Attachment 2

Supporting Documentation

Native Vegetation Clearing Permit

Appaloosa Tracks

8 May 2026

26_NVCP_001

ELP-3396

Contents

List of Tables

List of Figures

ABBREVIATIONS

The following table described various abbreviations and acronyms used throughout this report.

Abbreviation	Meaning
ASRIS	Australian Soil Resource Information System
BC Act	*Biodiversity Conservation Act 2016*
The Bureau	Bureau of Meteorology
Coffey	Coffey Environments Pty Ltd
CPS	Clearing Permit System
DBCA	Department of Biodiversity, Conservation and Attractions
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DMPE	Department of Mines, Petroleum, and Exploration
DPIRD	Department of Primary Industries and Regional Development
DPLH	Department of Planning Lands and Heritage
DWER	Department of Water and Environment Regulations
Ecologia	Ecologia Environment Pty Ltd
EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ESA	Environmental Sensitive Area
Fortescue	Fortescue Limited
GDE	Groundwater Dependent Ecosystem
IBRA	Biogeographic Regionalisation for Australia
IDE	Indicative Disturbance Envelope
MBM	Mount Bruce Mining Pty Ltd
NVCP	Native Vegetation Clearing Permit
PEC	Priority Ecological Community
PMST	Protected Matters Search Tool
PPE	Purpose Permit Envelope
RIWI Act	*Rights in Water and Irrigation Act 1914*
TEC	Threatened Ecological Community
UCL	Unallocated Crown Land

1. INTRODUCTION

Fortescue Limited (Fortescue) is proposing to clear native vegetation for the purpose of track construction to provide safe access to the Appaloosa Prospect. The proposed clearing is located approximately 41km northwest of the Township of Tom Price within the Pilbara bioregion of Western Australia (Figure 1).

This report and its appendices provide all the relevant information required under Part V, Section 51E of the *Environmental Protection Act 1986* (EP Act), to assess the proposed clearing. This includes updated baseline environmental data, a digital PPE (shapefile) and assessment against the 10 Clearing Principles.

Figure 1 General Location of the Appaloosa Tracks

1.1 Summary of Proposal

The key details of the Prospect and the proposed clearing are represented in Table 1.

Table 1 Key Details of the Proposed Clearing

Site Details			
Prospect Name	Appaloosa		
Description of Operation	Fortescue Limited (Fortescue) proposes to re-clear and maintain two previously established and rehabilitated access tracks to support exploration activities within the Appaloosa Prospect.		
Total Clearing Proposed	Indicative Disturbance Footprint of 0.65ha, within a Purpose Permit Envelope of 7.43ha.		
Tenement Details	**Tenement Details**	**Tenement Details**	**Tenement Details**
	ML246SA	Hamersley Iron Pty Limited	Live
Clearing Method	Clearing will be conducted mechanically using earth moving equipment		
Purpose of Clearing	Clearing is required to facilitate the construction of two access tracks, enabling safe and adequate access into the Appaloosa Prospect area.		

1.2 Proponent Details

Details of the relevant proponent are contained in Table 2 below.

Table 2 Key Details of the Proponent

Proponent Details				
Company Name	Fortescue Limited			
ACN	57 002 594 872			
Postal Address	256 St Georges Terrace, Perth, Western Australia 6000			
Key Contact	**Name**	Carmel Ritchie	**Phone**	08 6218 8888
	Position	Project Approvals Geologist	**Email**	carmel.ritchie@fortescue.com

1.3 Proposed Clearing Activities

Access to the proposed disturbance area will be via existing exploration tracks constructed by both Fortescue and other tenement holders in the region. To allow Fortescue to access its tenements in the area subject to this application, it is required to traverse Hamersley Iron's State Agreement tenure

Fortescue proposes to clear an Indicative Disturbance Footprint (IDF) of 0.65ha within a Purpose Permit Envelope (PPE) of 7.43ha (Figure 2). The purpose of this application is to enable the re-clearing and maintenance of two previously established and rehabilitated access tracks to support Fortescue's exploration activities within the Appaloosa Prospect.

The tracks subject to this application will be used by light vehicles, exploration drill rigs and semi-trailers carrying earth moving equipment.

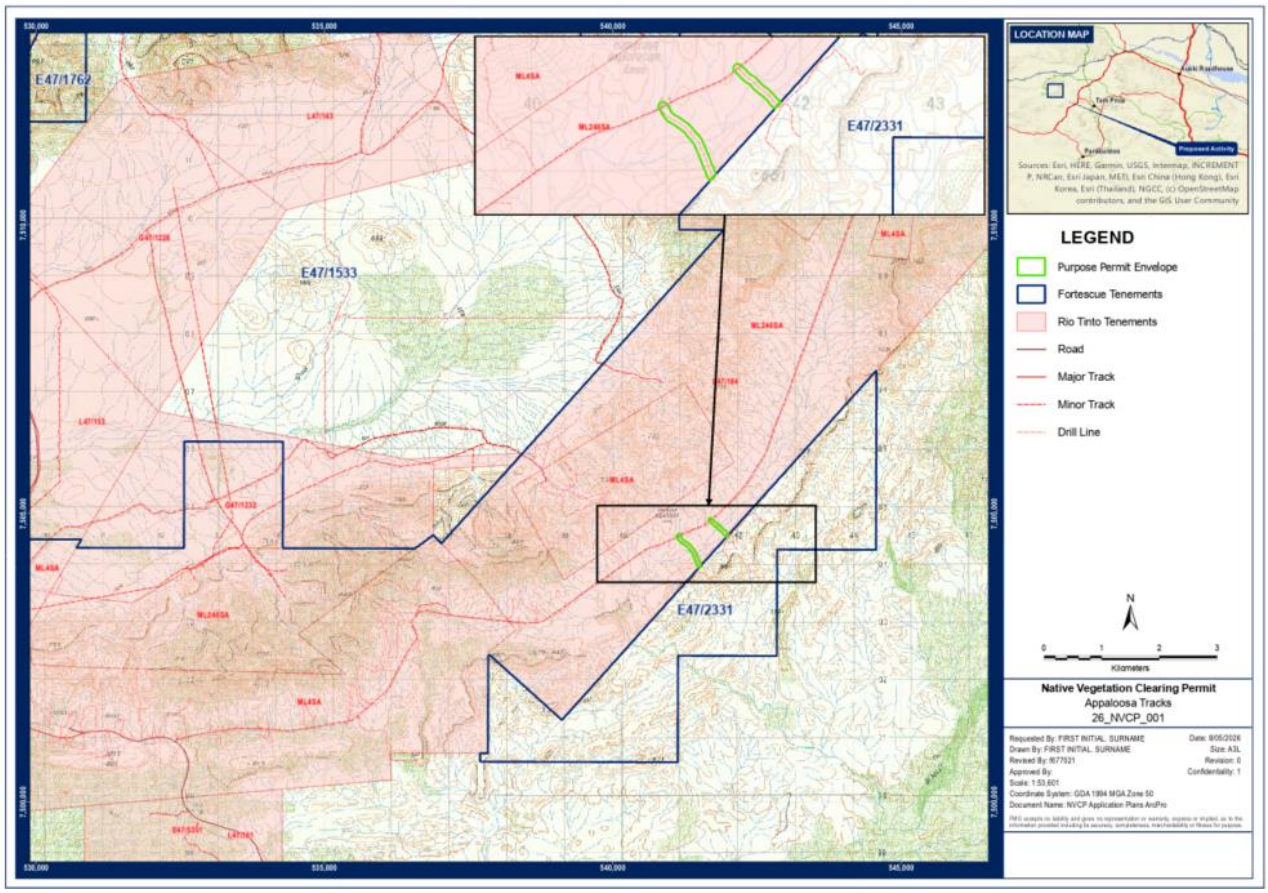

Figure 2 Purpose Permit Envelopes (PPE) of Appaloosa Tracks

1.4 Relevant Approvals

A Native Vegetation Clearing Permit is required, as the access tracks will be located on State Agreement tenure. Exemptions under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* do not apply.

2. BASELINE ENVIRONMENTAL DATA

2.1 Climate

The PPE is located within the Pilbara region, which includes two broad climatic zones. Coastal areas, as well as some higher rainfall inland areas, have a semi-desert tropical climate, which experience between 9 and 11 months of dry weather, with hot humid summers and warm winters. The remaining inland areas have a dry desert climate, typically with higher temperatures and lower rainfall, and often experience up to 12 months of dry weather, with hot dry summers and mild winters (van Vreeswyk, Payne, Leighton, & Hennig, 2004).

