Mindy South Iron Ore Mine

Application Number: 02757

Commencement Date: 23/01/2025

Status: Locked

1. About the project

1.1 Project details

1.1.1 Project title *

Mindy South Iron Ore Mine

1.1.2 Project industry type *

Mining

1.1.3 Project industry sub-type

Iron ore mine

1.1.4 Estimated start date *

01/02/2028

1.1.4 Estimated end date *

01/02/2048

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

Chichester Metals Pty Ltd (Chichester Metals), a wholly owned subsidiary of Fortescue Ltd (Fortescue), proposes to develop the Mindy South Iron Ore Mine (Proposed Action), a large tonnage iron ore mine located predominantly within the Mindy Mindy Creek catchment in the Hamersley Range, in the Pilbara Region of Western Australia. The deposit is located in the headwaters of Mindy Mindy Creek, approximately 55 km north-north-west of Newman, 70 km south of Fortescue's Cloudbreak Iron Ore Mine and 170 km south east of Tom Price. The regional location of the Proposed Action is shown in Attachment 1, Figure 1–1 (Project Location) p. 2.

The deposit will support a 40 million tonne per annum (Mtpa) mining operation with a Life of Mine (LoM) including a combined construction, operation and decommissioning phase of approximately 20 years. Ore will be mined via open cut methods, above and below the water table with ore processed on-site before transport by rail to Port Hedland via the proposed East Hamersley Railway. The East Hamersley Railway remains the subject of a separate Proposed Action and the proponent is The Pilbara Infrastructure Pty Ltd (TPI), another wholly owned subsidiary of Fortescue.

The Proposed Action is located within a 42,331 ha Proposed Action Area and it's implementation will require clearing of up to 12,487 hectare (ha) of native vegetation. The Proposed Action Area illustrated in Attachment 1, Figure 2–1 (Project Location) p. 7, mirrors the Mine Development Envelope (MDE) defined for referral of the Proposal under Western Australian Part IV *Environmental Protection Act, 1986.* The Proposed Action includes:

- The development of above and below water table (AWT/BWT) Open Cut Pits.
- Ore Processing Facility, to process ore from sources within the Proposed Action Area and from other mining projects.
- Storage of process waste (tailings) in an above ground Tailings Storage Facility, integrated waste landform and / or in-pit disposal.
- Ore, topsoil and subsoil stockpiles.
- Mine waste management including, but not limited to, waste rock landforms, in-pit storage, waste fines and low-grade ore stockpiles.
- Groundwater abstraction for water supply and to facilitate mining below the water table (mine dewatering).
- Aquifer supplementation, for the purpose of mitigating impacts to environmental receptors.
- Surplus water management and associated infrastructure (options include but are not limited to, aquifer supplementation, mine water use, aquifer re-injection, infiltration using in-pit disposal or ponds).
- Water supply sourced from third-party supplier and from other Fortescue sites.
- Supply of water to third party receiver and other Fortescue sites.
- Linear and ancillary infrastructure to support mining, including but not limited to mine access road, accommodation camp, aerodrome, power reticulation, access roads, pipelines, Waste Water Treatment Plants (WWTP), offices and workshops.
- Renewable energy infrastructure, including solar. Post-construction, the Proposed Action's power supply will align with Fortescue's decarbonisation goals, 'real zero by 2030' and be provided by a solar and renewable mix via Fortescue's Pilbara Energy Conect (PEC) network.

Pipeline corridors within and outside the Proposed Action Area will facilitate transfer of water supply, whether it is sourced from a third-party supplier, or other Fortescue site, or supplied to a third-party or other Fortescue site. Construction of pipelines and pipeline connections are included within the Indicative Disturbance Footprint (IDF), however pipelines outside of the Proposed Action Area, i.e. to third-party or other Fortescue sites, does not form part of this Proposed Action.

The referred East Hamersley Railway (**EPBC 2023/09542**) will connect the Proposed Action with Fortescue's existing Mainline Railway, allowing the transport of ore to Port Hedland. An extension of the original East Hamersley Rail Proposed Action to Mindy South, will be sought via an application under s156

of the EPBC Act. The railway, transmission power line, pipeline and other infrastructure associated with the railway corridor are not part of this referral.

Refer to Attachment 1, Section 2.4 (Exclusions), p. 8–9, for a high level summary of the East Hamersley Railway Proposed Action.

The relative locations of the referred East Hamersley Railway and the Nyidinghu Iron Ore Mine (**EPBC 2023/09543**) Proposed Actions, to the Proposed Action subject to this referral, are shown in Attachment 2, Figure 1.

Note that a full reference list is provided for sources cited within this referral form, in Attachment 1, Section 18 (References), pp. 146-151. Sources are not 'external sources' and predominatly comprise unpublished grey literature and therefore cannot be uploaded via the 'Attach Links' function.

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

No

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

The following Commonwealth and State legislation, regulations and policies apply to the Proposed Action. Further information in relation to relevant state and federal legislation, processes and policy is provided in Attachment 1, Section 4 (Legislative Context), p. 19.

Environment Protection and Biodiversity Conservation Act, 1999 (EPBC Act)

The EPBC Act is the primary Commonwealth legislation directed to protecting the environment in relation to Commonwealth land and controlling significant impacts on MNES. The EPBC Act is administered by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) and requires assessment and approval of actions that are likely to have a significant impact on a MNES. The EPBC Act also protects a range of shorebirds listed under the Japan Australia Migratory Bird Agreement (JAMBA) and China Australia Migratory Bird Agreement (CAMBA) Migratory Bird Agreements.

Environmental Protection Act, 1986 (WA) (EP Act)

The EP Act is the primary State legislation that governs environmental impact assessment and environmental protection in Western Australia. Significant proposals require referral to the Environmental Protection Authority (EPA) under Division 1, Part IV, s38 of the EP Act. The Proposed Action has the potential to result in significant impacts to the environment due to the clearing of native vegetation which supports State-listed species and communities and impacts associated with mine dewatering, water supply and changed surface hydrology. The Proposed Action has been referred to the EPA under s38 of the EP Act and is currently under assessment [Assessment no. 2492].

Iron Ore (FMG Chichester Pty Ltd) Agreement Act, 2006 (WA) (State Agreement)

The Proposed Action will be developed and operated under the Chichester State Agreement, which is administered by the Department of Jobs, Tourism, Science and Innovation (DJTSI) and Minister for State Development. Related mining activities will therefore not require approval under the Mining Act. However, the State Agreement requires that an approved Detailed Proposal be in place prior to implementing the Proposed Action.

The East Hamersley Rail (EHR) which has been referred to the EPA (Assessment no. 2375) by a different Proponent, The Pilbara Infrastructure Pty Ltd (TPI), will be pursued under separate State Agreement (*Railway and Port (The Pilbara Infrastructure Pty Ltd, Agreement Act, 2004*), and does not form part of this Proposed Action.

Mining Act, 1978 (WA) (Mining Act)

The Mining Act is the principle Western Australian legislation governing mining in the State. As the Proposed Action will be developed and regulated under a State Agreement, limited provisions of the Mining Act will apply, principally those related to the grant of mining tenure and tenure administration.

Rights in Water and Irrigation Act, 1914 (WA) (RIWI Act)

The RIWI Act, administered by the Department of Water and Environmental Regulation (DWER) authorises and regulates dewatering and water supply. Groundwater Abstraction Licenses under Section 5C of the RIWI Act require a Groundwater Operating Strategy (GOS) for large volumes of groundwater. The GOS will outline how groundwater will be abstracted, which users are impacted, including environmental values, and how these impacts are managed. DWER endorse the GOS as a condition of the 5C license. A Bed and Banks permit is required if work is being undertaken that obstructs, interferes, diverts or destroys the bed or banks of a watercourse or wetland.

Native Title Act, 1993 (Cwth)

The Proposed Action Area is located within the Nyiyaparli and Nyiyaparli #3 (WCD2018/008) Native Title Determination area.

Aboriginal Heritage Act, 1972 (WA) (AH Act)

The AH Act provides provisions for the preservation on behalf of the community of places and objects customarily used by or traditional to, the original inhabitants of Australia or their descendants, or associated

therewith, and for other purposes incidental thereto. Where the Proposal cannot avoid impacts to heritage places, applications will be made under s.18 of the AH Act or Cultural Heritage Management Plan under the ACH Act, as relevant in consultation with the Nyiyaparli People.

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

Chichester Metals has identified relevant government, Aboriginal Tradition Owners, pastoral / mining and community stakeholders with an interest in the Proposed Action and has commenced engagement with key stakeholders. Consultation with stakeholders will continue as the Proposed Action is developed and implemented. Consultation with Traditional Owners to date has been undertaken in the form of on-country visits and regular formal meetings. The following Aboriginal Tradition Owners have been identified:

- Nyiyaparli People and Elders.
- Karlka Nyiyaparli Aboriginal Corporation (KNAC) native title body corporation representing the Nyiyaparli and Nyiyaparli #3 Native Title Determination Area.

Attachment 1, Section 6 (Stakeholder engagement), pp. 25–29 and Table 6-1 (Key stakeholders identified in relation to the Proposed Action), pp. 26–28, provides further details of relevant stakeholders. A summary of stakeholder consultation undertaken to date is provided in Attachment 1, Section 6.3 (Stakeholder engagement) and Table 6-2 (Stakeholder consultation register), pp. 30–36.

As part of ongoing consultation with Traditional Owners, content provided in Attachment 1 (referral supporting document), was subject to a detailed review by KNAC in late 2024, with the understanding that the purpose of the document was to support referral of the Proposed Action (Proposal) under both the EP Act and the EPBC Act. The document provided as Attachment 1 has subsequently been published to the EPA website (January 2024), as part of the EP Act public consultation process.

1.3.1 Identity: Referring party

Privacy Notice:

Personal information means information or an opinion about an identified individual, or an individual who is reasonably identifiable.

By completing and submitting this form, you consent to the collection of all personal information contained in this form. If you are providing the personal information of other individuals in this form, please ensure you have their consent before doing so.

The Department of Climate Change, Energy, the Environment and Water (the department) collects your personal information (as defined by the Privacy Act 1988) through this platform for the purposes of enabling the department to consider your submission and contact you in relation to your submission. If you fail to provide some or all of the personal information requested on this platform (name and email address), the department will be unable to contact you to seek further information (if required) and subsequently may impact the consideration given to your submission.

Personal information may be disclosed to other Australian government agencies, persons or organisations where necessary for the above purposes, provided the disclosure is consistent with relevant laws, in particular the Privacy Act 1988 (Privacy Act). Your personal information will be used and stored in accordance with the Australian Privacy Principles.

See our Privacy Policy to learn more about accessing or correcting personal information or making a complaint. Alternatively, email us at privacy@awe.gov.au.

Confirm that you have read and understand this Privacy Notice *

1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details			
ABN/ACN	83109264262		
Organisation name	CHICHESTER METALS PTY LTD		
Organisation address	6004 WA		
Referring party details			
Name	Karen Fairweather		
Job title	Senior Environmental Advisor		
Phone	+61 8 6218 8888		
Email	karen.fairweather@fortescue.com		
Address	Ground Floor, 256 Saint Georges Terrace, Perth WA 6000		

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details			
ABN/ACN	83109264262		
Organisation name	CHICHESTER METALS PTY LTD		
Organisation address	6004 WA		
Person proposing to tak	e the action details		
Name	Jarrod Pittson		
Job title	Group Manager, Environment and Closure		
Phone	+61 8 6218 8888		
Email	jarrod.pittson@fortescue.com		
Address	Ground Floor, 256 Saint Georges Terrace, Perth WA 6000		

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

1.3.2.15 Are you proposing the action as part of a Trust? *

No

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

Fortescue has a demonstrated satisfactory public record of responsible environmental management. The company has met statutory requirements for environmental management and compliance reporting for mining and infrastructure projects it has implemented to date. Fortescue has a significant presence in the Pilbara, where it owns and operates the Eliwana, Cloudbreak, Christmas Creek and Solomon Iron Ore Mines, as well as large-scale dedicated Port and rail infrastructure.

Fortescue has not been subject to any convictions or proceedings under Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources. It will also hold, via various wholly owned subsidiaries, a 100% interest in the mining tenements upon which the Proposed Action will be implemented.

The Proposed Action will be implemented in accordance with Fortescue's ISO14001-aligned Environmental Management System (EMS) and Environment Policy. The Fortescue Environment Policy is provided as Attachment 3.

1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

Fortescue implements and maintains an Environmental Management System (EMS) that aligns with the principles of ISO14001 International Standard for Environmental Management Systems. Fortescue also maintains an Environment Policy that is publicly available on the Fortescue website (refer to Attachment 3). The Policy is endorsed by the Chief Executive Officer and the Board, stating that compliance with environmental laws and obligations is the minimum standard to which Fortescue will operate. It is the responsibility of all Fortescue employees and contractors to comply with the Environment Policy.

