterways/drainage lines, and heritage sites.
- Avoidance Areas within the PPAA have been proposed where no development will occur.
- An Indicative Fauna Management Area adjacent to the PPAA has been proposed for the implementation of management actions to protect and conserve resident conservation significant fauna (Greater Bilby and Northern Quoll).
- Design optimisation has been implemented by utilising existing cleared areas wherever practicable and clearing of two large areas (rather than several small areas) to limit edge effects.
- Areas cleared that are not operationally required following construction will be progressively rehabilitated in accordance with the associated Turner River Solar Hub MDCP.

2 BASELINE ENVIRONMENTAL DATA

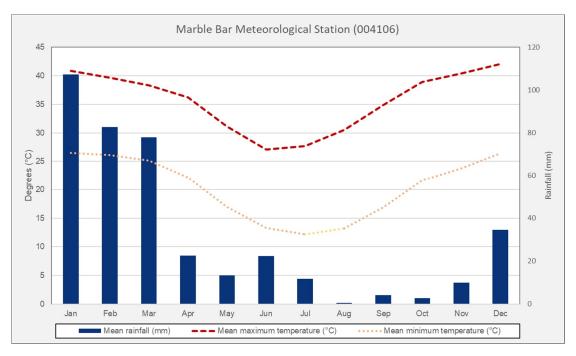
Baseline environmental data for the Project is presented in this section. The baseline data used for this report is based on available historical survey information and the most recent surveys and assessments that have been undertaken.

The flora and fauna surveys used to support this application were undertaken over a broad area within and surrounding the PPAA providing a robust data set to evaluate potential impacts.

2.1 Climate

The Pilbara Region of Western Australia experiences an arid climate, which receives approximately 300 mm of rainfall annually (McKenzie, May, & McKenna, 2003). The weather station at Marble Bar (Site 004106) shows a long-term annual rainfall of 386 mm, with rain experienced predominately in January, February and March. Annual mean temperatures within the region range from 12.1°C in winter to 42.1°C in summer (BoM, 2024) (Graph 2-1).





Graph 2-1: Marble Bar (Site No. 004106) Climate Data

Assessment of terrain and seasonal and diurnal wind roses (ETA, 2024) determined that annual windspeed across most of the PPAA is 7-11 km/hr, increasing to 11-14 km/hr at the southern end of the northern PPAA. Wind speeds tend to be higher during the day and reduce overnight. Annually, most winds are south-easterly, with the following seasonal patterns:

- Autumn and winter: predominantly slower, south-easterly winds with a wind arc of 75 to 175 degrees.
- Spring and summer: mixture of north-westerly and south-easterly winds, but more frequently from the north-west with a wind arc of 290 to 340 degrees.

2.2 Landscape

2.2.1 Biogeography

The Project is located in the Pilbara biogeographic region of the Interim Biogeographic Regionalisation for Australia (IBRA) (Thackway & Cresswel, 1995). The IBRA bioregions are defined on the basis of geology, landform, vegetation, fauna and climate. These bioregions are subdivided into 403 sub-regions. The Pilbara bioregion includes four major subregions; Chichester, Fortescue Plain, Hamersley and Roebourne.

The Project is in the Chichester IBRA subregion (Post Text Figure 2). The Chichester subregion is within the northern section of the Pilbara Craton and consists of undulating Archean granite and basalt plains with areas of significant basalt ranges. The plains support a shrub steppe with *Acacia inaequilatera* over *Triodia* species hummock grasslands, with *Eucalyptus leucophloia* tree steppe occurring on ranges (Kendrick and McKenzie, 2001).



2.2.2 Landform

A soil and landform assessment of the PPAA and surrounding area was undertaken to characterise the landscape and potential adverse impacts to soil and landscape values that may occur from Project activities (Landloch, 2024) (Appendix 1). Desktop mapping identified three land systems that intersect the PPAA, as described in Table 2-1.

Table 2-1: Landforms Systems Intersecting the PPAA (DPIRD, 2022)

Land System	Description	Area in PPAA (ha)
Boolaloo	Granite hills and sandy plains, with soils such as stony soils, red shallow loams, and red deep sands.	11.8
Macroy	Erosional terrains with gently rolling stony plains and sandy-surfaced areas. This results in a variety of soils, including red shallow sands and loams, red sandy earths, and red shallow sandy duplex soils.	1,121.0
Uaroo	A depositional environment with sandy plains and limited drainage, characterised by red sandy earths, red deep sands, and red loamy earths.	283.8
Total:	•	1,416.5

Within these land systems, Landloch (2024) identified and mapped seven landform elements as described in **Error! Reference source not found.**) and shown in Post Text Figure 3. Each of these landforms, excluding 'Disturbed' areas was assessed for significance in accordance with the following guidelines:

- Environmental Protection Authority (WA) 2016, Environmental Factor Guideline: Terrestrial Environmental Quality
- Environmental Protection Authority (WA) 2018, Environmental Factor Guideline: Landforms

All landforms were deemed unlikely to be significant according to the criteria in the above guidelines (Landloch, 2024).

Table 2-2: Landforms Intersecting the PPAA (Landloch, 2024)

Land System	Description	Area in PPAA (ha)
Disturbed	Roads, rail and other areas of anthropogenic disturbance.	30.3
Drainage Floors and Channels	Level to gently inclined linear drainage tracts that are typically located within the stony plains and interfluves as the wider drainage pathways become narrower and more incised.	21.6
Low Hills and Ridges	Isolated landform within the Project area that is characterised by very low hills comprised of exposed bedrock with gently inclined slopes. The lower slopes of the low hills and ridges are an erosional landform surrounded by surfaces that contain a rocky mantle. Granitic outcrops are common on the surface, with the pattern of these outcrops typically broader than the Tor heaps.	7.3
Pebbly Plains	Level plains that occur as patches within the sandy/loamy plains. The surface of the pebbly plains includes many to abundant pebbles of quartz and ironstone.	31.5



Land System	Description	Area in PPAA (ha)
Sandy/Loamy Plains	Depositional landform comprised of alluvial deposits and characterised by level to very gently inclined sandy and loamy plains that extend throughout and in between the stony plains and interfluves.	788.0
Stony Plains and Interfluves	Depositional landform comprised of level to level to undulating plains with a gritty surface and mantles of variable rock cover. The surface is typically comprised of few to very abundant grit and pebbles of quartz and granite with occasional outcrops of granite. Interfluves extend throughout the landform in between major drainage lines.	535.2
Tor Heaps	Steep to precipitous hillocks that are typically convex in shape with a surface cover comprised of bare rock. Erosion of these rocks is driven by sheet wash or water-aided mass movement, and results in a broken appearance. The Tor heaps present within the Project area are typically extremely weathered and in poor condition.	2.6
Total:		1,416.5

Soils within the PPAA were classified into three broad Soil Mapping Units (SMUs) (Landloch, 2024):

- **SMU1:** Loamy/clayey soils occurring in the sandy/loamy plains within both topsoil and subsoil layers and are likely to be present within the drainage floors and channels. The defining feature of these soils is the higher abundance of clay content than the other SMUs. These soils comprise approximately 49% of the Project area.
- **SMU2:** Rocky soils occurring mainly within the stony plains and interfluves landform types, however, are associated with pebbly plains and low hills and ridges. The defining feature of these soils is a high abundance of coarse fragments (i.e. rocky soils). These soils comprise approximately 42% of the Project area.
- **SMU3:** Sandy soils occurring within the sandy/loamy plains landform types. The defining feature of these soils is the very low abundance of clay throughout the soil profile. These soils comprise approximately 9% of the Project area.

The three soil types are typical of rangeland soils, with generally low fertility and benign chemical properties. As these soils have no structure, and their fertility is already low, any disturbance is unlikely to have a significant impact on their quality. Additionally, in-field testing indicated that no soils were Acid Sulphate Soils or Potentially Acid Sulphate Soils (Landloch, 2024).