The Paraburdoo Bureau of Meteorology (The Bureau) station (Station Number 7185) has a record of monthly climate statistics from 1996-2026 for temperature and from 1974-2026 for rainfall (Figure 3). The monthly maximum temperatures range from 25.0°c to 40.8°c, with the hottest months being December and January. While monthly minimum temperatures range from 9.9°c to 26.2°c, with the coldest month being July. The average annual rainfall for Paraburdoo is 311.8mm, with February being the wettest (73.9mm) and October being the driest (3.8mm) month (The Bureau, 2022).

Tropical cyclones, many of which originate in the Timor Sea, along with local thunderstorms, produce much of the summer and early autumn rainfall. The driest months are in spring (September to October), and winter rainfall is highly variable, generally decreasing from the coast through to inland areas (Mckenzie & Bullen, 2009).

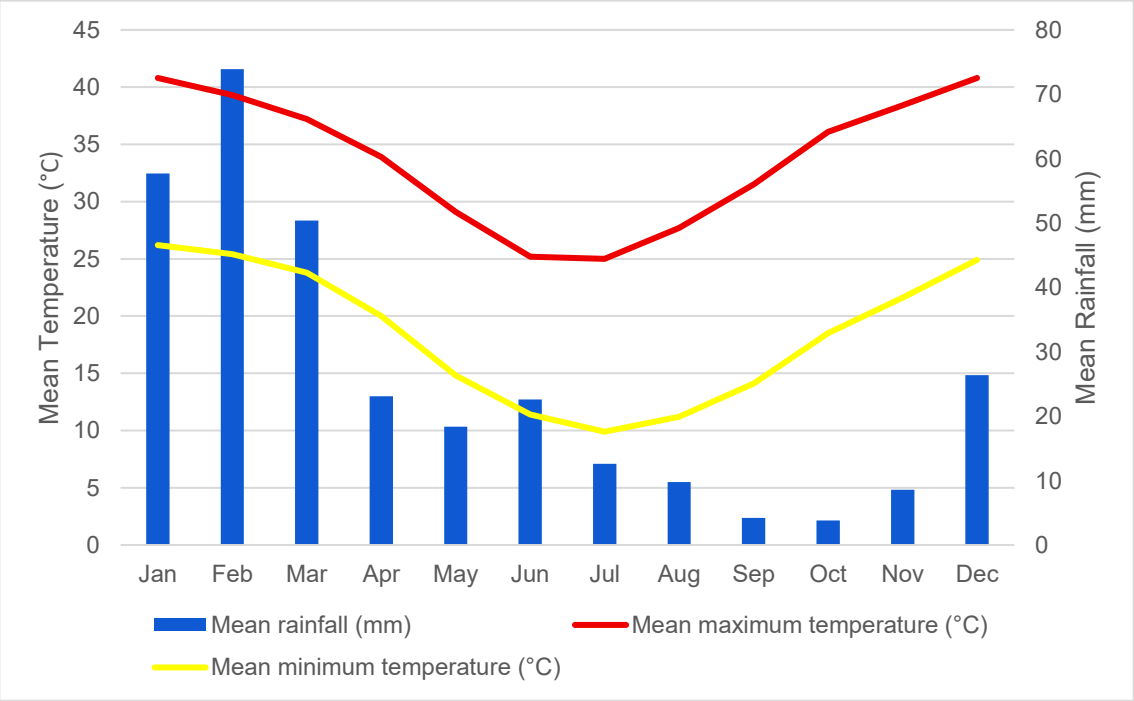

Figure 3 Climate Averages Paraburdoo Aero Station 7185

2.2 Existing Land Use

2.2.1 Land Tenure

The proposed disturbance occurs on State Agreement Mineral Lease 70/00246 (ML246SA), held by Hamersley Iron Pty Limited, a wholly owned subsidiary of Rio Tinto. Fortescue has an access agreement with Rio Tinto to conduct works on the tenements to re-establish and maintain two access tracks (Appendix 1).

This land is also leased to the Rocklea Pastoral Station. The main use of the land surrounding the PPE is pastoral activities and mineral exploration.

2.2.2 Native Title and Aboriginal Heritage

The proposed activities contained within the PPE lie across the Eastern Guruma Native Title Determination Area (Figure 4).

To ensure compliance with the *Aboriginal Heritage Act 1972* (AHA) Fortescue conducts both archaeological and ethnographic surveys over all land prior to the commencement of ground disturbing works. The area that is associated with the new disturbance under this NVCP has been fully heritage surveyed and no heritage sites were identified.

In line with Fortescue's obligations under the AHA, should sites of Aboriginal heritage significance be identified during works being undertaken in the disturbance area the proposed activity will be adjusted to avoid these sites. If deviations are required outside of the PPE area or in excess of the allowable disturbance under that NVCP, Fortescue will apply to the Department of Mines, Petroleum and Exploration (DMPE) for a new NVCP. This risk adverse approach has been discussed with the Department of Planning, Lands and Heritage (DPLH) and endorsed, as it provides a high level of protection for heritage sites.

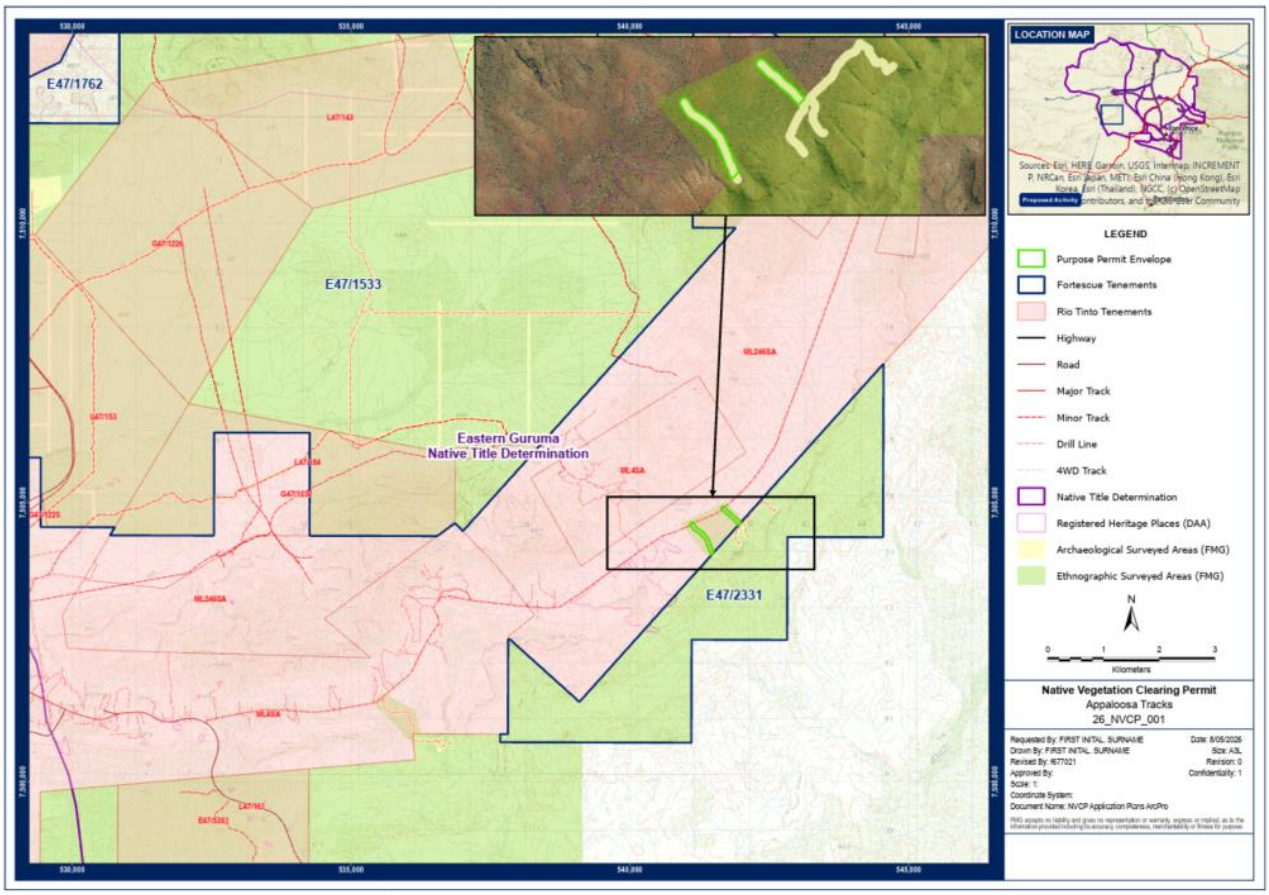

Figure 4 Heritage Sites and Survey Areas

2.3 Soil Landscapes

The Department of Primary Industries and Regional Development (DPIRD) have developed Technical Report 313; Soil-Landscape of Western Australia's Rangelands and Interior (Tille, 2006). This document describes the hierarchy of soil-landscape mapping units; each level is a subdivision of its preceding level. Western Australia is divided into five main Regions, which are then sub-divided into Provinces. Provinces are in turn sub-divided in zones, which are then sub-divided into systems.