A schematic illustrating the 12 key elements and Plan–Do–Check–Act continuous improvement cycle underpinning Fortescue's Environmental Management System is provided in Attachment 1, Section 5 and Figure 5-1, p. 24.

The Fortescue environmental management framework is managed by environmental personnel, within corporate, site operations and projects. Position descriptions for relevant environmental personnel outlines the requirements to manage and implement Fortescue's EMS sitewide. Fortescue identifies the environmental aspects of its projects and operations through a systematic risk assessment process. Environmental risks are reviewed and updated annually with Environmental Improvement Plans (EIPs) established for high risk environmental aspects.

Operational controls (management plans, procedures, guidelines and work instructions) will be identified and developed for each environmental risk. Environmental management programs established at Operational and Project sites detail the implementation of operational controls and monitoring of its effectiveness. Effectiveness of critical environmental controls implemented for high risk environmental aspects are audited annually to identify improvement opportunities that may reduce the consequence or likelihood of occurrence of environmental risks or gaps.

All Fortescue employees, including supervisors, receive training during inductions outlining their responsibilities in relation to complying with the Environment Policy. Environmental personnel at Operational Sites and Projects deliver targeted training on specific regulatory requirements, site specific approval conditions and use of Fortescue management plans and procedures to ensure that personnel understand their environmental responsibilities when undertaking their day to day work.

Fortescue maintains a database that is accessible to all Fortescue personnel to capture, maintain and report details of non-compliances and corrective actions. Performance against compliance targets are monitored and internally reported to management on a monthly basis, ensuring that non-compliance triggers and adverse environmental trends are identified and appropriate corrective and remedial actions can be implemented. Monthly analysis and reporting to Senior Managers is undertaken for environmental incidents and actions completed. Regular biennial reporting of environmental performance to regulators is undertaken in accordance with the Statutory Reporting Schedule.

Environmental personnel at Operational and Project sites undertake monthly auditing against high risk environmental obligations (those obligations where non-compliance could potentially lead to environmental harm). Results of audits are internally reported to Senior Managers, with corrective actions arising from non-compliance captured, reviewed and reported.

Records relating to environmental management (including compliance, monitoring and reporting) are maintained within Fortescue in accordance with Fortescue's Record Keeping Policy.

Continuous improvement of Fortescue EMS and environmental performance is driven through the environmental governance processes within the business, including monthly reporting to Senior Managers, quarterly reporting to the Board and quarterly environmental management review meetings with Site and Head Office management. Improvement actions identified on Fortescue EMS effectiveness and environmental performance are identified through the Senior Environmental Management team.

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details			
ABN/ACN	83109264262		
Organisation name	CHICHESTER METALS PTY LTD		
Organisation address	6004 WA		
Proposed designated pro	oponent details		
Name	Jarrod Pittson		
Job title	Group Manager, Environment and Closure		
Phone	+61 8 6218 8888		
Email	jarrod.pittson@fortescue.com		
Address	Ground Floor, 256 Saint Georges Terrace, Perth WA 6000		

1.3.4 Identity: Summary of allocation

Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN	83109264262
Organisation name	CHICHESTER METALS PTY LTD
Organisation address	6004 WA
Representative's name	Karen Fairweather
Representative's job title	Senior Environmental Advisor
Phone	+61 8 6218 8888
Email	karen.fairweather@fortescue.com
Address	Ground Floor, 256 Saint Georges Terrace, Perth WA 6000

Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	83109264262
Organisation name	CHICHESTER METALS PTY LTD
Organisation address	6004 WA
Representative's name	Jarrod Pittson
Representative's job title	Group Manager, Environment and Closure
Phone	+61 8 6218 8888
Email	jarrod.pittson@fortescue.com
Address	Ground Floor, 256 Saint Georges Terrace, Perth WA 6000

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? *

No

1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

No

1.4.7 Has the department issued you with a credit note? *

No

1.4.9 Would you like to add a purchase order number to your invoice? *

No

1.4 Payment details: Payment allocation

1.4.11 Who would you like to allocate as the entity responsible for payment? *

Proposed designated proponent

2. Location

2.1 Project footprint



Project Area: 42401.90 Ha Disturbance Footprint: 12508.02 Ha

2.2 Footprint details

2.2.1 What is the address of the proposed action? *

Upper Mindy Mindy Crk, via Great Northern Highway & Rhodes Ridge Road, East Pilbara WA 6

2.2.2 Where is the primary jurisdiction of the proposed action? *

Western Australia

2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

2.2.5 What is the tenure of the action area relevant to the project area? *

The Proposed Action is located within the geographical bounds of the *Iron Ore (FMG Chichester Pty Ltd) State Agreement (Chichester State Agreement)* and on mining tenure held by Chichester Metals. Attachment 1, Section 4.5.2 and Table 4-1 (Tenement details), p. 20, summarises the relevant mining tenements (applied for or granted pursuant to the Western Australian *Mining Act, 1978*) upon which the Proposed Action will be undertaken. The Proposed Action area also partially intersects the southern portion of Marillana Station. The Marillana pastoral lease is administered under the *Land Administration Act, 1997*.

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area's environment.

The Proposed Action is located approximately 70 km south of Cloudbreak, 55 km north-north west of Newman and 35 km south of the proposed Nyidinghu Iron Ore Mine in the Pilbara Region of Western Australia. The Proposed Action Area is also entirely located within the Shire of East Pilbara, with Newman being the closest township. Underlying land uses include Marillana Station which hosts a beef cattle grazing enterprise on a pastoral lease. The Marillana Homestead lies outside the Proposed Action Area approximately 15 km north-west of the proposed aerodrome and water supply borefield. The Proposed Action is located within the Nyiyaparli and Nyiyaparli #3 Native Title determination area (WCD2018/008) and is the traditional lands of the Nyiyaparli People. Karlka Nyiyaparli Aboriginal Corporation (KNAC) is the Registered Native Title Body Corporate.

Road access to the Proposed Action will be provided by existing public access roads, including the Great Northern Highway, and a realignment and upgrade to the existing mine access road as agreed with stakeholders. Ore will be transported by rail from the Proposed Action to Port Hedland. The East Hamersley Railway will link both the Mindy South (Proposed Action) and Nyidinghu Iron Ore Mines with the Fortescue Mainline Railway. The Nyidinghu Iron Ore Mine and East Hamersley Railway are the subject of separate referrals under the EPBC Act, and do not form a part of this Proposed Action. The proposed Nyidinghu Iron Ore Mine was referred under s68 of the EPBC Act on 12 September 2023 and has been assigned unique reference number is **EPBC 2023/09543.** The proposed East Hamersley Railway was also referred under s68 of the EPBC Act on 12 September 2023 and has been assigned unique reference number is **EPBC 2023/09543.** The proposed East Hamersley Railway was also referred under s68 of the EPBC Act on 12 September 2023 and has been assigned unique reference number is **EPBC 2023/09543.** The proposed East Hamersley Railway was also referred under s68 of the EPBC Act on 12 September 2023 and has been assigned unique reference number is **EPBC 2023/09543.**

Attachment 2 shows the relative locations of the Nyidinghu Iron Ore Mine and East Hamersley Railway in relation to the Proposed Action.

The Proposed Action is flanked to the south by the proposed Rhodes Ridge Iron Ore Project (Rhodes Ridge). Rhodes Ridge represents a significant new mine that is to be developed as a Joint Venture by Rio Tinto Iron Ore (RTIO). Rhodes Ridge was referred under the EPBC Act in 2024 and is currently under assessment (EPBC 2024/09786).

The Proposed Action area lies within the southern portion of Marillana Station. Marillana Station is a BHPheld pastoral lease, which is sub-leased and operated by Karlka Nyiyaparli Aboriginal Corporation (KNAC) as a beef cattle enterprise. Assessed Vegetation Condition within the Proposed Action Area ranges from Excellent to Completely Degraded, with the most degraded vegetation generally located adjacent to cleared areas. Mulga Woodland (open/closed) north of the Mount Newman Railway in particular, is in a Poor to Completely Degraded condition. Areas of Marsh/Lake (low halophytic shrubland) which border the Fortescue Marshes approx. 20 km to the north of the northern water supply area (and outside) of the Proposed Action area, is also extensively degraded in many areas due to cattle grazing.

Fire is a regular occurrence in the Pilbara with large tracts of vegetation burning, particularly during the late dry season, start of the wet season. Recent fire (0–2 years) was evident across portions of the Proposed Action Area, however this did not pose a limitation to flora and fauna surveys.

Twenty-three introduced flora were recorded within the Proposed Action area, though none are listed as Declared Pests, or Weeds of National Significance (WoNS). Buffel Grass (Cenchrus ciliaris) is the most abundant weed found within the Proposed Action area, generally occurring along drainage lines and adjacent flats. The presence of Buffel Grass is likely associated with limited pastoral activity in the area and also by movement by wind, water or other animals.

Introduced fauna recorded within the Proposed Action Area include foxes, cats, cattle, camels, house mice and the domestic pigeon. Redclaw have not been detected within the Mindy Mindy Creek catchment, however they do occur within the adjacent Weeli Wolli Creek catchment (outside of the Proposed Action Area) in areas associated with permanent inundation / changed hydrological regimes, as a result of mine water discharge.

3.1.2 Describe any existing or proposed uses for the project area.

Pastoralism associated with Marillana Station is expected to continue during the Mindy South Life of Mine (LoM) and post-closure. Marillana Station is operated on a long-term pastoral lease, administered under the *Land Administration Act, 1997*. Consultation with Marillana Station lease-holders and operators will be undertaken with a view to minimising disruption to station operations during the LoM and to ensure post-closure outcomes meet agreed criteria and land use. Refer to Attachment 1, Section 3.7 (Land use and existing development) pp. 17–18 and Figure 3-2, p. 18 for further details.

The Proposed Action Area does not intersect any lands vested for conservation under the *Conservation and Land Management Act, 1984* (CALM) however it lies adjacent to the recently gazetted Fortescue Marsh Nature Reserve. The Fortescue Marshes, the largest ephemeral wetland in the Pilbara Region, lies approximately 15 km north east of the Proposed Action area's northern-most boundary. The Fortescue Marsh is listed on the Directory of Important Wetlands (DIWA) and has recognised habitat value for migratory birds, meeting several criteria required for nomination as a RAMSAR site. The Fortescue Marsh is being progressively vested for conservation, with the first land parcels adjacent the proposed Nyidinghu and Mindy South Iron Ore Mines gazetted in 2024. The southern portion of the Fortescue Marsh Nature Reserve extends to include Coondiner Pool located on the lower reach of Coondiner Creek. Coondiner Pool is a semi-permanent water feature recognised as providing a regionally important habitat refugia. The northern-most boundary of the Proposed Action lies adjacent the Fortescue Marsh Nature Reserve, and Coondiner Pool is located approx. 6 km north east of the northern water supply area, and outside of the Proposed Action boundary. Refer to Attachment 1, Section 3.6 (Conservation Reserves and Environmentally Sensitive Areas) pp. 17–18 and Figure 3-2, p. 18 for further details relating to lands managed for conservation.

The area surrounding the Proposed Action is a highly prospective iron ore mining district and there are numerous existing and proposed iron ore mines and associated ventures, in the broader southern Fortescue Marsh catchment. These include:

- BCI Minerals Limited Iron Valley Mine (operated by Mineral Resources Limited) located approximately 20 km west of the Proposed Action Area.
- Mineral Resources Limited Phils Creek Mine, approximately 30 km west of the Proposed Action Area.
- Rio Tinto Iron Ore (RTIO) (Hope Downs 1 Mine approximately 30 km west, Hope Downs 4 Mine approximately 10 km southeast, Yandicoogina Mine approximately 30 km west, Billiard South Mine approximately 15 km west of the Proposed Action Area).
- BHP mines (Yandi Mine approximately 40 km west, Marillana Area C Mine approximately 40 km west, South Flank Mine approximately 45 km west, Mt Whaleback approximately 40 km south east and Jimblebar Mine approximately 80 km south east of the Proposed Action Area).
- Roy Hill Iron Ore Mine operated by Roy Hill Iron Ore Pty Ltd approximately 40 km northeast of the Proposed Action Area.
- RTIO Joint Venture, Rhodes Ridge, adjacent the southern boundary of the Proposed Action *Proposed*
- Fortescue's Nyidinghu Iron Ore Mine and East Hamersley Railway Proposed.

Refer to Attachment 1, Section 3.7 (Land use and existing development), Figure 3-2, p. 18 for further details and Attachment 2 (Figure showing Proposed Action and relative location of Nyidingu Iron Ore Mine and East Hamersley Railway Proposed Actions). The proposed land use in relation to this development is the development of an iron ore mining and processing operation.