2.2.3 Conservation Areas

There are no conservation areas adjacent to or intersecting the PPAA. The closest conservation area is Mungaroona Range Nature Reserve, which is located 50 km southwest of the Project (Post Text Figure 7).



The Project also does not intersect any nationally significant wetlands or Ramsar Wetlands. The closest wetland of national significance is the Fortescue Marsh, located approximately 100 km south of the Project.

2.3 Flora and Vegetation

SLR Consulting (SLR, 2025a) completed a detailed flora and vegetation assessment of the Project area which comprised a desktop assessment followed by a two-phase detailed flora and vegetation survey, and consolidated two other recent surveys to cover a total Survey Area of approximately 11,057 ha (Appendix 2).

The survey programs were conducted in accordance with:

- Department of Environment 2013, Significant impact guidelines 1.1: Matters of National Environmental Significance
- Environmental Protection Authority Western Australia 2016, *Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment.*

2.3.1 Pre-European Vegetation

Pre-European vegetation mapping shows two vegetation associations within the PPAA that form part of the Abydos Plain – Chichester System; 'Abydos Plain – Chichester 93' (VA: 93.4) and 'Abydos Plain – Chichester 626' (VA: 626.1) (Beard, Beeston, Harvey, Hopkins, & Shepherd, 2013). The former compromises virtually all of the PPAA and the latter makes up <0.01% of the PPAA.

Ecological communities should be maintained at a threshold level of above 30% of their original extent (EPA, 2008). Both vegetation associations units have over 99% of their original extent remaining within WA, the Pilbara bioregion, Chichester subregion and local government area (SLR, 2025a).

2.3.2 Vegetation Types

A total of twenty-three vegetation types were identified in the consolidated detailed flora and vegetation assessment (SLR, 2025a), eleven of which occur within the PPAA. None of these vegetation types are restricted to the PPAA, as they occur more broadly within the Survey Area.

A summary of vegetation types within the PPAA is described in Table 2-3 and displayed in Post Text Figure 4.



Table 2-3: Summary of Vegetation Types

Vegetation Type code	Vegetation Type	Conservation Significance	Landform	Survey Extent	Extent within PPAA (ha)	Extent within IDF (ha)	Direct Impact (%)
ChAspTe:	Corymbia hamersleyana low isolated trees over mixed Acacia spp. mid to tall shrubland over *Cenchrus ciliaris (Chrysopogon fallax) low isolated tussock grassland over Triodia epactia low open hummock grassland.	Locally significant due to occasional populations of Neptunia longipila (P2) on ecotonal clay boundaries. Dominant species not restricted.	Broad open drainage plain between low hills	177.8	1.3	1.1	0.6
ChAspTrc:	Corymbia hamersleyana low isolated trees over Acacia eriopoda, A. trachycarpa, and A. colei var. colei tall open shrubland over Tephrosia rosea var. clementii, Triumfetta ramosa, and A. stellaticeps mid to low open shrubland over Themeda triandra (*Cenchrus ciliaris) low tussock grassland over Triodia epactia low open hummock grassland	None.	Minor Drainage	309.9	0.2	0.1	0.0
AanTI:	Acacia ancistrocarpa (A. orthocarpa, A. tumida var. pilbarensis) mid to tall shrubland over Triodia lanigera (T. epactia) low open hummock grassland.	None.	Plains	163.3	144.2	104.7	64.1
AiAbTw	Acacia inaequilatera tall, isolated shrubs over A. acradenia and A. bivenosa mid open shrubland over Triodia wiseana low open hummock grassland.	None.	Plains (Low rise)	323.0	13.3	11.0	3.4
AoTe	Acacia orthocarpa (A. ancistrocarpa) mid to tall open	None.	Plains	4,146.8	653.4	475.9	11.5

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Vegetation Type code	Vegetation Type	Conservation Significance	Landform	Survey Extent	Extent within PPAA (ha)	Extent within IDF (ha)	Direct Impact (%)
	shrubland over Triodia epactia and T. lanigera low open hummock grassland.						
AsTla	Acacia stellaticeps and Pluchea ferdinandi-muelleri low open shrubland over Triodia lanigera (T. epactia) low hummock grassland.	None.	Plains	350.7	37.9	15.9	4.5
ChAaTc	Corymbia hamersleyana low isolated trees over Acacia acradenia, Petalostylis labicheoides, and Grevillea wickhamii (A. inaequilatera) tall sparse shrubland over Triodia chichesterensis and Triodia wiseana low hummock grassland.	Supports very large numbers of <i>Triodia</i> chichesterensis (P3) (dominant spinifex). Other records of conservation significant flora: Euphorbia clementii (P3).	Undulating plains/low hills	877.2	165.5	155.2	17.7
ChAaTs	Corymbia hamersleyana low isolated trees over Acacia acradenia tall, isolated shrubs over Triodia schinzii low hummock grassland.	Locally restricted. However, dominated by species that are not restricted.	Plains	70.8	56.8	55.00	77.7
ChAspTla	Corymbia hamersleyana low isolated trees over Acacia inaequilatera (Grevillea wickhamii subsp. hispidula) tall isolated shrubs over a mosaic of Acacia ancistrocarpa, A. acradenia, and Petalostylis labicheoides mid open shrubland over Triodia lanigera and Triodia epactia (T. longiceps,	None	Plains	1,526.8	260.5	234.2	15.3



Vegetation Type code	Vegetation Type	Conservation Significance	Landform	Survey Extent	Extent within PPAA (ha)	Extent within IDF (ha)	Direct Impact (%)
	T. wiseana) low hummock grassland.						
PfTlo	Pluchea ferdinandi-muelleri (Acacia stellaticeps) low open shrubland over Triodia longiceps (T. epactia) low open hummock grassland.	Records of Rothia indica subsp. Australis (P3).	Plains with minor sheet flow	359.8	43.8	35.1	9.8
AeTe	Acacia eriopoda and A. tumida var. pilbarensis tall sparse shrubland over Triodia epactia and T. lanigera low open hummock grassland.	Records of Trianthema aff. Oxycalyptrum.	Minor granite outcroppings	129.40	9.2	1.8	1.4
Cleared				229.9	30.5	18.2	7.9
Total					1,416.5	1,108.2	-

^{*}Impact percentage calculated from clearing associated within the IDF in relation to the Survey Extent



2.3.3 Vegetation Condition

The majority of the PPAA (98%) and IDF (97%) was classified as being in Very Good or Excellent condition with negligible or minor disturbance such as recent and historical clearing, weeds and introduced fauna (cattle)((SLR, 2025a). The vegetation condition within the PPAA and IDF is presented in Table 2-4 and mapped in Post Text Figure 5.

Table 2-4: Vegetation Condition

Vegetation Condition	Area within PPAA (ha)	Area within IDF (ha)	
Excellent	1,354.2	1,061.6	
Very Good	31.9	28.4	
Completely Degraded	30.4	18.2	
Total	1,416.5	1,108.2	

2.3.4 Conservation Significant Vegetation

2.3.4.1 Conservation Significant Vegetation Types

For each vegetation type mapped within the survey area, conservation significance was assessed based on meeting one or more of the following criteria:

- Dominant taxa include taxa that are considered uncommon or restricted.
- Restricted extent (<1% of survey area) and does not appear to be represented outside the survey area (based on opportunistic observations, aerial imagery and other studies).
- Vegetation type is otherwise significant (potential GDE, refuge, restricted landform, high diversity).