Tille's (2006) document also provides a description of the soil-landscape regions, provinces and zones, while Vreeswyk et al. (2004) provides a description for the land systems in Technical Bulletin 92; An Inventory and Condition Survey of the Pilbara Region, Western Australia. The PPE is located within Western region, Fortescue province, Hamersley Plateaux zone and Newman systems (Table 3; Figure 5).

Table 3 Hierarchy of Soil-landscapes Intersecting the PPE

Hierarchy Level	Name	Description	Extent (ha)
Region	Western Region	Undulating plateaux (with plains, hills and ranges and coastal plains) on the rocks of the Yilgarn and Pilbara Cratons, Capricorn and Albany-Fraser Orogens and Carnarvon and Perth Basins. Deep sands (mostly red), Loamy earths (mostly red), Shallow loams (mostly red), Sandy duplexes, Stony soils and Sandy earths (mostly red). Mulga shrublands, spinifex grasslands and eucalypt woodlands/forests with acacia shrublands (and some mallee scrub, heaths and halophytic shrublands). Located in the west of Western Australia between Port Hedland, Israelite Bay, Cape Leeuwin and Exmouth.	120,140,000
Province	Fortescue Province	Hills and ranges (with stony plains and some alluvial plains and sandplains) on the volcanic, granitic and sedimentary rocks of the Pilbara Craton. Stony soils with Red loamy earths and Red shallow loams (and some Red/brown non-cracking clays, Red deep sandy duplexes and Red deep sands). Spinifex grasslands with kanji and snappy gum (and some mulga shrublands and tussock grasslands). Located in the Pilbara between Dampier, Port Hedland, Jigalong, Paraburdoo and Pannawonica.	16,005,000
Zone	Hamersley Plateaux Zone	Hills and dissected plateaux (with some stony plains and hardpan wash plains) on sedimentary and volcanic rocks of the Hamersley Basin with Stony soils, Red shallow loams and some Red/brown non-cracking clays and Red loamy earths.	4,445,000
System	Newman System	Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands.	1,458,000

The Newman Land System is a common and widespread system expanding across 14,580km^2. It is characteristic of ridges and plateaux landforms. The predominant surface geology is jaspilite, and the soils are primarily hard spinifex grasslands.

Clearing associated with the Project will result in the shallow (<0.3 m) disturbance of soils for track construction. Risks associated with acidic and metalliferous drainage, sodic and dispersive materials, and naturally occurring radioactive materials are not considered relevant to the Project. The PPE is classified as Extremely Low Probability for Acid Sulfate Soils. The potential occurrence of Acid Sulfate Soils across the PPE was inferred from CSIRO (2014) mapping provided by the Australian Soil Resource Information System (ASRIS).

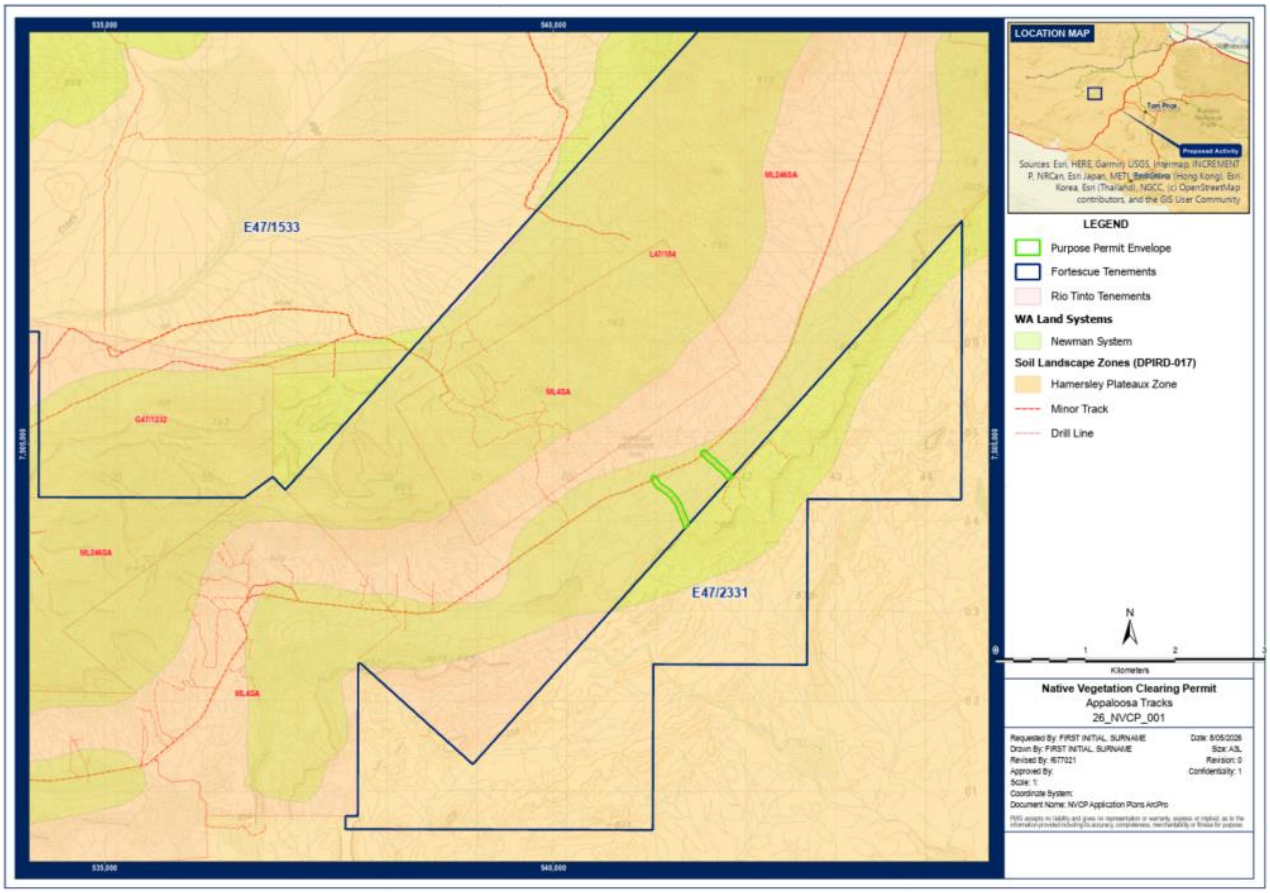

Figure 5 Location of PPE within the Newman System of the Hamersley Plateaux Zone

2.4 Flora and Vegetation

2.4.1 Interim Biogeographic Regionalisation for Australia

The PPE is located within the Pilbara biogeographic region of the Interim Biogeographic Regionalisation for Australia (IBRA). The Pilbara biogeographic region incorporates 17,831,892ha and includes four subregions: Chichester, Roebourne, Hamersley, and Fortescue Plains which are described in the 2002 Biodiversity Audit of Western Australia's 53 Biogeographical Subregions (McKenzie, May, & McKenna, Bioregional Summary of the 2002 Biodiversity Audit for WA, 2002). The PPE occurs entirely within the Hamersley subregion of the Pilbara bioregion (Figure 6).

The Hamersley subregion, as described by McKenzie et al. (Bioregional Summary of the 2002 Biodiversity Audit for WA, 2002), is the Southern section of the Pilbara Craton consisting of mountainous area of Proterozoic sedimentary ranges and plateaux, dissected by gorges (basalt, shale and dolerite). Mulga low woodland over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges.

The climate is Semi-desert tropical, average 300 mm rainfall, usually in summer cyclonic or thunderstorm events. Winter rain is not uncommon. Drainage into either the Fortescue (to the

north), the Ashburton to the south, or the Robe to the west. Subregional area is 6,215,092ha (McKenzie, May, & McKenna, Bioregional Summary of the 2002 Biodiversity Audit for WA, 2002).