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

The Proposed Action area is bounded to the north and north-east by Fortescue Marshes, a Nationally important wetland. The Marsh has recognised important habitat value for Migratory Birds and meets several criteria that would facilitate nomination as a RAMSAR site. A number of other intermittent and ephemeral water features occur within or in the vicinity of the Proposed Action Area. These include intermittent creeks which represent major tributaries to Fortescue Marsh, namely Weeli Wolli, Mindy Mindy and Coondiner Creeks, and ephemeral water features in the form of freshwater claypans associated with the lower reach of Coondiner Creek and generally scattered in a fringe approximately 30 km wide from the southern edge of the Marsh.

The Mindy South deposit lies entirely within the upper catchment and directly adjacent the upper reach of Mindy Mindy Creek and Mindy Gorge. Mindy Gorge is a relatively unique natural landform feature in the Region, with recognised high environmental and cultural values. Cultural values associated with Mindy Mindy Creek and Mindy Gorge, particularly those associated with Inland Waters values, are of great significance to the Nyiyaparli People. The approx 3 km reach of upper Mindy Mindy Creek that hosts Mindy Gorge is recognised as a Priority Ecological Community (PEC) by the Department of Biodiversity, Conservation and Attractions (DBCA) and is described as, *'Riparian flora and plant communities of springs and river pools with high water permanence of the Pilbara Region'*. Mindy Gorge and a gorge system on a major western tributary to Mindy Mindy Creek, host extensive Groundwater Dependent Ecosystems (GDEs). The integrity of the GDEs within these areas is high, as they remain in relatively pristine condition and are unimpacted by development. The GDVs are characterised by a series of freshwater pools connected by dense Groundwater Dependent Vegetation (GDV). The presence of shallow groundwater and pools within these Gorges provide important dry season refugia for fauna and flora in the region. Further information is provided in Attachment 1, Section 8.3.5 (Significant vegetation), p. 51–52 and Section 12.3.3 (Cultural values), pp. 96–101.

Although the Proposed Action Area does not intersect with any lands or waters vested under the CALM Act and managed by the Department of Biodiversity, Conservation and Attractions (DBCA), it lies directly adjacent the recently gazetted Fortescue Marsh Nature Reserve. The Fortescue Marsh is being progressively added to the State conservation reserve with the first land parcels vested in 2024.

Weeli Wolli Creek and Weeli Wolli Spring, a regionally significant GDE, lies west and adjacent to the Mindy Mindy Creek catchment, and outside of the Proposed Action Area. Both Inland Waters features are of high cultural significance to Nyiyaparli and Banjmia People. Numerous large scale iron ore mines operate within the Weeli Wolli catchment, with mining operations upstream of the proposed Nyidinghu Iron Ore Mine actively discharging excess water to Weeli Wolli Creek and its tributaries. The natural hydrological regime of Weeli Wolli Creek is therefore modified, with significant reaches of the creek now flowing all year round. Disposal of excess mine water directly to Weeli Wolli Creek commenced in 2006.

Coondiner Creek catchment east of Mindy Mindy Creek has also been developed for iron ore mining, with a large historical mining operation located in the upper reach. The mid reach of Coondiner Creek adjacent the Proposed Action also hosts a series of GDEs with recognised environmental and cultural value (Nyiyaparli People).

The local area, south of Fortescue Marsh, is subject to disturbance by mining and other proposed and existing mining projects located in the surrounding area are detailed in Section 3.1.2 (Existing and proposed land uses) of the online form, above.

Attachment 1, Figure 2-1, p. 7 depicts the location of most of these operations in relation to the Mindy South Iron Ore Mine. And Attachment 2, Figure 1, shows the location of the Proposed Action relative to the Nyidinghu Iron Ore Mine and East Hamersley Railway Proposed Actions.

Unlike the adjacent Weeli Wolli and Coondiner Creek catchments, the Mindy Mindy Creek remains largely undeveloped. The exception being recent mining exploration across the broader catchment, and historical and current pastoralism associated with Marillana Station largely concentrated within the lower catchment

lower on the Fortescue Valley. Fortescue commenced mineral exploration activities within the Proposed Action area in 2009. Exploration has been undertaken in accordance with the *Mining Act, 1978* including progressive rehabilitation of disturbance areas.

A map showing the location of existing and proposed mining operations, land for conservation and land under pastoral leases within the Proposed Action Area and surrounds is provided in Attachment 1, Section 3.7 (Land use and existing development), Figure 3-2, p. 18.

3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The Proposed Action Area extends across the top of the Hamersley Range to the Fortescue Valley, with key supporting infrastructure necessarily located within areas of lower relief on the lower reaches of Mindy Mindy Creek, within the Fortescue Valley. The Hamersley Range is an extensive mountainous area with peaks of over 1,250 mAHD in height, while the Chichester Range is a plateau rising to over 500 mAHD north of the Marsh. The Hamersley Range contains a series of sub-parrallel step-sided gorges from incised drainage channels, often as strongly braided river channels, that drain from the high ground towards the north and into the Fortescue River Valley (CDM Smith, 2023). The Fortescue Valley which hosts the Fortescue Marsh, is an elongated alluvial plain trending west-northwest that lies between the two ranges. The topography of the Valley is gently undulating, with a maximum relief from the valley floor to the Chichester Range of approximately 50–200 m.

In a more local topographical context, the Proposed Action Area predominantly lies within the Mindy Mindy Creek catchment, with smaller portions sitting at the top of tributaries that drain east to Coondiner Creek. Mindy Mindy Creek generally flows from south to north, and is fed by numerous tributaries, before discharging via an alluvial fan into the Fortescue River Valley at the northern-most end. The region has surface elevations that range from 914 mAH near the south-western margin of the catchment, to 493 mAHD in the north.

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

<u>Flora</u>

Multiple detailed flora and vegetation surveys have been undertaken, between 2017 and 2024, to support the Proposed Action and adjacent Nyidinghu Iron Ore Mine and East Hamersley Railway Proposed Actions. Relevant survey effort will be consolidated to support Environmental Impact Assessment for the three Proposed Actions.

Consolidated survey data records a total of 523 vascular flora taxa from 211 genera and 63 families from the quadrats, relevé, opportunistic observations and searches for conservation-listed flora) (Ecoscape, 2024b). A relatively small proportion of the total flora inventory (4.39%) were introduced species, reflecting the low to moderate level of disturbance in the survey area. A total of 25 species (4.78%) could not be identified at the species level due to a lack of key reproductive parts like flowers or seeds, which are needed for precise identification. None of the unidentified plants however resembled any conservation-listed species found in the database searches (Ecoscape, 2024b).

Several populations of a MNES Threatened flora species, *Seringia exastia*, listed under the EPBC Act as Critically Endangered, have been recorded within the Proposed Action Area. However, as a result of a recent taxonomic study (Bink et al, 2020) the common and widespread *Seringia elliptica* and *Seringia exastia* have been identified as the same species and synonymised under the earliest taxonomic name, *Seringia exastia*. *Seringia exastia* is therefore now understood to be widely distributed throughout the Pilbara, central WA, Northern Territory and South Australia. It has since been de-listed from the Western Australian *Biodiversity Conservation Act, 2016*.

No Threatened Ecological Communities (TECs) listed under the EPBC Act occur within the Proposed Action Area.

Further details of survey effort expended and the baseline flora knowledge base are provided in Attachment 1, Section 8.3, pp. 42–44 and Section 8.3.6 and Figure 8-3, pp. 52–54.

<u>Fauna</u>

Multiple detailed and targeted terrestrial vertebrate fauna surveys have been undertaken across a broad survey area south of Fortescue Marsh, encompassing the Nyidinghu, East Hamersley Rail and Mindy South Proposed Actions, with survey effort to be consolidated into a single East Hamersley Terrestrial Fauna survey report. A baseline conservation significant fauna monitoring program also commenced in 2022 to support future management.

Terrestrial fauna surveys within the southern portion of the Proposed Action Area and surrounds have recorded a total of 194 fauna species, including 27 native mammals, 88 birds, 70 native reptiles and two native amphibian species. Five species confirmed (recorded) within the survey area are considered conservation significant species listed under the EPBC Act and therefore MNES. These include the Northern Quoll (*Dasyurus hallucatus*) and Southern Giant Petrel (*Macronectes giganteus*) listed Vulnerable and the Ghost Bat (*Macroderma gigas*), Pilbara Leaf-nosed Bat (*Rhinoicteris aurantia*) and Pilbara Olive Python (*Liasis olivaceus barroni*) listed as Vulnerable. Though recorded, the Southern Giant Petrel has been excluded from consideration, as the Proposed Action Area and surrounds are outside of the species usual range and there is only a single record indicating a rare occurrence where an individual may have strayed off course.

A further seven species have either been recorded within proximity to the Proposed Action Area and are considerered to have the potential to occur, as the area is within their usual range and there is potential habitat available within the Proposed Action Area. These species include:

- Grey Falcon (*Falco hypoleucos*, Vulnerable)
- Night Parrot (*Pezoporus occidentalis*, Endangered)
- Southern Whiteface (Aphelocephala leucopsis)
- Australian Painted Snipe (Rostratula australis, Endangered)

- Common Greenshank (Tringa nebularia)
- Curlew Sandpiper (Calidris ferruginea)
- Sharp-tailed Sandpiper (Calidris acuminata).

Seventeen bird species listed as Migratory have been recorded, or have the potential to occur within the Proposed Action Area. These include several Threatened species (listed above, with dual Threatened and Migratory status) and the following:

- Caspian Tern (Hydroprogne caspia)
- Southern Giant Petrel (Macronectes giganteus)
- Wood Sandpiper (Tringa glareola)
- Common Sandpiper (Actitis hypoleucos)
- Common Redshank (Tringa tetanus)
- Fork-tailed Swift (Apus pacificus)
- Osprey (Pandion haliaetus)
- Glossy Ibis (Plegadis falcinellus)
- Long-toed Stint (Calidris subminuta)
- Red-necked Stint (Calidris ruficollis)
- Marsh Sandpiper (Tringa stagnatilis)
- Pectoral Sandpiper (Calidris melanotos)
- Oriental Plover (Charadrius veredus)
- Gull-billed Tern (Gelochelidon nilotica).

In addition, three common, widely-distributed fish species, the Spangled perch (*Leiopotherapon unicolor*), Western rainbowfish (*Melanotaenia australis*) and Pilbara tandan (*Neosilurus hyrtlii*) have been recorded in both Weeli Wolli and Mindy Mindy Creek during aquatic ecology surveys undertaken between 2023 and 2024. Further information regarding aquatic species found within the Proposed Action Area and surrounds is provided in Attachment 1, Section 9.3.5, pp. 75–77.

Ten fauna habitats (excluding cleared areas) have been identified and mapped within the Proposed Action Area. Some habitats mapped within Marillana Station, were noted as being in a degraded condition as a result of widespread cattle grazing (ecologia, 2024). Of the habitats within the Proposed Action Area, the 'Rocky Escarpments / Ridges / Mesa habitat' provides some of the most value for conservation significant fauna. Although it forms part of the broader Hills / Ranges / Plateaux habitat; it has been mapped separately due to the presence of microhabitats such as crevices, overhangs, cavities, and caves (ecologia, 2024). These microhabitats have the potential to be used as denning habitat by the Northern Quoll, roosting habitat by the Pilbara Leaf-nosed Bat and Ghost Bat, and may provide critical habitat for the Pilbara Olive Python, particularly when occurring near Drainage Line / River / Creek (major) habitat intersecting 'Hills / Ranges / Plateaux habitat'.

The Drainage Line / River / Creek (major) habitat and associated Gorges/Gullies habitat also provide high value habitat for terrestrial and aquatic fauna, including conservation significant fauna, with ecologically valuable Groundwater Dependent Ecosystems (GDEs) hosting diverse microhabitats in the form of persistent pools surrounded by rocky habitat and dense vegetation. These systems and the habitats they support are notably represented within Mindy Gorge (which coincides with the Western Australian (WA) Department of Biodiveristy, Conservation and Attractions (DBCA) defined Priority Ecological Community (PEC)), and another Gorge / GDE system on a major western tributary to Mindy Mindy Creek, colloquially referred to as 'Atalanta'.