Within the PPAA, three vegetation types met the criteria for conservation significance (Post Text Figure 6):

- ChAaTc supports large numbers of *Triodia chichesterensis* (P3) as the dominant spinifex hummock grass, which may act as refuge for conservation significant species. Up to 17.7% of the mapped extent of this vegetation type, and up to 18% of the population of the dominant species (*Triodia chichesterensis*) is expected to be directly impacted within the IDF. However, this species is not restricted to this vegetation type and was recorded widely across the survey area (SLR, 2025a).
- ChAaTs is considered locally significant due to its restricted distribution. Up to 77.7% of
 the mapped extent of this vegetation type is expected to be directly impacted within the
 IDF. However, no dominant species within this vegetation type were considered
 uncommon or restricted. Further, the mapped extent only considers the survey area, and
 this vegetation type was considered well represented outside of the survey area (SLR,
 2025a).
- ChAspTe is considered locally significant due to occasional populations of Neptunia longipila (P2) on ecotonal clay boundaries. However, this vegetation type is not the main habitat for this species which is primarily found in vegetation type AsyAISf located outside the PPAA (SLR, 2025a). There are no other species that are considered



uncommon or restricted to this vegetation type. Further, only 0.6% of the mapped extent of this vegetation type is expected to be directly impacted within the IDF.

2.3.4.2 Threatened and Priority Ecological Communities

No TECs or PECs listed under the *EPBC Act* or the *BC Act* were identified within the PPAA (SLR, 2025a).

2.3.4.3 Groundwater Dependent Ecosystems

There are no potential GDE's or GDE's within the PPAA. The Project has been intentionally designed to avoid these vegetation types.

2.3.4.4 Sheet-flow Dependent Ecosystems

No vegetation within the PPAA is mapped as sheet-flow dependent. The Project has been intentionally designed to avoid these vegetation types.

2.3.5 Conservation Significant Flora

No threatened species listed under the *EPBC Act* and/or *BC Act* were recorded within the PPAA. Three DBCA listed Priority species were identified within the PPAA (Post Text Figure 8):

- Euploca mutica (P3): Recorded across the PPAA and likely to occur sparsely across
 plain landforms. Up to 502 known individuals will be directly lost from Project activities.
 However, this species is not restricted to a vegetation type and was recorded from over a
 third of mapped vegetation units outside the PPAA (SLR, 2025a).
- Goodenia obscurata (P3): One individual recorded in the PPAA. Predominately occurs in plains landforms (SLR, 2025a). Not recorded within the IDF.
- Triodia chichesterensis (P3): Recorded across the PPAA. Concomitant with the ChAaTc vegetation type and occurring sparsely where there are small instances of calcrete geology present. The ChAaTc vegetation type is limited to the northern PPAA. Approximately ~3,104,000 4,345,600 individuals are expected to be present in the IDF, which represents a loss of approximately 18% of the mapped population in the survey area. However, this taxon is well-represented in the area with high population density recorded within and outside the survey areas (from database records). It is considered a common, widespread species which is consistent with Priority 3 taxa that are data deficient but have wide distributions with large populations and/or large areas of suitable habitat with no known imminent threats (SLR, 2025a).

2.3.6 Introduced Species

Within the PPAA, two introduced species were recorded: *Aerva javanica* and *Cenchrus ciliaris*. Both species were found in the northern section of the PPAA (Post Text Figure 9) and have a Western Australian *Biosecurity and Agriculture Management Act 2007* Status of Permitted – S11. No Weeds of National Significance or Declared Pests were identified within the PPAA or IDF.



2.4 Fauna and Habitat

Multiple fauna surveys have been conducted across the PPAA as summarised below:

- The northern PPAA was surveyed by a detailed vertebrate fauna assessment (SLR, 2025b) consolidating a desktop assessment and single-phase detailed and targeted fauna survey in March 2022 and a two-phase detailed survey was conducted in 2024 and 2025. The surveys were undertaken across a broader Survey Area covering an area of approximately 6,513.7 ha (Appendix 4).
- The southern PPAA was covered by a detailed terrestrial vertebrate fauna assessment comprising a desktop assessment and two-phase detailed and targeted vertebrate fauna survey in May 2023 and September/October 2023, which included a broader Survey Area of 4,532.9 (ha) (Spectrum, 2025a) (Appendix 3).

Combined, the fauna Survey Area for the Project covered an area of 11,046.6 ha (SLR, 2025b; Spectrum, 2025a).

• The northern and southern PPAA was also subject to a targeted Greater Bilby survey and assessment (Spectrum, 2025b) (Appendix 5).

All surveys were conducted in accordance with the

• Environmental Protection Authority Western Australia 2020, *Technical Guidance* – *Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment*

2.4.1 Fauna Habitat

Seven broad fauna habitats (excluding cleared and regrowth areas) were mapped within the Survey Area (Spectrum, 2025a; SLR, 2025b). All habitats extend beyond the Survey Area and are considered typical of the Pilbara bioregion (Spectrum, 2025a; SLR, 2025b).

Of the seven identified fauna habitats, four are within the PPAA and IDF. The Project has been designed to avoid the conservation significant Drainage Line/River/Creek (major) and Granite Outcrop habitat. Details of fauna habitats, their extent within the PPAA and IDF, and the direct impact to each habitat are provided in Table 2-5 and presented in Post Text Figure 10.

Table 2-5: Fauna Habitats within the PPAA and IDF

Habitat Type	Description	Total Mapped Extent^ (ha)	Area within PPAA (ha)	Area within IDF (ha)	Direct Impact (%)*
Drainage Line/River/Creek (minor)	Acacia trachycarpa and Acacia tumida over Triodia epactia and Triodia longiceps low hummock grasses over mixed	365.4	12.6	5.3	1.5



Habitat Type	Description	Total Mapped Extent^ (ha)	Area within PPAA (ha)	Area within IDF (ha)	Direct Impact (%)*
	herbs and grasses on a sandy substrate.				
Plain (sand)	Acacia orthocarpa and A. ancistrocarpa over patches of A. stellaticeps over Triodia epactia and T. lanigera low hummock grasses. The substrate varies with mostly sand, or sandy-loam with some patches of quartz or granitic stones and low granitic outcropping scattered throughout.	6,110.1	1,268.1	1,023.9	16.8
Plain (stony/gibber)	Sparse Corymbia hamersleyana, over Acacia acradenia, over Triodia schinzii low hummock grasses, on abundant ironstone stones/pebbles and some quartz.	3,033.7	89.9	51.5	1.7
Hills/Ranges/Plateaux	Rocky ironstone hills and slopes with rocky outcropping and thin soils over shallow bedrock. Vegetation consists of open <i>Acacia</i> shrublands over <i>Triodia</i> hummock grasslands.	654.9	12.6	6.8	1.0
Cleared	Anthropogenic clearing with little to no vegetation.	249.9	33.2	20.7	-
Total	-	1,416.5	1,108.2	-	

[^]Total Mapped Extent is the combined Survey Area from (SLR, 2025b) and (Spectrum, 2025a). *Calculated as the percentage of the IDF within the corresponding Total Mapped Extent of the Habitat Type.

A significant portion of the identified fauna habitats within the PPAA will be retained. Three of the four fauna habitats, Drainage Line/River/Creek (minor), Plain (stony/gibber) and Hills/Ranges/Plateaux, within the IDF will have less than 2% of their mapped survey extent directly impacted by the Project. Up to 16.8% of the Plain (sand) habitat, which is critical habitat for burrowing species, will be directly impacted by the Project, however, these species are typically considered mobile, and fauna surveys have demonstrated persistence in areas adjacent to development (Spectrum, 2025a).

2.4.2 Terrestrial Fauna

Results from the two-phase fauna survey identified 123 vertebrate fauna species within the southern PPAA (Spectrum, 2025a) and 175 fauna species within the northern PPA (SLR, 2025b).