2.4.2 Regional Vegetation Mapping

Vegetation association units have been mapped and described on a regional scale by Beard (1975) and updated by DPIRD (2012). These vegetation association units are broad scale descriptors and attempt to depict the native vegetation as it was presumed at the time of European settlement. The PPE intersects the Hammersley 82 vegetation association unit which is dominated by hummock grasslands and low tree steppes and the Hammersley 567 vegetation association unit which is characterised by low open hummock grasslands dominated by spinifex, typically occurring on stony plains, hillslopes, and upland areas associated with the Hamersley Range. The vegetation is generally sparse to moderately dense, with scattered shrubs and occasional low trees, commonly including species of *Acacia* and *Eucalyptus.* (Table 4;Figure 6)

Table 4 Beard Vegetation Units Intersecting the PPE

Association	Description	Pre-European Extent (ha)	Current Extent (ha)	Extent mapped within the Purpose Permit Envelope (ha)
Hammersley 82	Hummock grasslands, low tree steppe; snappy gum over *T. wiseana*	317,182	316,855	4.13
Hammersley 567	Low open hummock grassland dominated by spinifex, stony plains, hillslopes, and upload areas; shrubs, occasional low trees *(Acacia & Eucalyptus*)	1,458,000	1,456,000	3.30

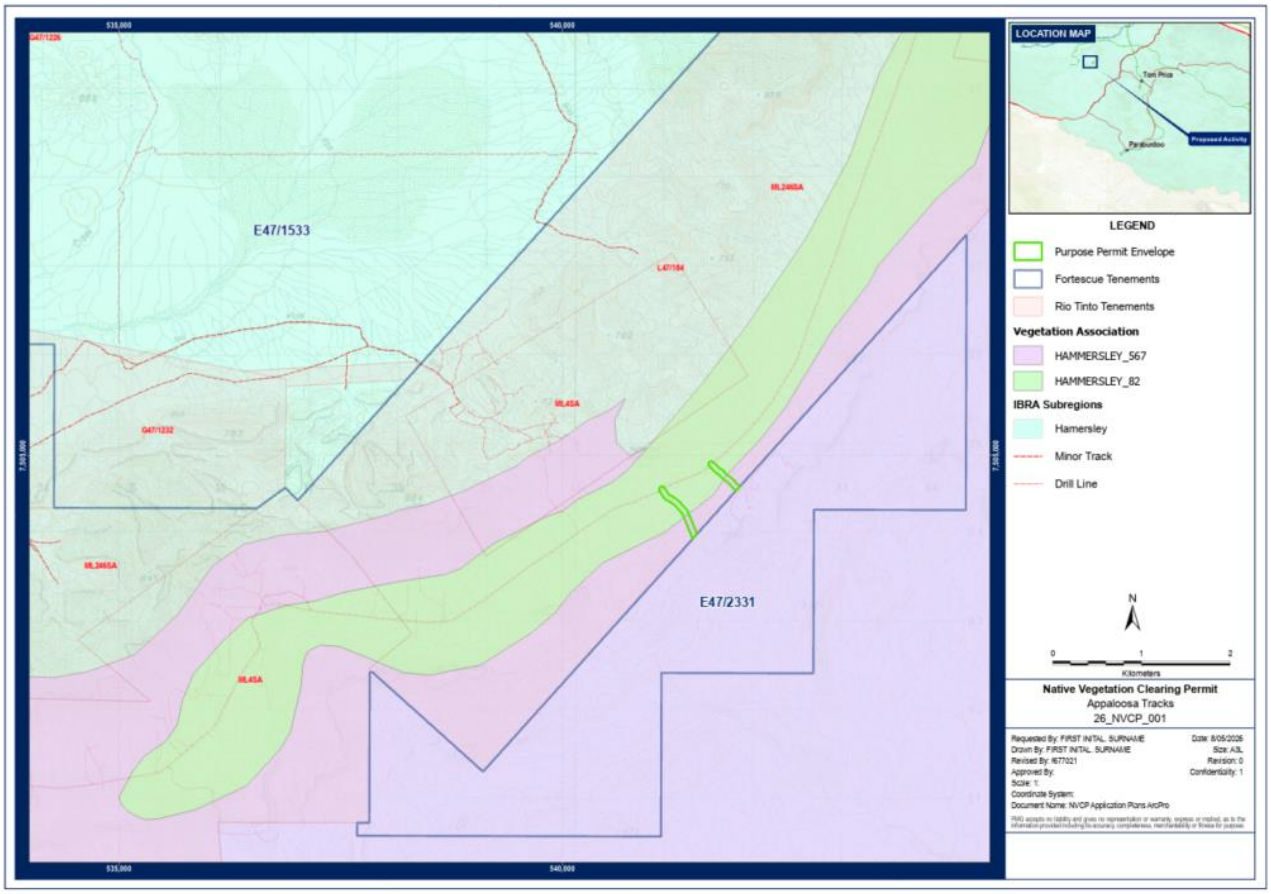

Figure 6 Location of the PPE within the Hamersley IBRA Subregion and the Vegetation Association Unit

2.4.3 Flora and Vegetation Surveys

A total of two flora and vegetation surveys have been conducted across the PPE area, one of which was conducted in the past three years.

In 2008 a Regional Flora and Vegetation Assessment (SO-AS-EN-0011) was undertaken by Coffey Environments, on behalf of Fortescue. In 2023 Ecoscape undertook Vegetation Health Monitoring (IO-RP-EN-0006) across the PPE.

As well as the above vegetation and flora surveys, a search of the Department of Biodiversity, Conservation and Attractions' (DBCA) Threatened and Priority Flora database (DBCA, 2021) and regional survey records was undertaken over a 20km radius from the PPE (Table 5).

2.4.4 Flora of Conservation Significance

A search of the Protected Matters Search Tool (PMST) database has been completed over the proposed disturbance footprint. The PMST identified one flora species that may occur within 20km of the disturbance footprint – *Thryptomene wittweri* – listed as Threatened by the DBCA. The DBCA lists skeletal red stony soils and breakaways and stony creek beds as preferred habitat. While this

soil type may be present in the Newman system, the closest record of *Thryptomene wittweri* to the disturbance area is 129km to the southeast.

A subsequent database search of Fortescue and Government records identified no records within the PPE. The results of the 20km desktop assessment are summarised in Table 5 and Figure 7.

Table 5 Conservation Significant Flora Identified within 20km of the PPE

Species Name	EPBC Act*	BC Act**	DBCA listed***	Recorded in Survey or database search
Thryptomene wittweri	Vulnerable	-	-	PMST Database Search
Hibiscus sp. Mt Brockman (E. Thoma ET 1354)	-	-	Priority 1	Government Database Search
Tetratheca butcheriana	-	-	Priority 1	Government Database Search
Oxalis sp. Pilbara (M.E. Trudgen 12725)	-	-	Priority 2	Government Database Search
Pentalepis trichodesmoides subsp. hispida	-	-	Priority 2	Government Database Search
Aristida jerichoensis var. subspinulifera	-	-	Priority 3	Government Database Search
Dampiera anonyma	-	-	Priority 3	Government Database Search
Eremophila magnifica subsp. velutina	-	-	Priority 3	Government Database Search
Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)	-	-	Priority 3	Government Database Search
Grevillea saxicola	-	-	Priority 3	Government Database Search
Indigofera rivularis	-	-	Priority 3	Government Database Search
Ptilotus subspinescens	-	-	Priority 3	Government Database Search
Rhagodia sp. Hamersley (M. Trudgen 17794)	-	-	Priority 3	Government Database Search
Sida sp. Hamersley Range (K. Newbey 10692)	-	-	Priority 3	Government Database Search
Vittadinia sp. Coondewanna Flats (S. van Leeuwen 4684)	-	-	Priority 3	Government Database Search
Acacia bromilowiana	-	-	Priority 4	Government Database Search
Eremophila magnifica subsp. magnifica	-	-	Priority 4	Government Database Search
Ptilotus mollis	-	-	Priority 4	Government Database Search
Sida sp. Barlee Range (S. van Leeuwen 1642)	-	-	Priority 4	Government Database Search