It's noted that Attachment 1 - Mindy South Iron Ore Mine - section 38 and EPBC referral - supporting document, Section 9 (Terrestrial Fauna), pp. 57–81, was prepared on the basis of the Stantec (2024a) survey report, which did not extend to the northern-most portion of the Proposed Action Area that lies within the Fortescue Valley. Consolidated survey data now shows that the Proposed Action Area intersects a small

extent (<5 ha) of mapped Longitudinal Sand Dunes habitat located on the northern edge of the Fortescue Valley Sand Dunes PEC buffer. The following fauna habitats have been mapped within the Proposed Action Area:

Drainage Line/River/Creek (major) (644.2 ha); Drainage Line/River/Creek (minor) (568.4 ha); Gorges/Gullys (2,931.0 ha); Hills/Ranges/Plateaux (5705.1 ha); Hummock Grassland (20,449.3 ha); Longitudinal Sand Dunes (4.7 ha); Plain (alluvial) (195.3 ha); Plain (stony/gibber) (73.9 ha); Rocky Escarpments (Ridges/Mesa/Cliffs/Outcrops/Breakaways) (2,998.1 ha); Woodland (open) (7626.7 ha); Cleared (243.2 ha).

Two introduced mammalian predators (cats / foxes) have been recorded within, or in close proximity to the Proposed Action Area. Other recorded introduced species which are known to compete with native species include camels, European cattle, rabbit, house mouse and domestic pidgeon. Redclaw (*Cherax quadricarinatus*), a nonnative, crustacean (invertebrate) occurs in permanently inundated reaches of the adjacent Weeli Wolli Creek. There is widespread evidence of native dingoes across the study area.

Beef cattle are grazed across the northern portions of the Proposed Action within the Fortescue Valley and surrounds, as part of the Marillana Station pastoral enterprise, though areas are preferentially grazed as evidenced by vegetation condition assessments.

Fauna survey effort and outcomes are further detailed in Attachment 1, Section 9, pp. 58–80. Figures provided in Attachment 1, namely Figure 9-1 (Mapped fauna habitat) and Figure 9-2 (Significant Terrestrial Fauna), pp. 66 and 74 respectively, further illustrate the survey findings.

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

The Proposed Action Area is located within the Pilbara Bioregion as described by the Interim Biogeographic Regionalisation for Australia (IBRA). The Proposed Action Area predominantly lies within the Hamersley subregion (PIL3), with a lesser extent in the north, lying within the Fortescue Plains subregion (PIL2). The Hamersley subregion is a mountainous region characterised by ranges and plateaux and dissected by deeply incised gorge systems in the Hamersley Range. Low Mulga woodland over bunch grasses occurs on fine textured soils in valley floors and Snappy Gum over spinifex on skeletal soils of the ranges (Kendrick, 2002). The Fortescue Plains subregion is characterised by alluvial plains, river frontages, extensive salt marsh with mulga-bunch grass and short grass communities on alluvial plains in the east (Kendrick, 2002). Deeply incised gorge systems characterise the western (lower) part of the drainage with river gum woodlands fringing the drainage lines (Kendrick, 2002).

Within the Fortescue Valley, soils on the valley flats and plains are typically characterised by deep redbrown loams comprised of Quaternary alluvium and colluvium materials. On the upper plains, most soils are hardsetting with surface cover commonly consisting of a stony mulch of coarse angular fragments and fine ironstone segregations (GHD, 2011, cited in AECOM Australia, 2012). The Proposed Action Area intercepts eight broadly mapped soil - landscape systems (DPIRD-027), with the majority of the Hamersley Range mapped as the Newman system, described as rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands. Lesser portions within the Hamersley Range are mapped as the Platform system, described as Dissected slopes and raised plains supporting shrubby hard spinifex grasslands and the Spearhole system, described as gently undulating gravelly hardpan plains and dissected slopes supporting groved mulga shrublands and hard spinifex. Five broadly mapped soil - landscape systems extend across northern Proposed Action Area within the Fortescue Valley. These include the:

- Divide system, described as gently undulating sandplains with minor dunes, supporting hard spinifex hummock grasslands with numerous shrubs.
- Urandy system, described as stony plains, alluvial plains and drainage lines supporting shrubby soft spinifex grasslands.
- Fan system, described as washplains and gilgai plains supporting groved mulga tall shrublands and minor tussock grasslands.
- Marillana system, described as gravelly plains with large drainage foci and unchannelled drainage tracts supporting snakewood shrublands and grassy mulga shrublands.
- Adrian system, described as stony plains and low silcrete hills supporting hard spinifex grasslands.

Broad-scale regional vegetation units have been defined at a broad-scale by Beard (1975) based on landform, soils and topographical characteristics and later refined by Shepherd et. al. (2002). Three Vegetation Associations intersect the Proposed Action Area, however the majority of the Proposed Action Area intersects Vegetation Association 29. Attachment 1, Section 4.1.2, Table 6, p. 22 provides further detail.

Detailed flora and vegetation surveys of the southern portion of the Proposed Action Area have recorded 19 vegetation types (Ecoscape, 2024b). Additional vegetation types have been mapped across the northern portion of the Proposed Action Area during surveys originally undertaken to support the proposed Nyidinghu Iron Ore Mine (Ecoscape, 2024c). Survey effort undertaken in areas south and west of Fortescue Marsh will be consolidated to support impact assessment. The majority of mapped vegetation types are common and regularly encountered in the Pilbara, with vegetation broadly characterised by extensive areas of spinifex and scattered small trees, with a greater density of trees associated with creek line riparian zones.

The Proposed Action Area and surrounds support vegetation defined by EPA (2016a) as having 'other significance'. These include Groundwater Dependent Vegetation (GDV) and banded Mulga woodland characterised as Sheetflow Dependent Vegetation (SFDV). Groundwater Dependent Vegetation within the Proposed Action Area is generally associated with creek line riparian zones. In some of the steeper catchments of Mindy Mindy Creek that lie within the Hamersley Range, GDVs are associated with incised channels and gorge systems and persistent pools Groundwater Dependent Ecosystems (GDEs), e.g. Mindy Gorge.

Mindy Gorge in the upper reach of Mindy Mindy Creek is listed (by DBCA) as a Priority 2, Priority Ecological Community (PEC), described as, '*Riparian flora and plant communities of springs and river pools with high water permanence of the Pilbara Region*'. Mindy Gorge is a constrained channel system which hosts an extensive GDE in the form of a series of interconnected groundwater dependent pools and vegetation. Mapped vegetation type EcAtlc is considered representative of the PEC (19.24 ha) and is characterised by *Melaleuca argentea* (an obligate phreatophyte) and E*ucaplyptus camaldulensis subsp. refulgens*, as well as groundcover species *Imperata cylindrica, Cladium procerum, Schoenus falcatus and Fimbristylis sieberiana*. The aforementioned groundcover species are also known to be restricted to areas of permanent water in the Pilbara (DBCA, 2023). Groundwater Dependent Ecosystems and persistent pools within the Mindy Mindy Creek catchment provide important refugia habitat for terrestrial and aquatic fauna in dry times.

Information summarising mapped local vegetation and vegetation of 'other significance' is provided in Attachment 1, Sections 8.3.4 and Section 8.3.5, pp. 47–52 and Figure 8-2, p. 50.

The condition of native vegetation ranges from poor to excellent within the Proposed Action Area, with the vast majority of vegetation found to be in Excellent condition (Ecoscape, 2024a). Vegetation alongside roads, predominantly those in the northern portion of the Proposed Action Area within Marillana Station and the lower reaches of Mindy Mindy Creek, also within Marillana Station, were found to be in poor condition.

The most significant weed infestation are associated with Buffel Grass (*Cenchrus ciliaris*), a weed commonly associated with grazed areas. Buffel Grass (where recorded) occurs generally occurs along drainage lines and adjacent flats, with higher incidence of weeds positively correlated with heavily grazed areas (Ecoscape, 2024a). Twenty-three introduced flora species were recorded within or adjacent the Proposed Action Area. None are listed as Weeds of National Significance (Ecoscape, 2024a).

Introduced flora species recorded within the Proposed Action Area are further described in Attachment 1, Section 8.3.6, p. 53.

3.3 Heritage

3.3.1 Describe any Commonwealth Heritage Places Overseas or other places recognised as having heritage values that apply to the project area.

No Commonwealth heritage places occur within or adjacent the Proposed Action Area. The Proposed Action Area lies entirely within the jurisdiction of Western Australia, therefore no places listed on the List of Overseas Places of Historic Significance to Australia (LOPHSA) are relevant to the Proposed Action. In addition, no places with European heritage value are known to occur within the Proposed Action Area.

3.3.2 Describe any Indigenous heritage values that apply to the project area.

The Proposed Action Area lies entirely within the Nyiyaparli and Nyiyaparli #3 (WCD2018/008) Native Title Determination Area. Chichester Metals, through Fortescue has commenced consultation with the Nyiyaparli People regarding the social surroundings values within and surrounding the Proposed Action Area. This consultation will continue throughout the life of the Proposal. To date, the following values have been identified as being of importance to the Nyiyaparli People:

- Water, including surface and groundwater quality, quantity and flows. Chichester Metals understands the importance of water to the Nyiyaparli People and their custodianship of the water as it flows through their Country.
- Mindy Mindy Creek, Mindy Gorge on the upper reach of Mindy Mindy Creek and associated pools has very high spiritual value to the Nyiyaparli People.
- Weeli Wolli Creek, west of the Proposed Action, has very high spiritual and recreational value to the Nyiyaparli People. There are many places along the creek of traditional and contemporary importance to the Nyiyaparli People.
- Coondiner Creek east of the Proposed Action, also has very high spiritual and recreational value to the Nyiyaparli People.
- Continued access to important places for cultural and recreational purposes, including camping, hunting, fishing and ceremonial uses.
- Native plants and animals that have significance to the Nyiyaparli People for bush tucker or medicinal purposes.
- Fortescue Marsh.

The following cultural values are recognised within the Proposed Action Area. Ethnographic and archaeological surveys over the Proposed Action Area are ongoing.

Registered and Other sites

Four sites registered under the *Aboriginal Heritage Act, 1972* occur within the Proposed Action area. These include: Place ID# 10832 and 10833, Gum Tree Soak A and B, ID# 8115 Arrowhead 02, ID# 8795 Archway Rockhole.

Thirty-one other sites (Lodged sites) listed in the Aboriginal Cultural Heritage Inquiry System (ACHIS) occur within the Proposed Action Area. The accuracy of information related to these listings will be reviewed as part of the stakeholder consultation, impact assessment and Proposal development processes.

Ethnographic and Archaeological Surveys - identified heritage values

Numerous archaeological and ethnographic studies have been undertaken across the Proposed Action area to support exploration activities which commenced in 2009. These studies will be expanded to cover the area underlying the Proposed Action footprint, as well as areas considered to have potential for exposure to indirect impacts. The Proposed Action area lies entirely within the Traditional lands of the Nyiyaparli People.

Further information is provided in Attachment 1, Section 4.5.1 (Native Title), p. 19, Figure 302, p.17; Section 6 (Stakeholder identification), pp. 25–26; Section 12 (Key Environmental Factor - Social Surroundings), pp. 93–101.

The Proponent wishes to advise that as part of ongoing consultation, the Karlka Nyiyaparli Aboriginal Corporation (KNAC), the representative body of the Nyiyaparli People was provided the opportunity to fully review the supporting document (Attachment 1) including sensitive cultural information in late 2024, with the understanding that it was to be included in submissions to support referral of the Proposed Action pursuant to both the EP and EPBC Acts. The supporting document has since been published on the WA EPA's website as part of the assessment of the Proposed Action under the EP Act (Assessment no: 2492).

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

Surface Water Quality and Quantity

Surface water-related studies commenced in approximately 2021 and numerous studies are ongoing, encompassing hydrology, geomorphology and water quality. Key surface water features and characteristics located within the Proposed Action Area and surrounds are described below.

Regionally, the Proposed Action lies within the Upper Fortescue River catchment and extends from the Hamersley Range to the Fortescue Valley of the Pilbara region. Locally, the Proposed Action is predominantly located within the Mindy Mindy Creek catchment, with lesser portions on the eastern side sitting at the top of several smaller catchments that drain via tributaries to Coondiner Creek. Both creeks are major tributaries to the Fortescue Marsh and generally drain in a northerly direction before discharging via an alluvial fan into the Fortescue Marsh. The topography of the Proposed Action Area varies significantly between the rugged hills and incised drainage channels of the Hamersley Range in the south, to the generally flat and gently sloping area within the Fortescue Valley in the northern portion of the Proposed Action Area. The Fortescue Marsh is a Nationally important wetland and is being progressively gazetted as the Fortescue Marsh Nature Reserve, with the first land parcels gazetted in 2024. The Fortescue Marsh lies approximately 15 km to the north of the northernmost portion of the Proposed Action Area, or 20 from from the northern-most water supply borefield.