2.4.3 Conservation Significant Fauna

A likelihood of occurrence assessment of conservation significant fauna occurring within the broader Survey Area was conducted based on desktop assessment (Spectrum, 2025a) (SLR, 2025). Conservation species known to occur (Recorded), 'Previously Recorded' or having a 'Medium to High' likelihood of occurrence within the PPAA are listed in Table 2-6 and displayed in Post Text Figure 11. Species with a likelihood of occurrence lower than 'Medium' and/or with no suitable habitat in the PPAA are considered unlikely to be significantly impacted by the Project and not discussed further.

The likelihood of occurrence criteria was defined according to the below, although slight differences are noted between Spectrum (2025a) and SLR (2025b):

Recorded:

- Species recorded within the Survey Area within the previous 10 years; or
- Species recorded within the Survey Area during the current survey.

Previously Recorded:

The taxon has been previously recorded within the Survey Area in the last 15 years.

High (Likely to occur):

- Species recorded within the Survey Area, between 10 and 20 years ago; or
- Species recorded within 20 km of the Survey Area and/or suitable habitat exists in the Survey Area. Species is easily detectable using standard survey methods.

Medium (May occur):

- Species recorded within the Survey Area more than 20 years ago; or
- Species has not been recorded within the Survey Area more than once in the last 15 years; or
- Species recorded within 40 km of the Survey Area and suitable habitat occurs in the Survey Area; or
- Suitable habitat exists in the Survey Area but is marginal or limited in extent, species records are infrequent, or species is not easily detectable using standard survey methods.

Low (Unlikely to occur):

 Species rarely or not recorded within 50 km of the Survey Area and/or suitable habitat does not occur within the Survey Area; or



 Suitable habitat occurs in the Survey Area, but species has not been recorded for more than 50 years.

• Very Low:

 Species not recorded within 50 km despite multiple recent surveys. Suitable habitat does not occur within the Survey Area. Species considered locally extinct.



Table 2-6: Conservation significant fauna recorded within the PPAA (Spectrum 2025, SLR 2025)

Species	Common Name	Status	Occurrence in PPAA (Yes/No) & Abundance	Presence of species' habitat in PPAA
Dasyurus hallucatus	Northern Quoll	Endangered (EPBC Act and BC Act)	No – Recorded in broader Survey Area. A resident population is located in close proximity (<1km) to the PPAA.	No critical habitat (Granite Outcrops) in PPAA. Supporting habitat, Drainage Line/River/Creek (minor) and Hills/Ranges/Plateaux habitat type, used for dispersal and forage.
Macrotis lagotis	Greater Bilby	Vulnerable (EPBC and BC Act)	Yes – 1 potential old digging in Southern PPAA and IDF (Spectrum, 2025a; Spectrum, 2025b). Resident population located in close proximity (<1 km) to the PPAA.	Plain (sand) and Drainage Line/River/Creek (minor) is critical habitat. Plain (stony/gibber) habitat type is supporting habitat for burrowing and forage.
Rhinonicteris aurantia [Pilbara form])	Pilbara Leaf- Nosed Bat	Vulnerable (EPBC Act and BC Act)	Yes – Recordings at 1 site in Southern PPPAA during both phases of field survey (Spectrum, 2025a) but not close to sunset/sunrise indicating no nearby roosts. Records are likely individuals passing through as flight path & not utilising habitat	No critical habitat in PPAA (or Survey Area). Supporting foraging habitat, Drainage Line/River/Creek (minor) in the PPAA.
Macroderma gigas	Ghost Bat	Vulnerable (EPBC Act and BC Act)	No – Recorded in broader Survey Area ((Spectrum, 2025a), but no suitable roosts recorded. Likely foraging in Survey Area only.	No critical habitat in PPAA (or Survey Area). Species likely utilise Drainage Line/River/Creek (minor) and possibly Plain (sand) and Plain (stony/gibber) habitat for occasional foraging.
Falco hypoleucos	Grey Falcon	Vulnerable (EPBC Act and BC Act)	No – Recorded in broader Survey Area.	No critical habitat in PPAA. Species likely uses Drainage Line/River/Creek (minor), Plain (stony/gibber) and Plain (sand) as supporting habitat for foraging. Drainage Line/River/Creek (minor) habitat does not comprise large Eucalypts spp. trees required for nesting.
Falco peregrinus	Peregrine Falcon	Other specially protected species (BC Act)	No – Recorded in broader Survey Area.	No critical habitat in PPAA (or Survey Area). Likely utilises the Drainage Line/River/Creek (minor) and potentially Plain (sand) and Plain (stony/gibber) habitats for foraging only.
Charadrius veredus	Oriental Plover	Migratory (BC) Marine and	No – Medium to High likelihood of occurrence in broader Survey Area.	No critical habitat in PPAA (or Survey Area). Plain (sand), Plain (stony/gibber) and Drainage



Species	Common Name	Status	Occurrence in PPAA (Yes/No) & Abundance	Presence of species' habitat in PPAA
		Migratory (EPBC)		Line/River/Creek (minor) is supporting habitat for occasional foraging. The species is likely transient, occurring only during the summer migratory period between September and March.
(Actitis hypoleucos)	Common Sandpiper	Migratory (BC) Marine and Migratory (EPBC)	No – Medium likelihood of occurrence in broader Survey Area.	No critical habitat in PPAA. Drainage Line/River/Creek (minor) is supporting habitat for occasional foraging. The species is likely transient, occurring only during the summer migratory period between September and March.
Liasis olivaceus barroni	Pilbara Olive Python	Vulnerable (EPBC and BC Act)	No – Medium to High likelihood of occurrence in broader Survey Area.	No critical habitat in PPAA. Drainage Line/River/Creek habitat (minor) used sporadically for foraging and dispersal habitat.
Anilios ganei	Gane's Blind Snake	Priority 1 (DBCA - WA)	No - High likelihood of occurrence in broader Survey Area.	Species likely to inhabit Drainage Line/River/Creek (minor). It may also occur in areas of Plain (sand) habitat, particularly near Drainage Line/River/Creek areas.
Ctenotus nigrilineatus	Pin-striped Finesnout Ctenotus	Priority 1 (DBCA - WA)	No - Medium likelihood of occurrence in broader Survey Area.	Critical habitat is Plain (sand) where it intersects Granite Outcrops habitat. Drainage Line/River/Creek habitat (minor) potentially critical habitat, if not supporting habitat although this species habitat preference largely unknown.
Lagorchestes conspicillatus	Spectacled Hare- wallaby	Priority 4 (DBCA - WA)	No – High likelihood of occurrence in broader Survey Area.	Likely to use unburnt areas where tall, dense spinifex is present, including Plain (stony/gibber) and Plain (sand), which is critical habitat and Drainage Line/River/Creek (minor) habitat as supporting habitat for occasional foraging and dispersal.
Pseudomys chapmani	Western Pebble- mound Mouse	Priority 4 (DBCA - WA)	No – Recorded in broader Survey Area.	Critical habitat is Plain (stony/gibber), and Hils/Ranges/Plateaux and potentially Plain (sand) in the vicinity of Granite Outcrops habitat. No supporting habitat in PPAA (or Survey Area).
Antechinomys longicaudatus	Long-tailed Dunnart	Priority 4 (DBCA - WA)	No – High likelihood of occurrence in broader Survey Area.	Suitable shelter, breeding and foraging habitat exists within the Plain (stony/gibber) and Hils/Ranges/Plateaux.
Dasycercus blythi	Brush- tailed Mulgara	Priority 4 (DBCA – WA)	No – Recorded in broader Survey Area.	Critical burrowing habitat is Plain (sand) and Drainage Line/River/Creek (minor) habitat. Plain (stony/gibber) is supporting habitat for foraging and dispersal.