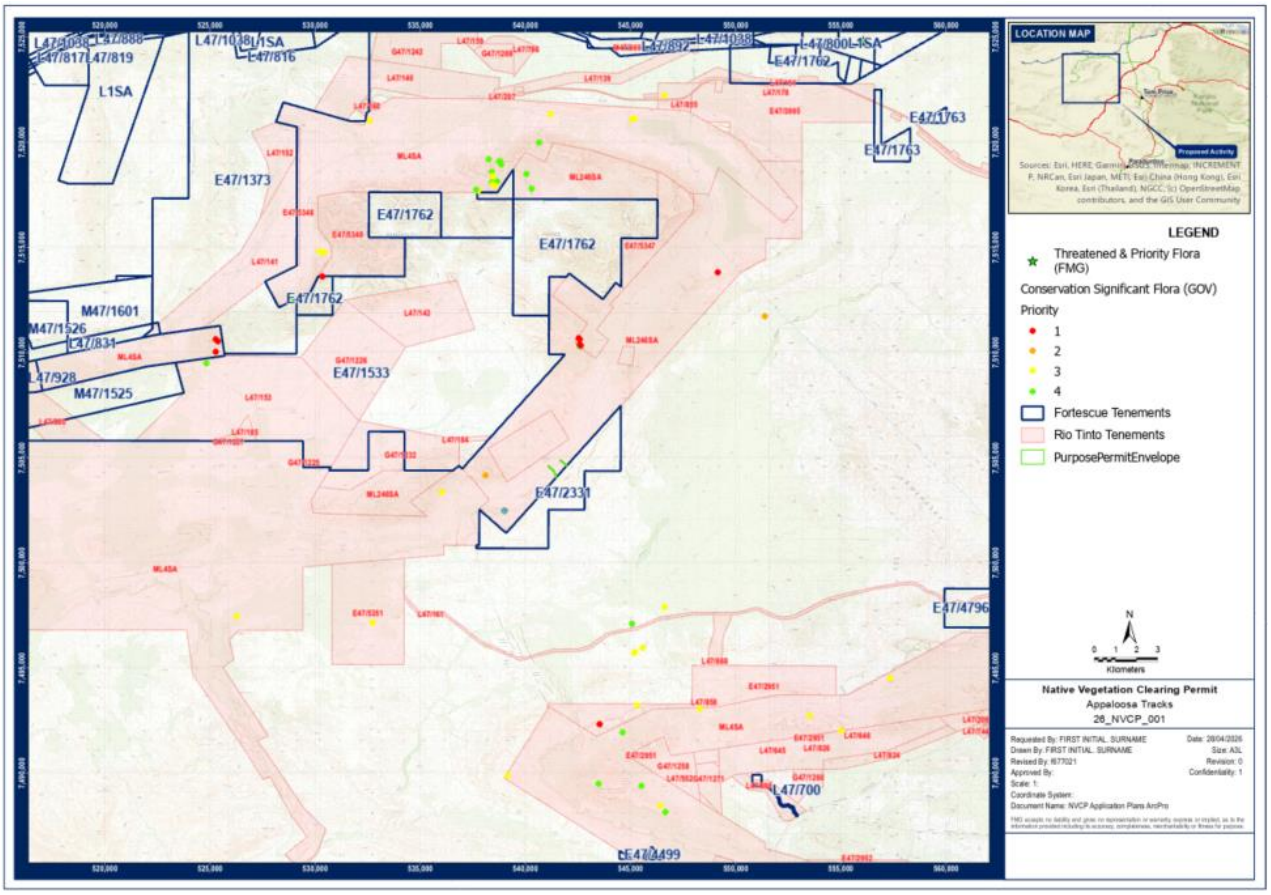

Figure 7 Conservation Significant Flora Identified within 20km of the PPE

2.4.5 Conservation Reserves and Significant Vegetation Communities

In Western Australia, a vegetation community can be classified as a Threatened Ecological Community (TEC) by the Western Australian Minister for Environment, based on the assessment and recommendation of the Threatened Species Scientific Committee. TECs that are listed to be of State conservation significance in Western Australia are considered to be Environmentally Sensitive Areas (ESA) under Part V of the EP Act.

Potential TECs that do not meet survey criteria are added to the Priority Ecological Community (PEC) list under Priority 1, 2 or 3. Ecological communities that are adequately known, are rare but not threatened, meet criteria for “Near Threatened”, or that have been recently removed from the threatened list, are placed in Priority 4. Conservation dependent ecological communities are placed in Priority 5.

The database searches reveal that the PPE does not occur within or intersect with any known ESA, TEC or PEC.

2.4.6 Groundwater Dependent Ecosystems

Groundwater Dependent Ecosystems (GDE) are ecosystems that require permanent or intermittent access to groundwater. GDEs are dependent on the presence of groundwater to meet some, or all, of their water requirement to maintain their communities of plants and animals, ecological processes and ecosystem service (Richardson, et al., 2011).

A review of the GDE Atlas found the PPE to occur within an area mapped as Low Potential GDE.

2.5 Vertebrate Fauna

2.5.1 Vertebrate Fauna Surveys

No Vertebrate Fauna surveys have been undertaken by Fortescue across the PPE. However, 7 Vertebrate Fauna Assessments (CP-AS-EN-0002, EW-AS-EN-0001, EX-AS-EN-0017, EX-AS-EN-0001, WH-AS-EN-0012, EW-AS-EN-0001 and 100-AS-EN-0019) have been undertaken by Ecologica Environment, Ecoscape and Coffey Environments, on behalf of Fortescue, within 15-20km to the north and north-west of the PPE.

A search of the Protected Matters Search Tool (PMST), DBCA's Threatened and Priority Flora database and regional survey records (DCCEEW, 2022; DBCA, 2021) was undertaken over a 20km radius from the PPE (Appendix 2).

2.5.2 Conservation Significant Fauna

A total of 18 vertebrate fauna species, listed as either threatened fauna (EPBC Act, BC Act Schedule) or as priority fauna (DBCA Priority list) have been recorded within or have the potential to occur within the 20km search area (Table 6 Conservation Significant Fauna Identified within 20km of the PPE; Figure 8). Of the 18 conservation-significant fauna species identified, none have previously been recorded within the PPE.

Table 6 Conservation Significant Fauna Identified within 20km of the PPE

Species Name	Conservation Status			Recorded in Survey or Database Search
	EPBC Act	BC Act	DBCA listed	
Birds				
Calidris ferruginea (Curlew Sandpiper)	Critically Endangered Migratory	Schedule 1	-	PMST Database Search
Pezoporus occidentalis (Night Parrot)	Critically Endangered	Schedule 1	-	PMST Database Search
Erythrotriorchis radiatus (Red Goshawk)	Endangered	Schedule 2	-	PMST Database Search
Rostratula australis (Australian Painted Snipe)	Endangered Migratory	Schedule 2	-	PMST Database Search

Polytelis alexandrae (Princess Parrot)	Vulnerable	Schedule 3	-	PMST Database Search
Aphelocephala leucopsis (Southern Whiteface)	Vulnerable	Schedule 3	-	PMST Database Search
Falco hypoleucos (Grey Falcon)	Vulnerable	Schedule 3		PMST Database Search
Calidris acuminata (Sharp-tailed Sandpiper)	Vulnerable Migratory	Schedule 3	-	PMST Database Search
Mammals				
Dasyurus hallucatus (Northern Quoll)	Endangered	Schedule 2	-	PMST Database Search
Macroderma gigas (Ghost Bat)	Vulnerable	Schedule 3	-	PMST Database Search, Government Database Search, Survey (EW-AS-EN-0001, EX-AS-EN-0017 & WH-AS-EN-0012)
Rhinonicteris aurantia (Pilbara Leaf-nosed Bat)	Vulnerable	Schedule 3	-	PMST Database Search, Government Database Search, Survey (100-AS-EN-0019, EX-AS-EN-0017 & WH-AS-EN-0012)
Leggadina lakedownensis (Northern short-tailed mouse)	-	-	P4	Government Database Search
Pseudomys chapmani (Western Pebble-mound Mouse)	-	-	P4	Government Database Search
Sminthopsis longicaudata (Long-tailed Dunnart)	-	-	P4	Government Database Search
Dasykaluta rosamondae (Little Red Kaluta)	-	-	Other	Survey (EX-AS-EN-0017)
Reptiles				
Liasis olivaceus barroni (Olive Python - Pilbara subspecies)	Vulnerable	Schedule 3	-	PMST Database Search, Government Database Search
Notoscincus butleri (Lined soil-crevice skink)	-	-	P4	Government Database Search
Varanus bushi (Pilbara Mulga Monitor)	-	-	Other	Survey (EX-AS-EN-0017)

Based on preferred habitat, species which are possible and likely to occur within the PPE are discussed below.

2.5.2.1 Northern Quoll (*Dasyurus hallucatus*)

Northern Quolls are broadly distributed across the Pilbara bioregion. Habitat considered critical to the survival of this species includes rocky gorges and escarpments, diverse eucalypt forests with hollow logs, and offshore islands (DCCEEW, 2005).

Although no Northern Quolls have been recorded within the PPE from Fortescue or Government surveys, the closest record is of a single individual that was recorded on motion cameras approximately 20km to the northwest. These records were obtained from motion cameras positioned within a gorge along a low ridgeline. No individuals were recorded during previous trapping undertaken within the survey area as part of baseline surveys (EW-AS-EN-0001).

Given that the proposed activities comprise the re-establishment of previously disturbed tracks, the proposed works will not have a significant impact on the conservation status or distribution of the Northen Quoll.

2.5.2.2 Ghost Bat (*Macroderma gigas*) and Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*)

The Ghost Bat and Pilbara Leaf-nosed Bat are mainly found in the arid zone near rock outcrops, and roosts in caves, mines and rock clefts. The main threat to the Ghost Bat and Pilbara Leaf-nosed Bat is the loss of its remaining roost sites (DCCEEW, 2022; DCCEEW, 2022).

The closest records of the Pilbara Leaf-nosed Bat and Ghost Bat obtained on behalf of Fortescue are located approximately 16.5km to the northwest, within E47/1373. These records were derived from surveys conducted by Ecologia Environment (EX-AS-EN-0017, WH-AS-EN-0012, and 100-AS-EN-0019) and Ecoscape Australia (EW-AS-EN-0001), with all six records based on acoustic detections.