The Mindy Mindy Creek catchment is relatively undisturbed, with the exception of recent exploration activities (Fortescue commenced exploration in 2009) and grazing undertaken on Marillana Station. Mindy Gorge and another Gorge system on a major western tributary, host a series of persistent pools and Groundwater Dependent Ecosystems (GDEs), with Mindy Gorge recognised as a Priority Ecological Community (PEC) by the Western Australian Department of Biodiversity, Conservation and Attractions (DBCA). The Mindy Gorge PEC is described as, '*Riparian flora and plant communities of springs and river pools with high water permanence of the Pilbara Region*'. Reaches of Coondiner Creek also host persistent pools and GDEs, with similar features to the GDEs and pools associated with Mindy Mindy Creek. While some reaches of Mindy Mindy and Coondiner Creeks host persistent to semi-permanent pools, they generally only flow intermittently for weeks or sometimes months in response to significant cyclonic events.

Weeli Wolli Creek lies in a catchment adjacent and west of the Mindy Mindy catchment, and drains from the high relief areas of the Hamersley Range to the flat low-lying plains of the Fortescue Valley, before terminating at the Fortescue Marsh. Weeli Wolli Creek has a defined low flow channel. However, during significant flood events, surface water within the creek will overflow the creek banks and flow through historical overflow channels. As the creek approaches the Marsh, the channels becomes less defined and terminate in small deltas. Weeli Wolli Creek lies approximately, 15 km west of the Proposed Action Area. No portion of the Proposed Action Area lies within the Weeli Wolli Creek catchment.

Upstream of the proposed Nyidinghu Iron Ore Mine, existing mining operations discharge excess water from mining operations to Weeli Wolli Creek and its tributaries. This has resulted in the modification of the natural hydrologic regime of Weeli Wolli Creek, such that some reaches are now characterised by artificial perennial flow. In addition, surface water management infrastructure in the form of levees and diversions associated with third party mining operations have further changed the flow dynamics within this creek system.

Ephemeral freshwater claypans occur in the north of the Proposed Action Area, in a fringe of approximately 10–30 km surrounding Fortescue

Marsh. A number of surveys have been undertaken to characterise baseline conditions in relation to the claypan features (Lateral Environmental, 2024b). The low-relief landscape suggests claypans receive little runoff from the surrounding catchments, rather rainfall is attenuated in the internally draining claypans and flooded clay flats.

In addition, areas north and east of Mindy Mindy Creek within the Proposed Action Area are likely to exhibit sheet flow, as evidenced by areas of local banded mulga vegetation.

Surface water across the Proposed Action area is naturally fresh (TDS <1,000 mg/L) and pH circum neutral, with water quality within Mindy Mindy Creek generally characterised by low nutrient concentrations (generally below limits of detection) and dissolved metals, reflecting the relatively pristine and undeveloped nature of the catchment, In contrast, the impacts of mine water discharge can result in flows of brackish water within Weeli Wolli Creek and elevated nutrient concentrations. Water quality within Mindy Mindy Creek Claypans typically exhibit alkaline to strongly alkaline condition, typical of Pilbara wetlands. Water is highly turbid and fresh, reflecting that claypans are filled almost exclusively by rainfall, with no interaction with groundwater. Salinity within the Marsh is highest toward the end of summer, with a Total Dissolved Solids (TDS) concentration of up to 10,000 mg/L.

Groundwater Quality and Quantity

The hydrostratigraphy of the Proposal area has a complex interaction of aquifers and aquitards (CDM Smith, 2023). The Cenozoic Valley Fill Sediments, composed of interbedded alluvial and colluvial deposits, form unconfined aquifers in creek depressions. Dolerite dykes, sills, and intrusions in the Brockman Iron Formation act as barriers to groundwater flow, compartmentalising groundwater (Fortescue, 2023a).

Channel Iron Deposits serve as local aquifers with significant yields, while the Weelli Wolli Formation acts as a vertical barrier due to its low hydraulic conductivity (CDM Smith, 2023). Fractured rock aquifers within the Brockman Iron Formation, part of the Hamersley group, exhibit secondary porosity due to fracturing and mineralisation, often connecting hydraulically to the Tertiary Alluvials. Mount McRae Shale and Mt Sylvia Formation function as regional aquitards, isolating the Wittenoom aquifer, which forms the most transmissive regional aquifer, hosted in karstic dolomite (CDM Smith, 2023). Additionally, localised fractured rock supports minor groundwater occurrences, influenced by geological structures and weathered areas. Thin, shallow, unconfined aquifers are also present within Tertiary alluvial and detrital sediments, associated with modern drainage systems in the Mindy Mindy Creek and its tributaries (Fortescue, 2023a).

Groundwater flow generally aligns with surface water drainage, supporting significant environmental and cultural features such as persistent pools. The depth of groundwater ranges from 235 meters below ground level (mBGL) in the adjacent hills, to 0 mBGL near Mindy Mindy Creek (CDM Smith, 2023). Aquifers in the area are expected to be unconfined, with surface water in some cases likely representing surface expressions of the water table. Groundwater flow generally follows the topographic trend, moving from south to north. The lowest water levels, around 580 meters Australian Height Datum (mAHD), are found along Mindy Mindy Creek and the central north compartment. The conceptual hydrogeological model suggests that the depressed baseline groundwater levels (580–585 mAHD) indicate the potential for localised westward groundwater flow. The Mount McRae Shale serves as a low-permeability aquitard, restricting groundwater movement in the area.

Groundwater recharge is enhanced along drainage lines, with lower recharge rates away from the main Mindy Mindy Creek line. Groundwater discharge predominantly occurs as evapotranspiration along topographic lows, pools, and dense vegetation associated with the Mindy Mindy Creek channel and gorges. Persistent pools and associated groundwater dependent vegetation within Mindy Mindy Creek are sensitive receptors, which are likely supported by contributions from both surface water and groundwater (Fortescue, 2023a). Cross-cutting dykes significantly impact baseline groundwater levels across the deposit, causing level differences of 5 to 20 meters. These dykes, acting as low-permeability vertical barriers, create separate groundwater compartments, with erosion along drainage lines potentially allowing overflow between them (Fortescue, 2023a).

Groundwater in the area generally flows towards the Fortescue Marsh and is typically a subdued reflection of the local topography, flowing from the upper reaches of the alluvial fan to the Fortescue Marsh. Groundwater flow is relatively rapid in the upstream reaches of the CID palaeochannel, particularly after recharge events when there is an increased hydraulic gradient. As groundwater flow from upgradient areas approach the lower reaches of the Fortescue Valley, it slows, as it encounters saline flows emanating out from the edges of the Fortescue Valley and the Marsh.

A substantial saline to hypersaline mound of groundwater underlies the Marsh, to the north of the Proposed Action Area. This saline to hypersaline reservoir has developed as a result of a number of processes including density driven flow and accumulation of salts flushed from recharge areas in the Hamersley and Chichester ranges via deep fractured rock flows.

Multi-disciplinary hydrogeological and ecohydrological investigations commenced in approximately 2021 and are ongoing. Studies will inform a detailed understanding of the local and regional groundwater environment, with a focus on developing detailed conceptual models of the local groundwater environment that describes groundwater connectivity with GDEs. Attachment 1, Section 11, pp. 87–91 details studies undertaken or planned to be undertaken, and the characteristics of the groundwater environment.

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	Yes	Yes
S21	Nuclear	No	Yes
S23	Commonwealth Marine Area	No	Yes
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes
S27B	Commonwealth Heritage Places Overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

The Proposed Action Area does not intersect, or lie adjacent to any world heritage listed places and will therefore not impact this protected matter. No further information is provided.

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

The Proposed Action Area does not intersect, or lie adjacent to any national heritage listed places and will therefore not impact this protected matter. No further information is provided.

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

Though the Fortescue Marsh is recognised as providing important Migratory and shorebird habitat, it is not currently listed as a Ramsar wetland. Therefore the protected matter is not relevant to the Proposed Action. Further information in relation to potential impacts on Migratory bird habitat within Fortescue Marsh is provided in Section 4 of this online form.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species	Common name
Yes	Yes	Aphelocephala leucopsis	Southern Whiteface
Yes	Yes	Calidris acuminata	Sharp-tailed Sandpiper
Yes	Yes	Calidris ferruginea	Curlew Sandpiper
Yes	Yes	Dasyurus hallucatus	Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu]
No	No	Erythrotriorchis radiatus	Red Goshawk
Yes	Yes	Falco hypoleucos	Grey Falcon
Yes	Yes	Liasis olivaceus barroni	Pilbara Olive Python
No	No	Liopholis kintorei	Great Desert Skink, Tjakura, Warrarna, Mulyamiji
Yes	Yes	Macroderma gigas	Ghost Bat
No	No	Macrotis lagotis	Greater Bilby
Yes	Yes	Pezoporus occidentalis	Night Parrot
No	No	Polytelis alexandrae	Princess Parrot, Alexandra's Parrot
Yes	Yes	Rhinonicteris aurantia (Pilbara form)	Pilbara Leaf-nosed Bat
Yes	Yes	Rostratula australis	Australian Painted Snipe
No	No	Thryptomene wittweri	Mountain Thryptomene

Ecological communities

4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

Threatened Flora

Fringed Fire Bush (Seringia exastia) (CR)

More than 30 populations of *Seringia exastia* (listed as Critically Endangered under the EPBC Act) have been recorded within the Proposed Action Area (PAA). Some loss of individuals may occur as a result of clearing. Following recent taxonomic reclassification, the species is understood to be common and widespread throughout the Pilbara, central WA, Northern Territory and extending into South Australia.

Further information is provided in Attachment 1, Section 8.3.6, p. 52, Figure 8-3, p. 54 & Section 14.1.1, p. 110–111.

Threatened Fauna

Northern Quoll (Dasyurus hallucatus) [EN]

Survey effort to date indicates the site is unlikely to support an important population of Northern Quolls, with only three records (secondary evidence in the form of scats) found within the MDE. However, Northern Quolls are known to occur regionally and potential habitat is present within the Proposed Action Area, therefore targeted monitoring will be ongoing to better define Quol utilisation of the PAA.

Direct and indirect impacts which may arise from implementing the Proposed Action include: habitat loss due to clearing; habitat degradation as a result of fragmentation, erosional processes, changed water regimes; altered behaviour due to noise and light emissions from mining activities; increased predation by feral predators (foxes and cats) due to provision of artificial water, food waste and shelter; introduction and spread of weeds leading to habitat degradation; altered fire regimes leading to habitat degradation and greater risk of predation in post-fire landscape; direct loss or injury of individuals during clearing, vehicle movements and trenching; cumulative impacts to fauna and available habitat from the Proposed Action and other regional development.

Further information is provided in Attachment 1, Section 14.2.1, pp. 111–113; Figures 9-1 & 9-2, pp. pp. 65 & 74 respectively.

Ghost Bat (Macroderma gigas) [VU]

The Ghost Bat has been recorded at two locations within the southern Proposed Action Area, with one Category 3 (diurnal roost cave with occassional occupancy) and one Category 4 roost (nocturnal roost cave with opportunistic usage) identified on the basis of scat evidence. Both roosts are located within Gorges/Gullies habitat in the southern PAA. The Ghost Bat appears to infrequently utilise the survey area for foraging purposes and occasional diurnal roosting only and is unlikely to support an important population (Stantec, 2024a). The survey area is not on the edge of the species range and is unlikely to represent an important population for breeding or dispersal. Hills/Ranges/Plateaux, Gorges/Gullys and Rocky Escarpment habitat types within and adjacent to the PAA provide potential nocturnal and diurnal roosting opportunities for the ghost bat, with all other habitat types providing potential foraging and dispersal habitat.

Potential direct and indirect impacts include: habitat loss due to clearing; foraging habitat degradation via indirect impacts such as changed hydrological regimes and quality; disturbance and damage to roosts due to blasting and inground vibration (should future roosts be identified); degradation of habitat due to inappropriate fire regimes and introduced herbivores; increased predation by feral animals (cats and foxes) associated with increased human development; increased dust, light spill and noise emissions; cumulative impacts to fauna and available habitat from the Proposed Action and other regional development.

Further information is provided in Attachment 1, Section 14.2.2, pp. 113–116 and Figures 9-1 and 9-2, pp. pp. 65 & 74 respectively.

Pilbara Leaf-nosed Bat (Rhinonicteris aurantia) [VU]

Within the MDE, Hill/Ranges/Plateux, Gorges/Gully and Rocky Escarpments habitat have the potential to support roosts, though surveys have only identified the potential for a Category 3 (semi-permanent) diurnal roost to occur within the MDE. A targeted survey has failed to identify the location of the potential Category 3 roost due due to the low number of calls. Drainage Line/River/Creek (major), Drainage Line/River/Creek (minor), Gorges/Gullies, Rocky Escarpments, Woodland (open) and Plain (alluvial) provide foraging habitat for PLNB. Individuals have also been recorded at the nearby Coondiner Pool, situated within the newly gazetted Fortescue Marsh Nature Reserve, (and approx. 5 km east of the northern portion of the Proposed Action Area). Individuals recorded in this area may also forage within the PAA.