2.4.4 EPBC Act Referral - Greater Bilby and Northern Quoll

The Project was referred to DCCEEW under the *EPBC Act* and was determined to be a Controlled Action on 7 July 2025 for impacts to two protected matters (threatened species and communities); *Dasyurus hallucatus* (Northern Quoll) and *Macrotis lagotis* (Greater Bilby). As detailed in Table 2-6, indicators of Greater Bilby presence were recorded within the PPAA as well as a resident population in the immediate vicinity of the Project area. A resident population of Northern Quoll was also recorded near to the Project area although the species was not recorded within the PPAA nor any critical habitat.

As the Greater Bilby was detected during the detailed vertebrate fauna assessment (Spectrum, 2025a), a targeted survey of this species was completed which included targeted searches within and surrounding the PPAA for evidence of the species as well as modelling of Greater Bilby distribution across the Pilbara bioregion to predict species occurrence based on a range of environmental variables that represent habitat preferences of the species (Spectrum, 2025b). Confirmed presence of Greater Bilby was recorded outside the PPAA in the broader Survey Area at three sites where known Greaer Bilby occurrence was previously recorded. Potential, unconfirmed evidence in the form of old and ambiguous diggings was recorded elsewhere, including within the PPAA (Spectrum, 2025b). The species distribution model for the Greater Bilby identified land system and soil type as being the most significant variables of species presence, with Plain (sand) and Drainage Line/River/Creek (minor and major) recognised as critical habitat. As Drainage Line/River/Creek (major) does not occur in the PPAA and less than 2% of Drainage Line/River/Creek (minor) is within the IDF, the Project is not considered to significantly impact these two critical fauna habitat types. Up to 16.8% of the mapped Survey Extent of Plain (sand) habitat will be impacted by the Project. However, this habitat is not restricted to the broad Survey Area, it is locally widespread and extends into the surrounding Abydos Plain (Spectrum, 2025b). The Greater Bilby is also highly mobile and forages over vast areas, so the species is likely to disperse into areas of critical habitat that are widespread within the Survey Area and surrounds (Spectrum, 2025b).

Fortescue has adopted an avoidance approach to mitigate impacts to conservation significant species by significantly reducing Project size and avoiding conservation significant fauna habitat to the greatest extent practicable. To mitigate potential residual impacts, approximately 228.4 ha within the PPAA was proposed during the EPBC referral process as Avoidance Areas where no development will occur to conserve conservation significant fauna habitat (Post Text Figure 12). Additionally, a Fauna Management Area over the resident populations of Greater Bilby and Northern Quoll adjacent to the PPAA was also proposed during the EPBC referral process and will be where outcome-based management actions (e.g., weed, introduced predator and fire control) will be implemented to conserve the populations of these two species (Post Text Figure 13).



2.4.5 Introduced Species

Five introduced fauna species were identified across the Survey Area (Spectrum, 2025a; SLR, 2025b):

- Mus musculus (House Mouse)
- Felis catus (Feral Cat)
- Bos primigenius taurus (European cattle)
- Canis familiaris (Dog/Dingo)
- Equus caballus (Horse)

2.4.6 Short Range Endemics (SRE)

SRE surveys were conducted in accordance with the following guideline:

• Environmental Protection Authority Western Australia 2016, *Technical Guidance:* Sampling of short range endemic invertebrate fauna.

Short-range endemic (SRE) fauna are defined as animals that display restricted geographic distributions, nominally less than 10,000 km², that may also be disjunct and highly localised. A desktop review and single field survey of the Project area was undertaken to determine the occurrence of confirmed or potential SRE species (Bennelongia, 2025).

The desktop assessment recorded approximately 214 species attributable to SRE groupings in the surrounding Project area. Of these, 44 species were described with 5 of these being confirmed SRE's and the remaining 39 being non SRE's. An additional 170 species were undescribed with unknown distribution ranges (Bennelongia, 2025).

The field survey collected 211 specimens belonging to 30 species of SRE groups. Of these identified, 13 were non SRE's, 1 was a likely potential SRE, 12 were unlikely potential SRE's and 4 were data deficient potential SRE's. There were no confirmed SRE species identified during the desktop assessment that were found during the field survey (Bennelongia, 2025).

The habitat assessment identified a low variety of SRE habitat types within the Project areas, which is reflected in the absence of Confirmed SRE species. Four types of SRE habitats were identified during the field survey: drainage lines, sand plains, stony plains, and stony hills with gorges and gullies. Most of the potential SREs (Likely Potential SRE, Unlikely Potential SREs, and Data Deficient SREs) were found in stony plains (14 species), followed by drainage lines (seven species), stony hills (gorge/gully) (five species), and sand plains (four species) (Bennelongia, 2025).



The results of the SRE and habitat assessment concluded that the Project is unlikely to have a significant impact on SRE's or other conservation-significant invertebrates potentially occurring in the Project area.

2.4.7 Subterranean Fauna

Subterranean fauna are animals that inhabit underground habitats and include troglofauna and stygofauna. Troglofauna are terrestrial fauna that inhabit air chambers in underground caves or small, humid air-filled voids. Stygofauna are groundwater-dwelling aquatic fauna that inhabit a range of groundwater systems.

The Project will utilise water from existing, approved water infrastructure and excavations are not expected to intercept groundwater. Therefore, there is no anticipated impact to subterranean fauna from Project activities.

2.5 Regional and Local Hydrology

The Project is located within two local catchments, the Turner River West and Turner River. The Turner River West (major tributary) is situated 150 m west of the Project and Turner River (minor river) is located 500 m to the east. These tributaries flow north towards Port Hedland. Their confluence is located approximately 11 km to the north-west of the Project.

The southern PPAA is largely located within the Turner River West catchment, with a small part of the area within the Turner River catchment. Turner River West flows along the eastern boundary of tenement L45/692 with some minor drainage paths within the IDF of the southern PPAA. To the east of Turner River West is the Turner River, on which the Pincunah streamflow gauge (709010) is installed (Fortescue, 2024).

The northern PPAA is located both within the Turner River West and Turner River catchments. Like the southern PPAA, some minor drainage paths flow within the IDF of the area. The northern PPAA is also approximately 1.5 km downstream of the Pincunah streamflow gauge.

The Turner River West catchment is generally hydrologically analogous to Turner River catchment upstream of the Pincunah gauge. Both catchments flow in a northerly direction and are relatively flat with slopes of 2.1 m/km and 1.6 m/km, respectively.

The Project is located within the Pilbara Surface Water Area, proclaimed under the *Rights In Water and Irrigation Act 1914*. However, the PPAA does not intersect any Public Drinking Water Source Areas.

The regional and local hydrological setting is shown in Post Text Figure 14.



2.5.1 Surface Water

The PPAA is situated in a relatively flat area, although high in the landscape, outside of the Turner River West floodplain. The construction and physical presence of the solar panels, associated infrastructure, roads and buildings will modify local topography and may directly impact patterns of surface water flow. The volume of surface water flow may also increase locally due to reduced infiltration and absorption as a result of vegetation clearing, compaction of soil, and increase in impermeable structures (e.g. solar panels).

A Baseline Surface Water Assessment (Fortescue, 2024) was undertaken to characterise the hydrological regime of the Project and inform design of key infrastructure to minimise potential Project impacts. This included hydrological and hydraulic modelling of the 1% Annual Exceedance Probability (AEP) event for the Turner River West and Turner River catchment. The results of the modelling showed that natural flooding events had no interaction with the PPAA, and there is little significant interaction between concentrated catchment flows and the PPAA (Fortescue, 2024). Furthermore, surface flows within the PPAA are of low velocity shallow channels which are unlikely to result in scouring and channel movement. Therefore, whilst local, minor surface water flow patterns may be altered by the Project, it is unlikely that these changes will be significant.

The existing surface water quality within the catchment is likely to be adversely affected to some extent by the surrounding land use of the area hosting mining and pastoral activities. The Project activities are therefore unlikely to be a significant contributor to a deterioration in water quality of a semi-natural catchment.