A search of Government databases also identified five additional records of the Pilbara Leaf-nosed Bat and Ghost Bat from fauna surveys conducted approximately 2–6.5km southwest of the PPE.

Due to the lack of potential roosting caves and permanent water within the PPE, and that the proposed activities comprise the re-establishment of previously disturbed tracks, the proposed works will not have a significant impact on the conservation status or distribution of either of the species.

2.5.2.3 Western Pebble-mound Mouse (*Pseudomys chapmani*)

The Western Pebble-mound Mouse is widely distributed, but patchy within the region, occurring across the central and southern Pilbara and extends into smaller ranges of the Little Sandy Desert (Start, 2008). Western Pebble-mound mice inhabit gently sloping hills of rocky ranges where the ground is stony and vegetated by Spinifex with a sparse overstorey of eucalypts and scattered shrubs of *Senna*, *Acacia* and *Ptilotus*.

There are no Fortescue records of the Western Pebble-mound Mouse within 20km of the PPE. The closest records consist of two Government database entries located approximately 2.5km to the west, derived from a fauna survey conducted in 2015.

It is possible that the Western Pebble-mound Mouse may be found within the PPE. However, given that the proposed activities comprise the re-establishment of previously disturbed tracks, the

proposed works will not have a significant impact on the conservation status or distribution of the Western Pebble-mound Mouse.

2.5.2.4 Long-tailed Dunnart (*Sminthopsis longicaudata*)

The Long-tailed Dunnart is common in rocky screes, flat top hills and plateaus, sandstone ranges and breakaway habitat in the Pilbara, in spinifex hummock grasslands with sparse overstorey (Western Australian Museum , 2021).

There are no Fortescue records of the Long-tailed Dunnart within a 20km radius of the PPE. The nearest record was identified from Government database sources, documenting an individual captured approximately 19.5km to the northwest during a fauna survey.

Long-tailed Dunnarts may be found in the PPE, however given that the proposed activities comprise the re-establishment of previously disturbed tracks, the proposed works will not have a significant impact on the conservation status or distribution of this species.

2.5.2.5 Pilbara Olive Python (*Liasis olivaceus barroni*)

The Pilbara Olive Python is known to inhabit watercourses and areas of permanent water in rocky gorges and gullies (DCCEEW, 2022).

There are no Fortescue records of the Pilbara Olive Python within a 20km radius of the PPE. The nearest record was identified from Government database sources, located approximately 14.5km to the south and derived from a fauna survey conducted in 2012.

There is no potential for areas of permanent water within the PPE. The Pilbara Olive Python may move transiently through the application area especially during times of heavy rainfall when ephemeral drainage lines are flowing or contain pooled water. However, due to the small scale of clearing associated with this Permit, and the positioning of tracks away from watercourses, it is unlikely this project will adversely impact the conservation status or distribution of this species.

2.5.2.6 Lined Soil-crevice Skink (*Notoscincus butleri*)

The Lined Soil-crevice Skink is a small, fossorial skink endemic to the Pilbara region of Western Australia. It is typically associated with fine-textured soils, including sandy or loamy substrates on plains, lower slopes, and drainage areas. This species occupies soil crevices, beneath surface debris, and within friable ground, often in areas supporting hummock grasslands (*Triodia spp.*) with sparse shrub cover.

There are no Fortescue records of the Lined Soil-crevice Skink within a 20km radius of the PPE. The nearest record was identified from Government database sources, located approximately 19.5km to the northwest, where an individual was captured during a fauna survey conducted in 1998.

Due to the temporary and low-impact nature of the proposed disturbance, it is unlikely to adversely affect the conservation of this species.

2.5.3 Migratory and Marine Bird Species

Migratory and Marine bird species migrate to Australia along the East Asian-Australian Flyway and some of these bird species are known to use inland wetlands as their dominant habitat (Hansen et al. 2016). These bird species could potentially use suitable wetland habitats such as the Fortescue Marsh to migrate across the inland regions of Australia as they move to non-breeding sites in southern Australia. Migration pathways are not distinct, moving across any part of the Pilbara region and utilising any available wetland habitats.

- Australian Kestrel *(Falco cenchroides)*
- Barn Swallow (*Hirundo rustica*)
- Common Sandpiper (*Actitis hypoleucos*)
- Curlew Sandpiper (*Calidris ferruginea*)
- Fork-tailed Swift (*Apus pacificus*)
- Grey Wagtail (*Motacilla cinerea*)
- Oriental Plover (*Charadrius veredus*)
- Pectoral Sandpiper (*Calidris melanotos*)
- Rainbow Bee-eater (*Merops ornatus*)
- Sharp-tailed Sandpiper (*Calidris acuminata*)
- Swinhoe's Snipe *(Gallinago megala)*
- Whistling Kite *(Haliastur sphenurus)*
- Yellow Wagtail (*Motacilla flava*)

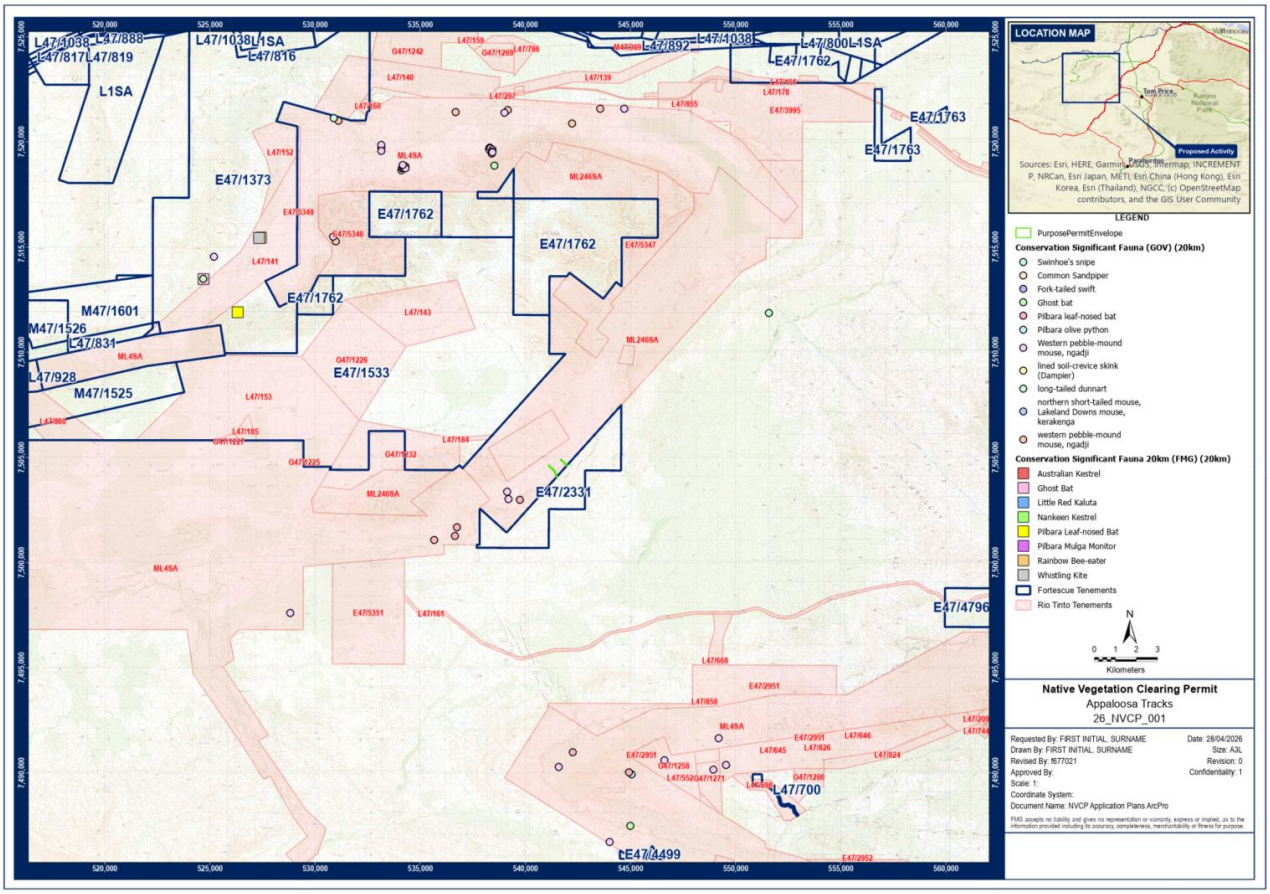

Figure 8 Conservation Significant Fauna Identified within 20km of the PPE

2.6 Hydrology and Hydrogeology

The PPE occurs within the Ashburton River Catchment and is not located within any designated Public Drinking Water Source Areas (PDWSA). The Ashburton River Catchment has an area of approximately 78,000km^2 (DWER, 2018).