Direct and indirect impacts are as per those defined for the Ghost Bat (above).

Further information is provided in Attachment 1, Section 14.2.3, pp. 116–118 and Figures 9-1 and 9-2, pp. pp. 65 & 74 respectively.

Night Parrot (Pezoporus occidentalis) [EN]

Night Parrots (NP) are known to occur regionally and have been recorded on the north western edge of the Marsh at Fortescue's Chichester operations in 2005 and more recently in 2022, on the southern edge of the Marsh in areas of long-unburnt spinifex (preferred breeding / roosting habitat). The records south of Fortescue Marsh occur approximately 15 km from the northern-most Proposed Action Area and are thought to indicate the transient presence of the NP, rather than a stable long-term roost. Suitable foraging habitat surrounding the Marsh (outside of the PAA) includes Marsh/Lake (low halophytic shrubland). The potential for Plain (stony/gibber), Hills/Ranges,Plateaux and Hummock Grassland within the Proposed Area Area to support potentially prospective breeding and roosting habitat is considered low, however further targeted investigation will be undertaken.

Potential direct and indirect impacts include: habitat loss due to clearing; habitat degradation due to changed fire regimes & changed surface and groundwater quality and quantity; increased feral animal population (cats/foxes) due to provision of artificial water, food waste and shelter, in turn resulting in increased predation; light spill and noise emissions from mining activities deleteriously impacting behaviour, e.g. nesting, foraging; direct loss or injury of individuals during clearing / vehicle movements; direct loss or injury of individuals via entrapment in fencing installed around infrastructure; cumulative impacts to fauna and available habitat from the Proposed Action and other regional development.

Further information is provided in Attachment 1, Section 14.2.4, pp. 118-121 and Figure 9-1, p. 65 .

Grey Falcon (Falco hypoleucos) [VU]

The Grey Falcon has not been recorded within the PAA though open plains with treed watercourses provide suitable habitat. Overstorey vegetation in the Drainage Line/River/Creek (major) and Drainage Line/River/Creek (minor) habitat provide nesting and foraging habitat, while the Hummock Grassland, Plain (alluvial) and Plain (stony/gibber) provide foraging habitat.

Potential direct and indirect impacts are as per those identified for the Night Parrot (above).

Further information is provided in Attachment 1, Section 14.2.5, pp. 121–123 and Figures 9-1 and 9-2, pp. pp. 65 & 74 respectively.

Southern Whiteface (Aphelocephala leucopsis) [VU]

Though the Southern Whiteface has not been recorded within the PAA, a record occurs approx. 10 km west and the area is within the species' range and Woodland (open) habitat provides suitable foraging and breeding habitat. It is therefore considered possible the species may occur in the PAA.

Potential direct and indirect impacts are as per those identified for the Night Parrot (above).

Further information is provided in Attachment 1, Section 14.2.6, pp. 123–125 and Figures 9-1 and 9-2, pp. pp. 65 & 74 respectively.

Australian Painted Snipe (Rostratula australis) [EN]

The Australian Painted Snipe has not been recorded in the PAA, but has been recorded at Coondiner Pool, approximately 5 km east of the PAA. Potential habitat occurs the Proposed Action Area in the form of the freshwater claypans, particularly those with fringing vegetation suitable for nesting and riparian zones associated with Weeli Wolli and Mindy Mindy Creek.

Potential direct and indirect impacts are as per those identified for the Night Parrot (above).

Further information is provided in Section 14.2.7, pp. 126–129 and Figures 9-1 and 9-2, pp. 65 & 74 respectively.

<u>Common Greenshank (Tringa nebularia) [EN]; Sharp-tailed Sandpiper (Calidris acuminata) [VU]; Curlew</u> <u>Sandpiper (Calidris ferruginea) [CR]</u>

The PAA hosts suitable habitat for these species in the form of inundated Drainage Line/River/Creek (Major) habitat. The Common Greenshank and Sharp-tailed Sandpiper have been recently recorded in the surrounds, and on multiple occasions (the majority of which were associated with Opthalmia Dam 47 km south east of the Survey Area) (ALA 2021a; Birdlife Australia 2021; DBCA 2022). The Curlew Sandpiper has been recorded at Fortescue Marsh and may utilise suitable habitat in the Proposed Area Area when conditions are favourable. The PAA does not meet the criteria of an 'important habitat' for any of the species.

Potential direct and indirect impacts generally include those outlined for the Night Parrot (above), noting the absence of breeding habitat in the PAA.

Further information is provided in Section 14.2.8, pp. 127–129; Section 14.2.9, pp. 130–131; Figures 9-1 p. 65.

Pilbara Olive Python (Liasis olivaceus barroni) [VU]

Within the PAA, the Gullies/Gorges and Rocky Escarpments habitats provide nesting/breeding habitat, while the Drainage (major) habitat provides sheltering and foraging habitat and the Drainage Line (minor) provides foraging habitat. There are numerous records in the headwaters of Mindy Mindy Creek and the PAA is likely to host an 'important population'.

Potential direct and indirect impacts generally align with those outlined for the Ghost Bat (above).

Further information is provided in Attachment 1, Section 14.2.11, pp. 135–137; Figures 9-1 & 9-2, pp. 65 & 74 respectively.

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact?

*

Yes

4.1.4.5 Describe why you consider this to be a Significant Impact. *

Threatened Flora

Fringed Fire Bush (Seringia exastia) (CR)

No significant impact is anticipated given the species is known to occur commonly throughout the Pilbara region. Further information is provided in Attachment 1, Section 8.3.6, p. 52, Figure 8-3, p. 54 & Section 14.1.1, p. 110–111.

Threatened Fauna

Northern Quoll (Dasyurus hallucatus) [EN]

Although the occurrence of Northern Quoll within the PAA is consistent with known habitat preferences of the species, i.e., rocky habitats with rock crevices and caves (Van Dyck & Strahan, 2008), the species was only recorded via secondary evidence (scat), at two locations within the Gorges/Gullies habitat and one location within the Drainage Line (Major) habitat. Deployed motion cameras failed to record the species. Gorges/Gully habitat within the PAA is considered unlikely to support a population important for the long-term survival of the Northern Quoll and therefore it's **anticipated the Proposal Action is unlikely to have a significant impact on the Northern Quoll.**

Further information is provided in Attachment 1, Section 14.2.1, pp. 111–113; Figures 9-1 & 9-2, pp. 65 & 74 respectively.

Ghost Bat (Macroderma gigas) [VU]

The Ghost Bat appears to infrequently utilise the PAA for foraging and occassional diurnal roosting and no habitat considered critical to the species' survival has been identified. The PAA is also not considered to be on the edge of the species range. The PAA is therefore unlikely to support an 'important population' of the Ghost Bat and **implementation of the Proposed Action is therefore unlikely to significantly impact the Ghost Bat.**

Further information is provided in Attachment 1, Section 14.2.2, pp. 113–116 and Figures 9-1 and 9-2, pp. 65 & 74 respectively.

Pilbara Leaf-nosed Bat (Rhinonicteris aurantia) [VU]

The PLNB has been recorded foraging at a total of seven locations (15 occasions) within the Mindy South survey area. The majority of these were recorded at permanent or non-permanent water sources within Drainage Line (major) and Gorges/Gullies habitat and on one occasion in Plain (alluvial) habitat (Stantec, 2024a).

The Hill/Ranges/Plateux, Gorges/Gully and Rocky Escarpments habitat has the potential to support roosts within the PAA, though surveys have consistently encountered low call numbers and no roosts have been identified. A targeted survey failed to locate a potential Category 3 roost, however ongoing monitoring will continue to target the area. No critical habitat has therefore been identified within the PAA. Drainage Line/River/Creek (major), Drainage Line/River/Creek (minor), Gorges/Gullies, Rocky Escarpments, Woodland (open) and Plain (alluvial) provide foraging habitat for PLNB. Individuals have also been recorded at the nearby Coondiner Pool, situated within the newly gazetted Fortescue Marsh Nature Reserve, (and approx. 5 km east of the northern portion of the Proposed Action Area). Individuals recorded in this area may also forage within the PAA. Given the absence of critical habitat within the PAA, and the low number of calls recorded, the PAA is unlikely to support an important population of the species. **Implementation of the Proposed Action is therefore unlikely to result in a significant impact on the species.**

Further information is provided in Attachment 1, Section 14.2.3, pp. 116–118; Figures 9-1 and 9-2, pp. 65 & 74 respectively.

Night Parrot (Pezoporus occidentalis) [EN]

Night Parrots are known to occur regionally and have been recorded on the north western edge of the Marsh at Fortescue's Chichester operations in 2005 and more recently in 2022, on the southern edge of the Marsh in areas of long-unburnt spinifex (preferred breeding / roosting habitat). The records south of Fortescue Marsh occur approximately 15 km from the northern-most Proposed Action Area and are thought to indicate the transient presence of the Night Parrot, rather than a stable long-term roost. Suitable foraging habitat surrounding the Marsh (outside of the PAA) includes Marsh/Lake (low halophytic shrubland). The potential for Plain (stony/gibber), Hills/Ranges,Plateaux and Hummock Grassland within the Proposed Area Area to support potentially prospective breeding and roosting habitat is considered low, however further targeted investigation will be undertaken. Pending the outcome of further targeted investigations, to confirm the extent of potential habitat, the precautonary principle has been applied. Therefore in this instance, though unlikely, it is **considered possible the Proposed Action may have a significant impact on the Night Parrot due to direct and indirect loss and degradation of habitat.**

Further information is provided in Attachment 1, Section 14.2.4, pp. 118–121; Figure 9-1, p. 65.

Grey Falcon (Falco hypoleucos) [VU]

Though the Grey Falcon has not been recorded during recent surveys and there are no formal historical recordings within the PAA (DBCA, 2022), open plains with treed watercourses provide suitable habitat. Overstorey vegetation in the Drainage Line/River/Creek (major) and Drainage Line/River/Creek (minor) habitat provide nesting and foraging habitat for the Grey Falcon, while the Hummock Grassland, Plain (alluvial) and Plain (stony/gibber) provide foraging habitat. Given that the species has not been recorded in the PAA, it is unlikely to support an ecologically significant proportion of the population and **therefore significant impact to the species as a result in implementing the Proposed Action is unlikely**.

Further information is provided in Attachment 1, Section 14.2.5, pp. 121–123 and Figures 9-1 and 9-2, pp. 65 & 74 respectively.

Southern Whiteface (Aphelocephala leucopsis) [VU]

Though the Southern Whiteface has not been recorded within the PAA, a record occurs approx. 10 km west and the area is within the species' range and Woodland (open) habitat in the northern and southern portions of the PAA provides suitable foraging and breeding habitat. Given that suitable habitat is restricted to the mine access road, lower reaches of Mindy Mindy Creek and the northern portion of the PAA where limited additional development is planned, it is **considered unlikely that the Proposed Action will have a significant impact on the Southern Whiteface**.

Further information is provided in Attachment 1, Section 14.2.6, pp. 123–125 and Figures 9-1 and 9-2, pp. 65 & 74 respectively.

Australian Painted Snipe (Rostratula australis) [EN]

The Australian Painted Snipe has not been recorded in the PAA, but has been recorded at Coondiner Pool, approximately 5 km east of the PAA. Potential habitat occurs the PAA in the form of the freshwater claypans, particularly where they may have suitable fringing vegetation suitable for nesting, and riparian zones associated with Weeli Wolli and Mindy Mindy Creek. The species may utilise drainage lines when inundated, however permanent foraging habitat is not present, nor suitable breeding habitat. Given that the MDE does not support a significant population of the Australian Painted Snipe, a significant impact to this species as a result of implementing the Proposal is unlikely.

Further information is provided in Attachment 1, Section 14.2.7, pp. 126–129; Figures 9-1 and 9-2, pp. 65 & 74 respectively.

<u>Common Greenshank (Tringa nebularia) [EN]; Sharp-tailed Sandpiper (Calidris acuminata) [VU]; Curlew</u> <u>Sandpiper (Calidris ferruginea) [CR]</u> Given that none of the above species have been recorded in the PAA, and that inundated Drainage Line (major) habitat is likely to only be utilised on occassion by these species, when conditions are suitable, individuals that may utilise the PAA would not meet the criteria of an 'important population'. It is unlikely therefore, that implementing the Proposed Action would result in a significant impact to these species.

Further information is provided in Attachment 1, Section 14.2.8, pp. 127–129; Section 14.2.9, pp. 130–131; Figures 9-1 p. 65.