The Project has been designed to ensure minimal impacts on surface water flows and surface water quality. Major and minor drainage lines have been avoided as far as reasonably practicable. Earthworks for the Project are not anticipated to substantially alter the existing topography and result in minimal changes to flow paths, depths and velocities. Further, stormwater drainage infrastructure for the Project will be designed and implemented to minimise erosion and sedimentation. Project activities will also be undertaken in accordance with the Surface Water Management Plan, attached in Appendix 10. Therefore, the Project is unlikely to result in altered surface water flows or quality which would significantly impact on sensitive environmental and cultural receptors.

A Bed and Banks Permit (application reference number: 074990) was deemed by DWER as not required on 26 September 2025.

2.6 Hydrogeology

The hydrogeology is dominated by exposed, low-permeability Archaean, Proterozoic, and Palaeozoic rocks which, where fractured, result in the development of minor aquifers that provide limited groundwater resources. Groundwater recharge rates are low in these



fractured rock zones and generally, infiltration mainly occurs where they are connected to drainage lines/creeks.

Additionally, there are alluvial aquifers located along riverbeds and floodplains that offer significant water storage. These alluvial aquifers are recharged predominantly during episodic flooding events related to the Turner River's flow, though their shallow nature makes them susceptible to seasonal fluctuations.

Groundwater levels in the Pilbara region typically fluctuate in response to sporadic rainfall patterns that result in irregular groundwater recharge through surface infiltration. The water table in the project area range from 21 metres below ground level (mbgl) to less than 10 mbgl in the north. Groundwater flow in this region generally follows south to north hydraulic gradient, consistent with the broader topographic slopes and drainage patterns of the Turner River catchment. Given that the Project is in the upper catchment areas, the groundwater throughflow is likely to be limited.

Water required for the Project (construction and operation) will be sourced from the existing and approved production bores near PPAA under Groundwater Licence GWL162068. As a result, there will be no new applications for groundwater abstraction associated with this Project. As the Project's water demand is consistent with current authorised usage, no impacts on groundwater resources are expected.

2.7 Heritage and Social Setting

The Project is situated in a remote area between the Turner River and Turner River West, within the Kangan pastoral lease (N049839) (Post Text Figure 15: Pastoral Setting



Post Text Figure 16) approximately 120 km south of Port Hedland, and 25 km west of Fortescue's North Star Magnetite Mine. The land is designated under the Port Hedland Scheme no. 7 and is rural zoned. The surrounding land is predominantly rural, with mining related infrastructure and pastoral activities.

2.7.1 Aboriginal Cultural Heritage

The Project's proposed activities are situated on the traditional lands of the Kariyarra people, who have established Native Title determination over the Project area (Post Text Figure 15). The registered Native Title body corporate for the Kariyarra Traditional Owners is the Kariyarra Aboriginal Corporation (KAC). All consultations and engagements with Kariyarra Traditional Owners were facilitated through KAC between 2023 to 2024.

Multiple consultations and heritage surveys with Kariyarra Traditional Owners was undertaken by Fortescue to assess potential impacts from the Project on culturally important values. The information gathered from consultations and survey was used to inform the design and planning of the Project in avoiding and minimising potential significant impacts on culturally significant values (Fortescue, 2024b).

A search of the Department of Planning, Lands and Heritage (DPLH) Aboriginal Cultural Heritage Inquiry System (ACHIS) on 1 August 2024 identified 21 registered and 40 lodged Aboriginal heritage places within a 2 km buffer of the Project (DPLH, 2024). No Registered Sites, Lodged Places or Historic Places (stored data) were identified within the PPAA (Post Text Figure 16).

A search of Fortescue's internal heritage database system was also undertaken. A total of 15 Heritage Places and one Heritage Restriction Zone (HRZ) were identified, through archaeological and ethnographic surveys by KAC and Fortescue, within the PPAA. However, no Heritage Places or HRZ's fall within the IDF and will not be directly impacted by Project activities (Post Text Figure 17).

2.7.2 Non-Indigenous Heritage

A search of the InHerit portal (Heritage Council, 2024) did not identify any heritage sites intersecting the PPAA. The nearest recorded heritage site is Indee Station (site of plane crash), located approximately 50 km north-west of the Project.



3 ASSESSMENT OF CLEARING PRINCIPLES

The proposed clearing activities have been assessed against the ten clearing principles as outlined in Schedule 5 of the EP Act and presented in Table 3-1. These principles aim to ensure that all potential impacts resulting from the removal of native vegetation can be assessed in an integrated way and applied to all lands in Western Australia. The principles address the four main environmental areas of biodiversity significance, land degradation, conservation estate as well as ground and surface water quality.

Table 3-1: Assessment Against The Ten Clearing Principles

Proponent Assessment of the Clearing Principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

The proposed clearing is not at variance with this principle.

The proposed clearing area has been assessed for its biological diversity, particularly regarding TECs, PECs, and conservation significant flora. The key findings are:

- No TECs or PECs listed under the EPBC Act or BC Act were identified within the PPAA or IDF (SLR, 2025a).
- No potential GDE's or GDE's are located within the PPAA or IDF.

Three vegetation types within the PPAA were considered conservation significant;

- ChAaTc (supports refuge for conservation significant species) up to 17.7% of the mapped extent of this vegetation type and up to 18% of the population of the dominant species (*Triodia chichesterensis* (P3)) will be directly impacted. However, this is not a significant impact as this species is not restricted to this vegetation type and is recorded across a wide distribution (SLR, 2025a).
- ChAaTs (restricted distribution) Up to 77.7% of mapped extent will be directly impacted however, this is not a significant impact as the extent relates to survey area only. This vegetation type is well represented outside the survey area and is not dominated by any species considered uncommon or restricted (SLR, 2025a).
- ChAspTe (supports populations of Neptunia longipila (P2) only 0.6% of the mapped extent of ChAspTe will be impacted, which is not significant (SLR, 2025a).

Based on the information above, the proposed clearing is not likely to significantly affect areas with a high level of biodiversity at a local or regional scale. The impact to conservation significant vegetation and types will be nil to minimal, and therefore the proposed clearing is not at variance with this principle. Further, clearing will be undertaken in accordance with the Project Environmental Management Plan (Appendix 14) to mitigate potential impacts to conservation significant vegetation.

(b) Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

The proposed clearing is not at variance with this principle.

From the comprehensive terrestrial fauna assessments undertaken for the Project, four broad fauna habitats were identified within the PPAA and the IDF. These fauna habitats were considered extensive and widespread, occurring beyond the Survey Area and typical of the Pilbara bioregion (Spectrum, 2025a; SLR, 2025b; Spectrum, 2025b). The desktop and targeted fauna surveys confirmed the presence of two



conservation significant species, with a further thirteen having a Medium to High likelihood of occurrence within the PPAA and IDF. However, the Project impact on these species is not likely to be significant as less than 2% of supporting and/or critical habitat is expected to be directly impacted as a result of clearing (refer Table 2-5 and Table 2-6). The exception is the Plain (sand) habitat with up to 16.8% of the mapped Survey Extent of this habitat within the IDF. This is unlikely to be a significant loss though given the habitat is locally widespread, extending beyond the broad Survey Area and into the Abydos Plain (Spectrum, 2025a; SLR, 2025b; Spectrum, 2025b). The only conservation significant fauna species recorded within the PPAA that utilises the Plain (sand) habitat as critical habitat is the Greater Bilby. However, this species is highly mobile, and forages widely so is likely to disperse into suitable habitat that is locally widespread (Spectrum, 2025b).