Drainage lines in the region are ephemeral and generally only flow for short durations following rainfall events (Worley Parsons, 20212a). Intermittent flows normally occur during the wet season with long periods of no flow during the dry season.

The Upper Robe River, a major river, runs north-westerly approximately 32km to the north of the PPE (DWER, 2018). The PPE is largely situated on the hill tops at the head of local drainage catchments. However, a minor drainage line may be intercepted by clearing.

The PPE is located within the Pilbara Groundwater Area, a proclaimed groundwater area under the *Rights in Water and Irrigation Act 1914* (RIWI Act). This area has been identified as the Hamersley Basin, the hydrogeology is characterised by Precambrian rocks of which are principally volcanics, shales and iron formation. The Hamersley Combined Fractured Rock Aquifer contains groundwater within the fractures of these Precambrian rocks.

3. ENVIRONMENTAL IMPACTS AND MANAGEMENT

3.1 Flora and Vegetation

3.1.1 Potential Risk Pathways and Impacts

There has been considerable effort expended to ensure the proposed works associated with this application, will have as minimal an impact on flora and vegetation as practicable.

Fortescue has identified a number of potential risk pathways associated with the proposed works which may impact flora and vegetation, including:

- Unauthorised or over clearing;
- Unauthorised vehicle movement;
- Introduction of weed species via increased vehicle movement; and
- Increased dust emissions/deposition via vehicle movement.

These risk pathways have the potential to cause:

- Direct loss of vegetation;
- Direct loss of conservation significant flora; and
- Degradation of vegetation

3.1.2 Direct Loss of Vegetation

The Hammersley 567 and Hammersley 82 vegetation association units are not representative of a threatened or priority ecological community (TEC or PEC) and are widespread across the Hammersley IBRA sub-region. Fortescue proposes to clear an IDF of 0.65ha which equates to <0.01% of the Hammersley 567 and Hammersley 82 vegetation association units. The proposed low disturbance clearing is unlikely to pose significant threat to the vegetation communities within the PPE.

3.1.3 Direct Loss of Flora of Conservation Significance

There are no records of threatened flora species within the PPE. Additionally, no Fortescue records of threatened flora species have been identified within the 20km search area.

A search of Government databases identified 18 conservation significant flora species within 20km of the proposed disturbance area. The closest records include Priority 1 species *Hibiscus* sp. Mt Brockman (E. Thoma ET 1354), located approximately 3km to the south-west, and *Tetratheca butcheriana*, located approximately 5.5km to the north of the PPE. A singular plant of the Priority 2 species, *Oxalis* sp. Pilbara (M.E. Trudgen 12725), was recorded approximately 3km to the west of

the PPE. In addition, ten records of *Sida* sp. Hamersley Range (K. Newbey 10692) were identified approximately 5km to the west.

Given the size of the PPE and that the proposed activities comprise the re-establishment of previously disturbed tracks, it is unlikely to impact the conservation of any of these species.

3.1.4 Degradation of Vegetation

Degradation of vegetation can occur as a result of indirect impacts such as introduction of weeds and increase dust emissions.

Weeds

Clearing for development and increased movement of vehicles, including earth moving machinery may result in the spread of existing or the establishment of new, populations of weed species. Increased numbers of weeds can significantly impact vegetation community health as introduced species and native vegetation compete for water, nutrients and sunlight, resulting in degradation of vegetation.

Dust

Dust interferes with physiological processes such as transpiration in vegetation. Whilst background levels of dust are high in the Pilbara, elevated dust loads can be caused by vegetation clearing, ground disturbance and vehicle movement.

Research on the effects of dust deposition on vegetation health has been undertaken for Australian conditions. This research indicates that vegetation health is not impacted by the direct physical effects of mineral dust deposition until relatively high surface loads are experienced, at >7g/m^2/month (Doley, 2006).

Clearing and maintenance of access tracks associated with this application is likely to cause dust deposition on adjacent vegetation, however deposition levels will not approach the significant levels referred to in Doley (2006).

3.1.5 Management Measures

Based on the types of risk pathways identified, Fortescue has established relevant management action in order to minimise any impact on flora and vegetation (Table 7 Risk Pathway, Impacts & Management Measures for Flora and Vegetation). Overall, Fortescue will continue to implement management strategies in accordance with our Exploration Environmental Management Plan (E-PL-EN-0002 Rev 7d) to minimise impacts on and protect conservation significant flora and vegetation.

Table 7 Risk Pathway, Impacts & Management Measures for Flora and Vegetation

Risk Pathway and Impacts	Management Actions
• Unauthorised or over clearing resulting in unwanted direct loss of flora and vegetation • Unauthorised or over clearing resulting in direct loss of conservation significant flora	• Where significant flora and vegetation have been identified, ensure they are recorded in the Corporate GIS and Document Management System and appropriately flagged in the field. • Review the proposed ground disturbance and clearing against flora and vegetation data to avoid/minimise clearing of significant flora and vegetation. • Prior to conducting ground disturbance activities, ensure known locations of environmentally sensitive areas to be retained and protected from disturbance are identified on the ground by appropriate signage, fencing or flagging. • Ensure staff and contractors are aware of the location of significant flora and vegetation on site and their responsibility to ensure they are protected. • Conduct vegetation clearing in accordance with a permit issued under the Land Use Certificate Procedure 100-PR-TA-0001. Internal Land Use Certificates (LUC) will be required prior to commencement of activities, which may include: o pre-clearance checks for conservation significant flora and/or vegetation undertaken by suitably experienced personnel prior to ground disturbance, o areas to be cleared clearly delineated both on maps and on the ground, o post-clearing audits undertaken to assess compliance with internal permits.
• Unauthorised vehicle movement resulting in direct loss of flora and vegetation • Unauthorised vehicle movement resulting direct loss of conservation significant flora	• Vehicles will be confined to defined roads and access tracks. • All Threatened and Priority Flora are to be identified on the ground by appropriate flagging prior to clearing. • Ensure staff and contractors are aware of the location of significant flora and vegetation on site and their responsibility to ensure they are protected.
• Introduction of weed species via increased vehicle movement resulting in degradation of vegetation	• Vehicles will be confined to defined roads and access tracks. • Weed hygiene requirements are implemented for plant and equipment in identified weed risk areas and/or in areas where weed populations have been identified and high-risk activities are proposed to be undertaken in accordance with the Weed Management Plan 100-PL-EN-1017.
• Vehicle movements, ground disturbance and clearing activities leading to increased dust emissions/deposition resulting in degradation of vegetation	• Vehicles will be confined to defined roads and access tracks. • Vehicles will adhere to appropriate speed limits on all roads. • Dust suppression will be carried out regularly.

3.2 Terrestrial Fauna

3.2.1 Potential Risk Pathways and Impacts

There has been considerable effort expended to ensure the proposed works associated with this application, will have as minimal an impact on terrestrial fauna as practicable.

Fortescue has identified a number of potential risk pathways associated with the proposed works which may impact flora and vegetation, including:

- Unauthorised or over clearing;
- Unauthorised vehicle movement;
- Introduction of weed species via increased vehicle movement; and
- Fauna and vehicle interaction.

These risk pathways have the potential to cause:

- Direct loss of fauna;
- Direct loss of fauna habitat; and
- Habitat degradation and fragmentation.

3.2.2 Direct Loss of Fauna

Increased movement of vehicles, including earth moving machinery may result in fauna injury or death. Vehicles may strike fauna species on roads, particularly slow-moving animals or species that are easily startled. Vehicles travelling at night are more likely to strike native fauna when visibility is reduced and animals are more active. Species such as birds of prey are also likely to feed off dead carcases on roads and may also become victim to vehicle strike.

Fortescue keeps a record of all vehicle related fauna incidents. The species with the highest number of vehicle strikes at Fortescue's sites is the kangaroo, usually at dawn and dusk.

Due to their migratory habits, it is likely any migratory or protected marine birds would avoid clearing areas, disperse into the surrounding landscape which supports similar habitat and return once rehabilitation is complete. Therefore, it is unlikely the proposed activities would significantly impact on the conservation status of these species.

3.2.3 Direct Loss of Fauna Habitat

The Newman System is common and widespread across the Hamersley Plateaux Zone. Fortescue proposes to clear an IDF of 0.65ha which equates to <0.01% of the Newman System. The proposed

re-clearing of previously disturbed tracks is unlikely to pose significant threat to fauna habitat within the PPE.

3.2.4 Habitat Degradation and Fragmentation

Vegetation clearing has the potential to result in fragmentation of fauna habitat reducing the connectivity of fauna populations. Fauna with large home ranges, such as ground mammals, are likely to be most at risk of habitat fragmentation.