Pilbara Olive Python (Liasis olivaceus barroni) [VU]

Gullies/Gorges and Rocky Escarpments habitats provide nesting/breeding habitat within the PAA, while the Drainage Line (major) habitat and associated persistent pools, provide sheltering and foraging habitat and the Drainage Line (minor) provide foraging habitat. There are numerous records in the headwaters of Mindy Mindy Creek and the PAA is considered likely to host an 'important population'. **The Proposed Action therefore has the potential to significantly impact the species largely as a result of direct loss of habitat and habitat degradation.**

Further information is provided in Attachment 1, Section 14.2.11, pp. 135–137; Figures 9-1 & 9-2, pp. 65 & 74 respectively.

4.1.4.7 Do you think your proposed action is a controlled action? *

Yes

4.1.4.8 Please elaborate why you think your proposed action is a controlled action. *

Without appropriate mitigation measures, the impacts associated with implementing the Proposed Action could potentially significantly impact the **Pilbara Olive Python** via direct loss of habitat and indirect impacts as a result of habitat degradation. Specifically, impacts could include:

- Direct clearing of rocky habitats (generally non-riparian) for mining and construction of mining-related infrastructure, e.g. Waste Rock Landforms.
- Changed hydrological regimes in pool habitats due to changed groundwater hydrological regimes resulting from dewatering, reinjection and aquifer supplementation,
- Changed hydrological regimes in pool habitats due to changed surface hydrological regimes as a result of constructing mine and surface water infrastructure and loss of catchment.
- Reduced water quality in pool habitats used for hunting / foraging, as a result of increased sediment and nutrient loads from distrubed catchments and poor quality seepage from mine waste (waste rock) polluting the receiving environment.
- Increased rates of feral predation (cats, foxes) associated with higher level of human development.

Further information in relation to potential impacts of the Proposed Action on the Pilbara Olive Python is provided in Attachment 1, Section 14.2.11, pp. 135–137; Figures 9-1 & 9-2, pp. 65 & 74 respectively.

In addition, application of the precautionary principle requires that the potential for a significant impact on the **Night Parrot** cannot be ruled out until further targeted investigation is undertaken to determine whether suitable Night Parrot habitat occurs within the Proposed Action Area and adjacent areas. The Night Parrot could be impacted by the Proposed Action as a result of the following:

- Direct loss of habitat due to clearing for the mine and infrastructure footprint.
- Direct mortality or injury due to interaction with vehicles or mine operations, specifically entrapment in fencing.
- Habitat degradation as a result of changed surface or groundwater hydrology and quality.
- Habitat degradation as a result of altered fire regimes and introduction and spread of weeds.
- Increased rates of feral predation (cats, foxes) associated with higher level of human development.
- Altered species behaviour and utilisation of areas, related to noise, vibration and light spill.

Further information with regards to the potential impacts of the Proposed Action on the Night Parrot is provided in Attachment 1, Section 14.2.4, pp. 118–121; Figure 9-1 p. 65.

The mitigation hierarchy will be applied while developing and implementing the Proposed Action to ensure that impacts to MNES species are minimised and managed appropriately long-term.

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Fortescue will consistently employ the mitigation hierarchy while implementing the Proposed Action so as to minimise impacts to MNES Threatened and Migratory species. Relevant guidance published by the DCCEEW in relation to the application of the mitigation hierarchy and application of offsets will be considered (DCCEEW, 2022). As will relevant high level guidance on the design of mitigative strategies published in the EPA (2023) Statement of environmental principles, factors, objectives and aims of EIA.

The following measures will support the objective to AVOID potential impacts wherever found to be feasible and/or practicable:

Design:

- Targeted baseline fauna surveys will be undertaken in accordance with applicable EPA and DCCEEW guidance to determine distribution of conservation significant fauna.
- Conservation significant fauna and habitat identified during targeted fauna surveys will be recorded in the Corporate GIS and PIMS in accordance with the *Environmental Datasets Data Governance Guidelines 100-GU-EN-0020*.
- Conduct a risk assessment to identify high risk areas, including areas where conservation significant fauna species and habitat have been identified and potential impacts are likely in accordance with *Fortescue Risk Management Framework (FRMF) Standard 100-ST-RK-0031*.

Implementation:

- Prior to conducting ground disturbance activities, ensure known locations of significant fauna habitat to be retained and protected from disturbance are identified on the ground by appropriate signage, fencing or flagging in accordance with the *Land Use Certification Procedure 100-PR-TA-001*.
- Implement a Weed Management Plan to ensure all vehicles, plant and equipment, including trailered equipment, are clean, inspected and certified prior to entry into Proponent controlled sites to prevent the degradation of priority fauna habitat.

Where avoidance is not considered feasible or practicable, the following measures will be implemented to MINIMISE potential impacts of the Proposed Action.

Design:

- Infrastructure siting, design, construction and operation will reflect risk assessment outcomes so that impacts on conservation significant fauna and associated habitat are minimised.
- Drainage infrastructure siting, design, construction and operation to design specifications which reflect risk assessment outcomes in minimising interference and disruption of natural surface water flows and quality in accordance with Fortescue's *Standard Engineering Specification for Drainage and Flood Protection 100-SP-CI-0004* and the *Standard Engineering Specification for Road Design for Projects 100-SP-CI-0002*.

Implementation:

- Minimise clearing and vegetation disturbance to ensure conservation significant fauna and associated habitat is minimally impacted. Conduct clearing in accordance with a permit issued under the Land Use Certificate Procedure 100-PR-TA-0001.
- Ensure that appropriate measures and level of effort is expended to disperse individual conservation significant fauna in safe manner prior to clearing activities. These measures will be fauna-specific, based on an understanding of local habitat values and the ecology and behaviour of the taxa, e.g. timing of disturbance would avoid critical breeding season.
- Employ personnel trained in fauna handling during trenching operations to clear open trench of fauna on a daily basis and prior to backfilling. To minimise the potential for fauna injuries or deaths on haul and access roads, implement appropriate mitigation measures such as speed limit restrictions, right of way for fauna and the prohibition of off-road driving.

- Ensure staff and contractors are provided with appropriate training to ensure conservation significant fauna and associated habitat are protected.
- Ensure all vehicles, plant and equipment, including trailered equipment, are clean, inspected and certified prior to entry into Proponent controlled sites to prevent the degradation of priority fauna habitat in accordance with a Weed Management Plan.
- In addition to the above design and construction specifications, impacts to surface water quality and quantity will be minimised via implementation of a Surface Water Management Plan (SWMP). The SWMP will include a suite of appropriate measures.
- Develop and implement a Feral Animal Program to effectively manage and control feral animals to minimise impacts on fauna.
- When constructing a fire break or carrying out a prescribed burn where conservation significant fauna and habitat have been identified, adhere to the requirements outlined in a relevant Fortescue Bushfire Management Plan.
- Manage waste materials and on-site landfill facilities in accordance with a Waste Management Plan to minimise potential impacts on fauna and the likelihood of increases in feral animal numbers.

Where impacts cannot be avoided or minimised, the following measures will assist establishment of habitat and fauna values, post disturbance (REHABILITATE):

- Develop and implement a Mine Closure Plan that aligns with DMIRS Guidance (DMIRS, 2020a; DMIRS 2020b).
- Progressively rehabilitate disturbed land that is not required to support ongoing operations with local native plant species that support native fauna foraging.

As the Proposed Action is further refined and developed and potential impacts mitigated via the mitigation hierarchy, COMPENSATION measures may be considered should all other mitigative measures be exhausted, i.e. alternatives not considered practicable.

No compensation is currently proposed. If, following detailed impact assessment and application of the mitigation hierarchy, compensatory measures are considered necessary, these would likely be applied via the established Pilbara Environmental Offsets Fund (PEOF) framework.

Further information detailing how the mitigation hierarchy is being applied to the Proposed Action is provided in Attachment 1, Section 15 (Mitigation Hierarchy), pp. 137–140.

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

No compensatory measures are currently proposed for the Proposed Action. If, following detailed impact assessment and application of the mitigation hierarchy, compensatory measures are considered necessary, these would likely be applied via the established Pilbara Environmental Offsets Fund (PEOF) framework.

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species	Common name
Yes	Yes	Actitis hypoleucos	Common Sandpiper
Yes	Yes	Apus pacificus	Fork-tailed Swift
Yes	Yes	Calidris acuminata	Sharp-tailed Sandpiper
Yes	Yes	Calidris ferruginea	Curlew Sandpiper
Yes	Yes	Calidris melanotos	Pectoral Sandpiper
Yes	Yes	Calidris ruficollis	Red-necked Stint
Yes	Yes	Calidris subminuta	Long-toed Stint
Yes	Yes	Charadrius veredus	Oriental Plover, Oriental Dotterel
Yes	Yes	Gelochelidon nilotica	Gull-billed Tern
No	No	Hirundo rustica	Barn Swallow
Yes	Yes	Hydroprogne caspia	Caspian Tern
No	No	Motacilla cinerea	Grey Wagtail
No	No	Motacilla flava	Yellow Wagtail
Yes	Yes	Pandion haliaetus	Osprey
Yes	Yes	Plegadis falcinellus	Glossy Ibis
Yes	Yes	Tringa glareola	Wood Sandpiper
Yes	Yes	Tringa nebularia	Common Greenshank, Greenshank
Yes	Yes	Tringa stagnatilis	Marsh Sandpiper, Little Greenshank
Yes	Yes	Tringa totanus	Common Redshank, Redshank

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.5.2 Briefly describe why your action has a direct and/or indirect impact on these

protected matters. *

Sixteen MNES-listed Migratory bird species are identified as either having been recorded within, or in proximity to the Proposed Action Area, or are considered to potentially occur, with potential habitat available within the Proposed Action Area (Stantec, 2024a). These species include:

- Caspian Tern (Hydroprogne caspia)
- Wood Sandpiper (Tringa glareola)
- Sharp-tailed Sandpiper (Calidris acuminata) [VU]
- Common Sandpiper (Actitis hypoleucos)
- Common Greenshank (Tringa nebularia) [EN]
- Common Redshank (Tringa totanus)
- Fork-tailed Swift (Apus pacificus)
- Osprey (Pandion haliaetus)
- Glossy Ibis (Plegadis falcinellus)
- Curlew Sandpiper (Calidris ferruginea) [CR]
- Long-toed Stint (Calidris subminuta)
- Red-necked Stint (Calidris ruficollis)
- Marsh Sandpiper (Tringa stagnatilis)
- Pectoral Sandpiper (*Calidris melanotos*)
- Oriental Plover (*Charadrius veredus*)
- Gull-billed Tern (Gelochelidon nilotica).

Habitat for migratory birds within and adjacent the Proposed Action Area include:

- Pools within Mindy Mindy and Coondiner Creeks may provide disperse habitat when conditions are suitable.
- Similarly, flooded claypans within and surrounding the Proposed Action Area are likely to provide disperse habitat when conditions are suitable.
- The Fortescue Marsh is recognised as a Nationally important wetland providing important inland habitat for birds on their annual north-south migration route. The marsh lies approx. 15 km north (and outside) of the Proposed Action Area.
- Coondiner Pool in the surrounding area (approx. 5 km east of Proposed Action Area) also provides potential inland wetland habitat for migratory birds.

Direct and indirect impacts include: habitat loss due to clearing; foraging habitat degradation via changed fire regimes and indirect impacts such as changed water regimes, e.g. groundwater drawdown and mounding, salinity, changes to surface hydrology; predation by feral carnivores, in particular, nest predation by foxes and cats; light spill and noise emissions from mining activities; direct loss or injury of individuals during clearing and vehicle movements; cumulative impacts to fauna and available habitat from the Proposed Action and other regional development.

Further details of potential impacts to Migratory birds within the Proposed Action Area is provided in Attachment 1, Section 14.2.10, pp. 131–134; Section 9, pp. 57–81; Figures 9-1 & 9-2, p. 65 & 74 respectively.

4.1.5.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact?

No

4.1.5.6 Describe why you do not consider this to be a Significant Impact. *

Fortescue Marsh is recognised as providing important inland habitat for important populations of Migratory birds and is located approximately 15 km north of the northern-most boundary of the Proposed Action Area. Coondiner Pool located within the Fortescue Marsh Nature Reserve, on the lower reach of Coondiner Creek may also provide habitat value for Migratory birds. There will be no direct impact to recognised Migratory bird habitat values within the Fortescue Marsh and surrounding Marsh / Lake habitat. Impacts to ephemeral freshwater claypan features within the Action Area will also be limited, as the majority of claypans features lie outside of proposed disturbance areas. In addition, there will be no direct impact to Coondiner Pool which lies approximately 3km east (and outside of) the Proposed Action Area.