Nonetheless, the Project has been reduced in size and designed to avoid habitat of the highest conservation value (i.e., Granite Outcrops and the Drainage Line/River/Creek (major). Additionally, to mitigate potential residual impacts to conservation significant species, approximately 228.4 ha within the PPAA has been proposed as Avoidance Areas (Post Text Figure 12) where no development will occur, to preserve conservation significant fauna habitat. Additionally, an indicative Fauna Management Area (Post Text Figure 13) over a resident Northern Quoll and Greater Bilby population adjacent to the PPAA has been proposed and is intended to be where management actions (e.g., weed, introduced predator and fire control) occur to protect and conserve the resident populations of these species. Therefore, the clearing proposed by the Project is unlikely to significantly impact conservation significant species.

There is a low likelihood of SRE fauna being present within the PPAA due to low suitability of microhabitat types for SRE's (Bennelongia, 2025).

Based on the above, the proposed clearing is not likely to be at variance with this clearing principle. Further, clearing will be undertaken in accordance with the Project Environmental Management Plan (Appendix 14) and relevant approval conditions to mitigate potential impacts to conservation significant vegetation, fauna and fauna habitat.

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

The proposed clearing is not at variance with this principle.

No Threatened flora species protected under the *EPBC Act* or *BC Act* were recorded within the PPAA (SLR, 2025a).

Three Priority flora species listed by DBCA were identified in the PPAA:

- Euploca mutica (P3): Up to 502 known individuals in the IDF will be directly impacted from Project
 activities. However, this species is well-represented in the local area and not restricted to a vegetation
 type. It was recorded from over a third of mapped vegetation units outside the PPAA (SLR, 2025a). The
 Project is unlikely to have a significant impact on the taxon's abundance or distribution at the local or
 regional level or affect the conservation status of this taxon.
- Goodenia obscurata (P3): One individual recorded in the PPAA. Not recorded in the IDF and will not be directly impacted by the Project (SLR, 2025a).
- Triodia chichesterensis (P3): Up to approximately 18% (~3,104,000 4,345,600) of the population mapped within the Survey Area is within the IDF. However, this is not a significant impact as the taxon has a high population density recorded within and outside the survey areas. It is not considered rare, but is conversely a common, widespread species with no known imminent threats to its population (SLR, 2025a).

The proposed clearing is unlikely to significantly impact the continued existence of rare flora and therefore is not likely to be at variance with this clearing principle.

(d) Native vegetation should not be cleared if it comprises the whole or a part of or is necessary for the maintenance of a TEC.

The proposed clearing is not at variance with this principle.



No TECs listed under the EPBC Act and the BC Act were recorded within the PPAA.

The proposed clearing will not directly affect any known TECs or areas necessary for their maintenance.

The proposed clearing will not directly impact any TECs at a local or regional level. Therefore, the proposed clearing is not likely to be at variance with this clearing principle.

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

The proposed clearing is not at variance with this principle.

- The Survey Area is located within the Chichester subregion of the Pilbara IBRA where the surrounding landscape is generally intact, and the vegetation types present within the PPAA are mostly widespread (Thackway & Cresswel, 1995).
- There is over 99% of the original extent of vegetation associations within the PPAA remaining (Beard, Beeston, Harvey, Hopkins, & Shepherd, 2013).

Given the area surrounding the PPAA is not an area that has been extensively cleared, the vegetation to be cleared is not a significant patch of remnant vegetation and the vegetation types within the PPAA and surrounding area are generally widespread, the proposed clearing is not likely to be at variance with this clearing principle.

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

The proposed clearing is not at variance with this principle.

- There are no wetlands or permanent surface water features within the PPAA.
- All main drainage systems and tributaries (i.e. Turner River and Turner River West) have been intentionally avoided in the Project design.
- There are no potential GDE's or GDE's within the IDF.
- The Project does not intersect any nationally significant wetlands or RAMSAR Wetlands.

Given the information above, the proposed clearing is unlikely to significantly impact watercourses or wetlands at a local or regional level. Therefore, the proposed clearing is not likely to be at variance with this clearing principle.

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

The proposed clearing is not at variance with this principle.

- Three broad soil types were mapped that were typical of rangeland soils, being low in fertility, soil
 structure and consisting of benign chemical properties (Landloch, 2024). As the soil types have little
 structure and are already low in fertility, disturbance of soils through clearing of native vegetation is
 unlikely to have significant impact on soil quality or cause appreciable land degradation.
- Soil sampling indicated that soils were Acid Sulphate Soils or Potential Acid Sulfate Soils (Landloch, 2024). Therefore, the risk of disturbing Acid Sulphate Soils from clearing is low.
- Management measures, including clearing technique (blade down), surface water control, erosion
 management and rehabilitation, will be implemented during and after clearing to minimise any risk of land
 degradation.



Disturbed areas will be rehabilitated progressively during operations and at the completion of the Project.

Given the above, the proposed clearing is unlikely to cause appreciable land degradation at a local or regional level. Therefore, the proposed clearing is not likely to be at variance with this clearing principle.

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

The proposed clearing is not at variance with this principle.

- There are no conservation areas adjacent to or in the vicinity of the PPAA. The closest conservation area is Mungaroona Range Nature Reserve, which is located 50 km south-west of the Project.
- The Project also does not intersect any nationally significant wetlands or Ramsar Wetlands. The closest
 wetland of national significance is the Fortescue Marsh, located approximately 100 km south of the
 Project.

The proposed clearing is not at variance with this clearing principle.

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

The proposed clearing is not at variance with this principle.

Surface Water:

- All main drainage systems and tributaries (i.e. Turner River and Turner River West) have been intentionally avoided in the Project design.
- A Baseline Surface Water Assessment (Fortescue, 2024) concluded that outside of the floodplain of Turner River, there are only shallow and slow flows expected within the PPAA from minor tributaries. Project activities are not expected to significantly alter associated flow paths, water depths or velocities.
- Surface water quality is determined by catchment land use and activities. The catchment is presently semi-natural and hosts pastoral and mining activities in the surrounding area. Therefore, the Project activities are not likely to significantly cause a deterioration in surface water quality.
- With implementation of robust, appropriate management measures in the Surface Water Management Plan (Appendix 10), there are no significant changes to water quality, such as increased sedimentation or contamination, that are expected as a result of the proposed clearing.

Groundwater:

- The Project will not disturb groundwater, as there will be no significant excavation or disturbance of the subsurface below the groundwater table.
- The Project is also not expected to directly impact groundwater or associated dependent ecosystems, as water for construction and operation purposes will be sourced from existing, approved production bores approximately 2.5 km east of the PPAA.

Based on the above, the proposed clearing is unlikely to significantly impact the quality of surface or groundwater at a local or regional level. Therefore, the proposed clearing is not likely to be at variance with this clearing principle.

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause or exacerbate the incidence of flooding.

The proposed clearing is not at variance with this principle.

 The Baseline Surface Water Assessment has confirmed that the proposed clearing is unlikely to cause or exacerbate flooding with only minimal interaction between concentrated flows and the

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- Project expected. Additionally, earthworks are not likely to significantly alter landforms, changes to flow paths, depths or velocities (Fortescue, 2024).
- The PPAA sits high in the landscape within their respective catchments and away from concentrated flows. Therefore, management of local flows through measures such as culverts is considered sufficient for management of drainage.
- The Project has intentionally been designed to avoid major waterways and floodplains. Based on the
 above, the proposed clearing is unlikely to cause or exacerbate flooding at a local or regional level.
 Therefore, it is not likely to conflict with this clearing principle.

In summary, the assessment of the proposed clearing of 1,089.9 ha of native vegetation within a PPAA of 1,416.5 ha of PPAA against the ten clearing principles, demonstrates no likely variance with any of the principles.



4 ENVIRONMENTAL MANAGEMENT MEASURES

The environmental management measures and commitments listed within Table 4-1 have been created to ensure impacts to native flora, vegetation, fauna, and habitat are minimised as far as practicable. The management measures presented will be consistent with those proposed within the Mine Development Closure Plan for the Turner River Solar Hub, which is to be submitted to DMPE for assessment.