The proposed re-clearing of previously disturbed tracks is unlikely to pose significant threat to fauna habitat within the PPE. Management measures will be implemented to minimise clearing and maintain connectivity between fauna habitats.

Habitat degradation and fragmentation may also occur as a result of indirect impacts such as introduction of weeds.

Weeds

The introduction of weeds can lead to an indirect impact on native fauna by causing habitat degradation and fragmentation. Areas of dense weed infestation can reduce the ability of fauna to move through their habitat and impact on their ability to forage. Weed species palatable to feral herbivores may attract these animals to the area causing an increase in predation of native species, potential land degradation and further spreading of weed species either by movement of soil or in the animal's dung.

Through the implementation of weed hygiene management measures, it is not expected that the proposed works will result in significant spread of or the introduction of new weed populations.

3.2.5 Management Measures for Fauna

Based on the types of risk pathways identified, Fortescue has established relevant management action in order to minimise any impact on terrestrial fauna (Table 8 Risk Pathway, Impacts & Management Measures for Fauna). Overall, Fortescue will continue to implement management strategies in accordance with our Exploration Environmental Management Plan (E-PL-EN-0002 Rev 7d) to minimise impacts on and protect conservation significant fauna species and fauna habitat.

Table 8 Risk Pathway, Impacts & Management Measures for Fauna

Risk Pathway and Impacts	Management Actions
• Unauthorised or over clearing resulting in direct loss of fauna habitat	• Where conservation significant fauna and associated habitat has been identified, ensure they are recorded in the Corporate GIS and Document Management System.

• Unauthorised or over clearing resulting in habitat fragmentation	• Review the proposed ground disturbance and clearing against fauna data to avoid/minimise clearing of conservation significant fauna habitat.
	• Prior to conducting ground disturbance activities, ensure known locations of environmentally sensitive areas to be retained and protected from disturbance are identified on the ground by appropriate signage, fencing or flagging.
	• Ensure staff and contractors are provided with appropriate training to ensure conservation significant fauna and associated habitat are protected.
	• Conduct vegetation clearing in accordance with a permit issued under the Land Use Certificate Procedure 100-PR-TA-0001. Internal Land Use Certificates (LUC) will be required prior to commencement of activities, which may include:
	  ○ pre-clearance checks for conservation significant flora and/or vegetation undertaken by suitably experienced personnel prior to ground disturbance,
	  ○ areas to be cleared clearly delineated both on maps and on the ground,
	  ○ post-clearing audits undertaken to assess compliance with internal permits.

• Unauthorised vehicle movement resulting in resulting in direct loss of fauna habitat	• Vehicles will be confined to defined roads and access tracks.
• Unauthorised vehicle movement resulting in fauna strike	• Vehicles will be confined to defined roads and access tracks. • Vehicles will adhere to appropriate speed limits on all roads. • Vehicle movement will be restricted to daylight hours only. • Where injury or death has occurred to native fauna as a result of Fortescue exploration activities, investigate and report the incident. Causes of incidents will be determined and management procedures will be modified (as required), with measures taken to prevent re-occurrence of incidents.

3.3 Hydrology and Hydrogeology

3.3.1 Potential Risk Pathways and Impacts

The PPE is situated on the hill tops at the head of local drainage catchments, a minor drainage line may be intercepted by clearing.

Fortescue has identified a number of potential risk pathways associated with the proposed works which may impact surface water and groundwater, including:

- Hydrocarbon spills;
- Increased risk of flooding cause by unauthorised or over clearing; and
- Increased risk of erosion cause by unauthorised or over clearing.

These risk pathways have the potential to cause:

- Degradation to the quality of surface water and groundwater; and
- Changes to surface water flows.

3.3.2 Degradation to the Quality of Surface Water and Groundwater

There is potential for hydrocarbon spills from vehicle fuel leaks or other accidents. This could in turn result in contamination of surface or ground waters. The risk of hydrocarbon spills is low, and with the implementation of management measures impacts are considered minor.

3.3.3 Changes to Surface Water Flows

Flooding events have the potential to significantly alter surface water flows. The PPE crosses a minor drainage line. Given the disturbance proposed comprises clearing of a road 4-6m wide and occurs on the top of hills in the area, the clearing is unlikely to significantly alter surface water flows or raise the potential for flooding.

The Pilbara is an actively eroding landscape and as such, sediment loads are expected to be naturally high during surface water flow events. Clearing for this proposal will expose a small area of bare surface but this is unlikely to significantly increase erosion or sediment loads during surface water flow events.

3.3.4 Management Measures for Surface Water and Groundwater

Based on the types of risk pathways identified, Fortescue has established relevant management action in order to minimise any impact on surface water and groundwater (Table 9 Risk Pathway, Impacts & Management Measures for Fauna). Overall, Fortescue will continue to

implement management strategies in accordance with our Exploration Environmental Management Plan (E-PL-EN-0002 Rev 7d) to minimise impacts on and protect surface water and groundwater.

Table 9 Risk Pathway, Impacts & Management Measures for Fauna

Risk Pathway and Impacts	Management Actions
• Hydrocarbon spills resulting in the degradation of surface water and groundwater quality	• Hydrocarbons and chemicals will be transported, stored and handled in accordancewith the applicable legislation and Australian Standards. • Spill response equipment to be available in each vehicle.
• Increased risk of flooding and erosion cause by unauthorised or over clearing, resulting in changes to surface water flows	• Floodways will be constructed at drainage line crossings • Clearing of individual trees within the creek will be restricted to those absolutely necessary.

4. ASSESSMENT AGAINST THE 10 CLEARING PRINCIPLES

The EP Act includes 10 principles that provide decision makers with a guide on whether native vegetation should be cleared. The principles, outlined in 'Schedule 5 – Principles for Clearing Native Vegetation', are used as a comparative tool by DWER and DMPE in determining whether clearing activities are environmentally acceptable and capable of being appropriately managed. Table 10 assesses the proposed clearing against these Principles.

Table 10 Assessment against the 10 Clearing Principles

Principle	Assessment
a. Native vegetation should not be cleared if it comprises a high level of biological diversity.	**Not Likely to be at Variance** The vegetation within the PPE is unlikely to comprises a high level of biological diversity. The vegetation is not considered to be of conservation significance, no TECs, PECs, ESAs or GDEs were identified, and the Hammersley 82 and Hammersley 567 vegetation association units are very common across the Pilbara landscape. Additionally, no flora or fauna of conservation significance has been previously identified within the PPE.
b. Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous	**Not Likely to be at Variance** Newman Land System supports plateaux/ridges and spinifex grassland habitats. The fauna habitat within the PPE is therefore considered widespread across the Pilbara region and not considered critical habitat for fauna.
c. Native vegetation should not be cleared if it includes or is necessary for the continued existence of rare flora.	**Not Likely to be at Variance** Conservation significant flora species may potentially occur within the PPE. However, these species have been recorded over a wide range, some of which have been identified in more than one IBRA sub-bioregion.
d. Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.	**Not at Variance** The vegetation within the PPE is not representative of a Threatened Ecological Community.
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.	**Not at Variance** The Hamersley IBRA sub-bioregion remains at 99.5% of its pre-European extent. The PPE does not occur in an area that has been extensively cleared.
f. Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	**Not Likely to be at Variance** Only very minor drainage lines will be intercepted by the clearing. Surface drainage will be maintained.
g. Native vegetation should not be cleared if the clearing of the	**Not at Variance**

	vegetation is likely to cause appreciable land degradation.	The management measures detailed in previous sections will assist in reducing the likelihood of land degradation occurring as a result of clearing for this permit. These management measures include surface water and weed management measures and progressive rehabilitation to reduce the amount of cleared land potentially at risk of erosion.
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.	**Not at Variance** There are no nearby conservation areas. The nearest conservation area to the PPE is Karijini National Park approximately 50km east of the PPE.
i.	Native vegetation should not be cleared if the clearing of vegetation is likely to cause deterioration in the quality of surface or underground water.	**Not at Variance** Appropriate stormwater, vegetation clearing and materials handling management measures will be put in place to minimise the potential impact on water quality.
j.	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.	**Not at Variance** Given the tracks' position in the landscape, changes to surface water flows will be negligible.

5. CONCLUSION

In conclusion, the proposal is considered to be not at variance with Principles **d**, **e**, **g**, **h**, **i** and **j** and not likely to be at variance to principles **a**, **b**, **c** and **f**.

- The area to be cleared is located in common vegetation types, which are not representative of threatened ecological communities.
- This permit is for a small area of proposed disturbance (7.43ha).
- The clearing occurs on the top of hills and slopes and will not impact on surface water flow.
- No conservation estate occurs within close proximity to the clearing.
- The area is not an area of remnant vegetation.
- Management measures will reduce the impacts to as low as reasonably practicable.

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