The potential for the Proposed Action to indirectly impact Migratory bird habitat values at the Fortescue Marsh, Coondiner Pool or ephemeral freshwater claypans via altered groundwater regimes is also considered negligible. Changes in groundwater conditions due to the Proposed Action are highly unlikely to extend as far as Fortescue Marsh. The conceptual understanding of Coondiner Pool and surrounding vegetation is that it is disconnected from the regional aquifer (Coondiner Pool functions similar to a large claypan), but that fringing vegetation may be supported by a local aquifer. Potential groundwater drawdown as a result of operating the water supply borefield, is therefore unlikely to impact the pool or surrounding vegetation (should vegetation prove to be groundwater dependent). Freshwater claypan features are similarly disconnected from both the local and regional aquifer and surrounding vegetation is not groundwater dependent. Impacts to these habitats due to altered surface water regimes and quality, is also expected to be negligible, given the relative scale of impacts within the upper Mindy Mindy and Coondiner Creek catchments and the natural attenuation of impacts as a result of the distance between the Proposed Action and the downstream receptors.

Given the distance from the Fortescue Marsh, indirect impacts including noise, vibration and light spill, introduction and spread of weeds and increased feral predatation are unlikely to be significant at this sensitive receptor.

The potential indirect impacts via changed hydrological regimes to Migratory bird habitat values within Fortescue Marsh and other receptor habitats remains the subject of ongoing studies and investigation and a cumulative impact assessment will be presented in an Environmental Review Document (ERD) for consideration.

Further details of potential impacts to Migratory birds within the Proposed Action Area is provided in Attachment 1, Section 14.2.10, pp. 131–134; Section 9, pp. 57–81; Figures 9-1 & 9-2, p. 65 & 74 respectively.

4.1.5.7 Do you think your proposed action is a controlled action? *

No

4.1.5.9 Please elaborate why you do not think your proposed action is a controlled action.

*

The inherent, unmitigated impacts of the Proposed Action do not have the potential to significantly impact MNES-listed Migratory species via either direct disturbance, or indirect habitat degradation processes, most notably those associated with Fortescue Marsh:

- Direct impacts are low to negligible, with the most important habitat values at Fortescue Marsh, located approx. 15 km from (and outside of) the Proposed Action.
- Indirect impacts associated with changed surface and groundwater hydrological regimes are expected to be low to negligible due to the distance and scale of the Proposed Action from important habitat values.
- Indirect impacts that could reduce habitat values, related to noise, vibration and light spill, introduction and spread of weeds and increased feral predatation and/or competition, are again unlikely to be significant at Fortescue Marsh, due to the distance and scale of the Proposed Action.
- As the Proposed Action is some distance from Fortescue Marsh, additional cumulative impact is not expected to be material.

4.1.5.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

The Fortescue Marsh which provides important habitat for Migratory birds lies approximately 15 km from the northern and north-east boundary of the Proposed Action Area and is therefore immediately down gradient of the Proposed Action Area. Although, as outlined above, the inherent risk is low to negligible, mitigation measures will focus on minimising indirect impacts to the Marsh by maintaining natural hydrological cycles and water quality. Key mine infrastructure are located some distance from the Marsh and supporting infrastructure will be sensitively planned and sited to minimise indirect impacts to potential habitat for migratory species, e.g. to freshwater claypans.

Fortescue will consistently employ the mitigation hierarchy while implementing the Proposed Action so as to minimise impacts to MNES Migratory species. Relevant guidance published by the DCCEEW in relation to the application of the mitigation hierarchy and application of offsets will be considered. As will relevant high level guidance on the design of mitigative strategies published by the EPA (2023e) Statement of environmental principles, factors, objectives and aims of EIA.

Further information on the mitigation measures that may be employed to avoid, minimise, rehabilitate and compensate the direct and indirect impacts of the Proposed Action are detailed in Attachment 1, Section 15 (Mitigation Hierarchy), pp. 137–140.

4.1.5.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

No compensatory measures are currently proposed for the Proposed Action. If, following detailed impact assessment and application of the mitigation hierarchy, compensatory measures are considered necessary, these would likely be applied via the established Pilbara Environmental Offsets Fund (PEOF) framework.

4.1.6 Nuclear

4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

*

4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

The Proposed Action is not a nuclear action. No further information is provided.

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

There are no potential impacts to this Protected Matter from the Proposed Action. The Proposed Action Area does not intersect with a Commonwealth Marine Area. No further information is provided.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

*

4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

The Proposed Action will not impact the Great Barrier Reef as it is located on the western seaboard and is not proximal to the Great Barrier Reef. No further information is provided.

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

The Proposed Action is not related to a coal mining or coal seam gas development, therefore the protected matter is not relevant. No further information is provided.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

There are no direct or indirect impacts to this Protected Matter associated with implementation of the Proposed Action. The Proposed Action Area does not intersect with Commonwealth Land. No further information is provided.

4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact.

*

The Proposed Action Area does not intersect with a Commonwealth Heritage Places Overseas, therefore implementation of the Proposed Action will not potentially impact this protected matter. No further information is provided.

4.1.12 Commonwealth or Commonwealth Agency

4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? *

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

• Threatened Species and Ecological Communities (S18)

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

No

4.3.8 Describe why alternatives for your proposed action were not possible. *

The location of the Proposed Action is necessarily constrained by the location of target iron ore mineralisation. While flexibility will be employed where possible to mitigate impacts via appropriate mine planning and risk-based siting and design, Fortescue are pursuing development of the Proposed Action to maintain production levels as guided by the business planning process.

The mitigation hierarchy and a risk-based approach will be employed during all phases of developing and implementing the Proposed Action to limit impacts to the receiving environment and MNES-listed species.

The Indicative Disturbance Footprint (IDF) remains conceptual but is currently considered the optimum outcome (pending further studies and option assessments) in terms of mitigating impacts to the receiving environment. The IDF has been shaped via a multi-disciplinary approach which considered multiple factors including baseline hydrology and ecological data and input from key stakeholders. As further surveys and investigations are conducted, the IDF is expected to be adjusted to avoid, where feasible, and further reduce potential impacts on significant environmental and cultural values.

During the iterative design process of the proposal, several alternative strategies were considered but ultimately excluded. A summary of these alternatives, along with the reasons for their removal are provided in Attachment 1, Section 2.5 (Proposal alternatives), p 9.

Continued application of the mitigation hierarchy and ongoing consultation with the Nyiyaparli People will further avoid or minimise impacts to environment and cultural values, particularly those associated with Mindy Mindy Creek and Inland Waters values.

5. Lodgement

5.1 Attachments

	Туре	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	18/12/2024	No	High
#2.	Document	ATT 2_FIG 1_Fortescue Proposed Actions_Relative locations.pdf Figure showing relationship of the Proposed Action to the Nyidinghu Iron Ore Mine & East Hamersley Railway Proposed Actions	30/01/2025	No	High

1.2.6 Commonwealth or state legislation, planning frameworks or policy documents that are relevant to the proposed action

	Туре	Name	Date	Sensitivity Confidence
#1.	Link	Proposals - Mindy South Iron Ore		High
		Mine		
		https://www.epa.wa.gov.au/proposa	lls/mindy-	
		south		

1.2.7 Public consultation regarding the project area

Туре	Name		Date	Sensitivity Confidence
#1. Docur	nent ATT 1_MS-000 s38 referral su 1.pdf Mindy South Ir document for t referral.	00-AE-EN-0001_MSIOM pporting document_Rev ron Ore Mine supporting he s38 and EPBC Act	17/12/2024	High

1.3.2.17 (Person proposing to take the action) Proposer's history of responsible environmental management

	Туре	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 3_Fortescue Environment Policy.pdf Fortescue Environment Policy (100-PO- EN-0001)	30/07/2022	No	High

1.3.2.18 (Person proposing to take the action) If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

	Type Name	Date	Sensitivity Confidence
#1.	Document		

ATT 1_MS- s38 referra 1.pdf Mindy Sout document f referral.	0000-AE-EN-0001_MSIOM I supporting document_Rev th Iron Ore Mine supporting for the s38 and EPBC Act	17/12/2024 No	High	
#2.	Document ATT 3_Fortescue Policy.pdf Fortescue Enviro EN-0001)	Environment	29/07/2022 No	High

2.2.5 Tenure of the action area relevant to the project area

	Туре	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024	No	High

3.1.1 Current condition of the project area's environment

Туре	Name	Date	Sensitivity	Confidence
#1. Documer	at ATT 2_FIG 1_Fortescue Proposed Actions_Relative locations.pdf Figure showing relationship of the Proposed Action to the Nyidinghu Iron Ore Mine & East Hamersley Railway Proposed Actions	29/01/2025	No	High

3.1.2 Existing or proposed uses for the project area

	Туре	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024	No	High
#2.	Document	ATT 2_FIG 1_Fortescue Proposed Actions_Relative locations.pdf Figure showing relationship of the Proposed Action to the Nyidinghu Iron Ore Mine & East Hamersley Railway Proposed Actions	29/01/2025	No	High

	Туре	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024	No	High
#2.	Document	ATT 2_FIG 1_Fortescue Proposed Actions_Relative locations.pdf Figure showing relationship of the Proposed Action to the Nyidinghu Iron Ore Mine & East Hamersley Railway Proposed Actions	29/01/2025	No	High

3.2.1 Flora and fauna within the affected area

Туре	e	Name	Date	Sensitivity	Confidence
#1. Doci	ument	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024	No	High

3.2.2 Vegetation within the project area

	Туре	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024	No	High

3.3.2 Indigenous heritage values that apply to the project area

	Туре	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024	No	High

3.4.1 Hydrology characteristics that apply to the project area

E.

Туре	Name	Date	Sensitivity Confidence

#1.	Document ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024 No	High
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4.1.4.2 (Threatened Species and Ecological Communities) Why your action has a direct and/or indirect impact on the identified protected matters

	Туре	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024	No	High

4.1.4.5 (Threatened Species and Ecological Communities) Why you consider the direct and/or indirect impact to be a Significant Impact

	Туре	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024	No	High

4.1.4.8 (Threatened Species and Ecological Communities) Why you think your proposed action is a controlled action

-	Туре	Name	Date	Sensitivity	Confidence
#1. [Document	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024	No	High

4.1.4.10 (Threatened Species and Ecological Communities) Avoidance or mitigation measures proposed for this action

	Туре	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024	No	High

4.1.5.2 (Migratory Species) Why your action has a direct and/or indirect impact on the identified protected matters

	Туре	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024	No	High

4.1.5.5 (Migratory Species) Why you consider the direct and/or indirect impact to be a Significant Impact

Ту	уре	Name	Date	Sensitivity	Confidence
#1. Do	ocument	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024	No	High

4.1.5.8 (Migratory Species) Why you think your proposed action is a controlled action

	Туре	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024	No	High

4.1.5.10 (Migratory Species) Avoidance or mitigation measures proposed for this action

Туре	Name	Date	Sensitivity	Confidence
#1. Document	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024	No	High

4.3.8 Why alternatives for your proposed action were not possible

	Туре	Name	Date	Sensitivity	Confidence
#1.	Document	ATT 1_MS-0000-AE-EN-0001_MSIOM s38 referral supporting document_Rev 1.pdf Mindy South Iron Ore Mine supporting document for the s38 and EPBC Act referral.	17/12/2024	No	High

5.2 Declarations

Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN	83109264262
Organisation name	CHICHESTER METALS PTY LTD
Organisation address	6004 WA
Representative's name	Karen Fairweather
Representative's job title	Senior Environmental Advisor
Phone	+61 8 6218 8888
Email	karen.fairweather@fortescue.com
Address	Ground Floor, 256 Saint Georges Terrace, Perth WA 6000

Check this box to indicate you have read the referral form. *

I would like to receive notifications and track the referral progress through the EPBC portal. *

By checking this box, I, **Karen Fairweather of CHICHESTER METALS PTY LTD**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

I would like to receive notifications and track the referral progress through the EPBC portal. *

Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	83109264262
Organisation name	CHICHESTER METALS PTY LTD
Organisation address	6004 WA
Representative's name	Jarrod Pittson

Representative's job title	Group Manager, Environment and Closure
Phone	+61 8 6218 8888
Email	jarrod.pittson@fortescue.com
Address	Ground Floor, 256 Saint Georges Terrace, Perth WA 6000

Check this box to indicate you have read the referral form. *

I would like to receive notifications and track the referral progress through the EPBC portal. *

I, Jarrod Pittson of CHICHESTER METALS PTY LTD, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

I would like to receive notifications and track the referral progress through the EPBC portal. *

Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

Check this box to indicate you have read the referral form. *

I would like to receive notifications and track the referral progress through the EPBC portal. *

I, Jarrod Pittson of CHICHESTER METALS PTY LTD, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

I would like to receive notifications and track the referral progress through the EPBC portal. *