Table 4-1: Environmental Management Measures and Commitments

Environmental Aspect	Commitment Number	Commitment
Clearing and Topsoil Disturbance	Commitment 1	Activities are undertaken in a manner that minimises vegetation clearing and ground disturbance to the greatest extent practicable, to ensure conservation significant flora and vegetation types are protected. Conservation significant flora or vegetation in close proximity to clearing areas will be clearly demarcated prior to construction activities commencing to protect the conservation significant flora species and vegetation from impacts such as accidental clearing or disturbance.
	Commitment 2	Clearing and ground disturbance will be undertaken in a slow and directional manner to allow dispersal of fauna towards refuge habitat. All clearing and ground disturbance will be undertaken in accordance with the Project Environmental Management Plan (548PG-5670-PL-EN-0001) (Appendix 14), an approved Native Vegetation Clearing Permit and the Land Use Certification Acquisitions and Tenements Procedure (100-PR-TA-0001) (Appendix 6). The procedure will be incorporated into the site induction.
	Commitment 3	Vehicles and other equipment will remain on the designated access routes.
	Commitment 4	Disturbed areas no longer operationally required will be rehabilitated progressively where possible and in accordance with the Mine Development Closure Plan, to be submitted to DMPE for assessment.
	Commitment 5	Topsoil and vegetation will be stripped and stored separately in designated stockpiled areas and used to progressively rehabilitate disturbed areas following completion of construction activities in accordance with the Ground Disturbance and Topsoil Management Procedure (IO-PR-EN-0010) (Appendix 9Appendix). Stockpiles will be signposted.
Surface Water	Commitment 6	Infrastructure has been designed to avoid existing major drainage lines.
	Commitment 7	Surface mobile equipment will be maintained throughout the life of the Project to minimise the risk of spillage and/or seepage of hydrocarbons to the environment.
	Commitment 8	Stormwater management controls will be constructed as necessary to direct rainfall away from open excavations. The Fortescue Surface Water Management Plan (100-PL-EN-0005) (Appendix 10) for construction of pipelines and infrastructure will be implemented.



Environmental Aspect	Commitment Number	Commitment
Flora and Fauna	Commitment 9	Weed hygiene requirements described in the Weed Management Plan (45-PL-EN-0033) (Appendix 7Appendix 7: Weed Management Plan) will be adhered to, including the requirement that all vehicles and equipment arriving on site be in a clean condition, free of soil, weeds, seeds and vegetative matter.
	Commitment 10	Weeds listed under the <i>BAM Act</i> that are identified within the Project area will be controlled in accordance with the weed control and monitoring program prescribed in the Weed Management Plan (45-PL-EN-0033) (Appendix 7).
	Commitment 11	Pre-clearance checks for conservation significant flora and fauna will be undertaken prior to clearing and in accordance with the Land Use Certification Procedure (100-PR-TA-0001) (Appendix 6). No ground disturbance will be undertaken without a valid land use certificate.
	Commitment 12	Conservation significant fauna and habitat identified from targeted fauna surveys will be recorded in the Corporate GIS and Product Information Management System (PIMS) in accordance with the Environmental Datasets – Data Governance Guidelines (100-GU-EN-0020).
	Commitment 13	Impacts to conservation significant fauna will be managed in accordance with conditions of relevant approvals (i.e., EPBC conditions for a Controlled Action), the MDCP to be submitted to DMPE for assessment, and the Conservation Significant Fauna Management Plan (45-PL-EN-0034) (Appendix 8) and the following requirements:
		 Light and noise emissions that could potentially impact fauna will be managed.
		 Speed limits to minimise collisions with fauna will be imposed.
		All personnel will be required to undergo an induction regarding threatened fauna and direct and indirect impacts.
Air Quality and Noise	Commitment 14	Dust impacts from Project activities will be managed in accordance with the Dust Management Plan (IO-PL-EN-0001) (Appendix 11), including the following requirements:
		Unsealed surfaces will be watered as required to minimise the generation of dust in high-risk areas.
		Dust monitoring programs will be implemented if required.
	Commitment 15	Vehicles will be maintained as per the manufacturer's specifications to ensure noise and air emissions are minimised.
Heritage	Commitment 16	All proposed operations will be carried out in accordance with the provisions of the <i>Aboriginal Heritage Act 1972</i> .
Chemical and Hydrocarbon Management	Commitment 17	Chemicals and hydrocarbons will be managed on site in accordance with the Chemical and Hydrocarbon Storage Procedure (45-PR-EN-0041) (Appendix 12) and Hazardous Chemicals Management Procedure (45-PR-SA-0061) (Appendix 13), including the following requirements:
		Risk assessment of all hazardous chemicals.
		Staff training (ChemAlert Administrator, Hazardous Chemicals, and Dangerous Goods).



Environmental Aspect	Commitment Number	Commitment	
		Regular inspections of chemical storage areas.	
		Reporting of injuries, illnesses, and spills.	
		Adherence to chemical and hydrocarbon storage standards and design requirements.	
		Segregation of incompatible materials.	
Workforce and Training	Commitment 18	Site induction will be completed by all personnel, which outlines strategies to protect the environment.	



5 REHABILITATION

Rehabilitation is the return of disturbed land to a safe, stable, productive, non-polluting, and self-sustaining condition, enabling beneficial land uses. Disturbed areas no longer required for operations will be rehabilitated, as well as all areas at the completion of the Project.

Rehabilitation, closure monitoring, and maintenance programs will be initiated to ensure the success of rehabilitation efforts, demonstrate compliance with completion criteria, and identify the need for maintenance activities as outlined in the MDCP for the Project, to be submitted to DMPE for assessment.



6 REFERENCES

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DOCUMENT CONTROL

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Approved	Zéna Harman			
		Signature		
Next Review Date (if applicable)	N/A			



POST TEXT FIGURES



Post Text Figure 1: Disturbance Layout



Post Text Figure 2: Biogeographic Location



Post Text Figure 3: Land Systems



Post Text Figure 4: Vegetation Types



Post Text Figure 5: Vegetation Condition



Post Text Figure 6: Significant and Potentially Significant Vegetation



Post Text Figure 7: Conservation Areas



Post Text Figure 8: DBCA-listed Priority Flora species



Post Text Figure 9: Introduced Species



Post Text Figure 10: Fauna Habitats



Post Text Figure 11: Conservation Significant Fauna Recordings



Post Text Figure 12: Avoidance Areas



Post Text Figure 13: Indicative Fauna Management Area



Post Text Figure 14: Regional Hydrological Setting



Post Text Figure 15: Pastoral Setting



Post Text Figure 16: Native Title Agreement Area



Post Text Figure 17: Registered Aboriginal Heritage Places



APPENDICES



Appendix 1: Turner River Solar Hub Soil and Landform Assessment



Appendix 2: Turner River Consolidated Flora and Vegetation Assessment



Appendix 3: Vertebrate Fauna Assessment: North Star Junction Renewable Energy Infrastructure Project



Appendix 4: Vertebrate Fauna Survey: North Star Junction Additional Area



Appendix 5: Wodgina Project - Targeted Bilby Survey



Appendix 6: Land Use Certification Acquisitions and Tenements Procedure



Appendix 7: Weed Management Plan



Appendix 8: Conservation Significant Fauna Management Plan



Appendix 9: Ground Disturbance and Topsoil Management



Appendix 10: Surface Water Management Plan



Appendix 11: Dust Management Plan



Appendix 12: Chemical and Hydrocarbon Storage Procedure



Appendix 13: Hazardous Chemicals Management Procedure



Appendix 14: Environmental Management Plan – Turner River Solar Hub