Department of Energy, Mines, Industry Regulation and Safety

GOVERNMENT OF WESTERN AUSTRALIA

Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	4468/4
Permit type:	Purpose Permit
Applicant name:	BHP Iron Ore Pty Ltd
Application received:	1 July 2024
Application area:	750 hectares
Purpose of clearing:	Mineral exploration, geotechnical investigations, hydrological investigations, installation of meteorological masts and LiDAR stations and any associated activities
Method of clearing:	Mechanical Removal
Tenure:	*Iron Ore (Mount Newman) Agreement Act 1964*, Mineral Lease 244SA (AML 70/244)
Location (LGA area/s):	Shire of East Pilbara
Colloquial name:	Jinidi Exploration Project

1.2. Description of clearing activities

BHP Iron Ore Pty Ltd proposes to clear up to 750 hectares of native vegetation within a boundary of approximately 12,840 hectares, for the purpose of mineral exploration, geotechnical investigations, hydrological investigations, installation of meteorological masts and LiDAR stations and any associated activities. The project is located approximately 53 kilometres north-west of Newman, within the Shire of East Pilbara.

Clearing permit CPS 4468/1 was granted by the Department of Mines and Petroleum (now the Department of Energy, Mines, Industry Regulation and Safety) on 18 August 2011 and was valid from 10 September 2011 to 31 July 2016. The permit authorised the clearing of up to 417.45 hectares of native vegetation, for the purpose of mineral exploration.

CPS 4468/2 was granted on 15 June 2016, amending the permit to remove the flora management condition, amend the annual reporting dates, and extend the permit duration to 30 November 2026. The area of clearing authorised and the permit boundaries remained unchanged.

CPS 4468/3 was granted on 29 June 2021, amending the permit to extend the permit duration, extend the period in which clearing is authorised and change the company name. The area of clearing authorised and the permit boundaries remained unchanged.

On 1 July 2024, the Permit Holder applied to amend CPS 4468/3 to amend the permit purpose, reduce the permit boundary by approximately 26 hectares, increase the disturbance limit to 750 hectares, extend the permit duration to 30 November 2036, extend the clearing period to 30 November 2031, and extend the final reporting date to 30 November 2036.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	27 February 2025
Decision area:	750 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed, and determined in accordance with section 51KA(1) and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) advertised the application for a public comment for a period of 21 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix E), supporting information provided by the applicant including the findings of a flora and vegetation survey, the clearing principles set out in Schedule 5 of the EP Act (Appendix B), proposed avoidance and minimisation measures (Section 3.1), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3).

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values;
- impacts to conservation significant flora;
- the loss of native vegetation that is critical habitat for northern quoll, Pilbara olive python, and grey falcon;
- The clearing of active mounds of the Western pebble-mound mouse; and
- potential impacts to riparain vegetation and water flows.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing is unlikely to lead to appreciable land degradation and can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- avoid clearing within a 10 metre buffer of listed Priority flora;
- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity;
- avoid clearing within a 10 metre buffer of active mounds of the Western pebble-mound mouse;
- avoid clearing within areas identified as critical habitat for conservation significant fauna of the region, unless clearing for rehabilitation activities;
- avoid clearing riparian vegetation where possible; where riparian vegetation is to be impacted ensure maintenance of water flows; and
- retain cleared vegetation and topsoil and respread this within 12 months of clearing to ensure fauna habitat is not permanently lost.

The Delegated Officer determined that the proposed additional clearing of 332.55 hectares is not likely to lead to an unacceptable risk to environmental values as it can be managed by conditions placed on the clearing permit.

1.5. Site map

A site map of proposed clearing is provided in Figure 1 below.

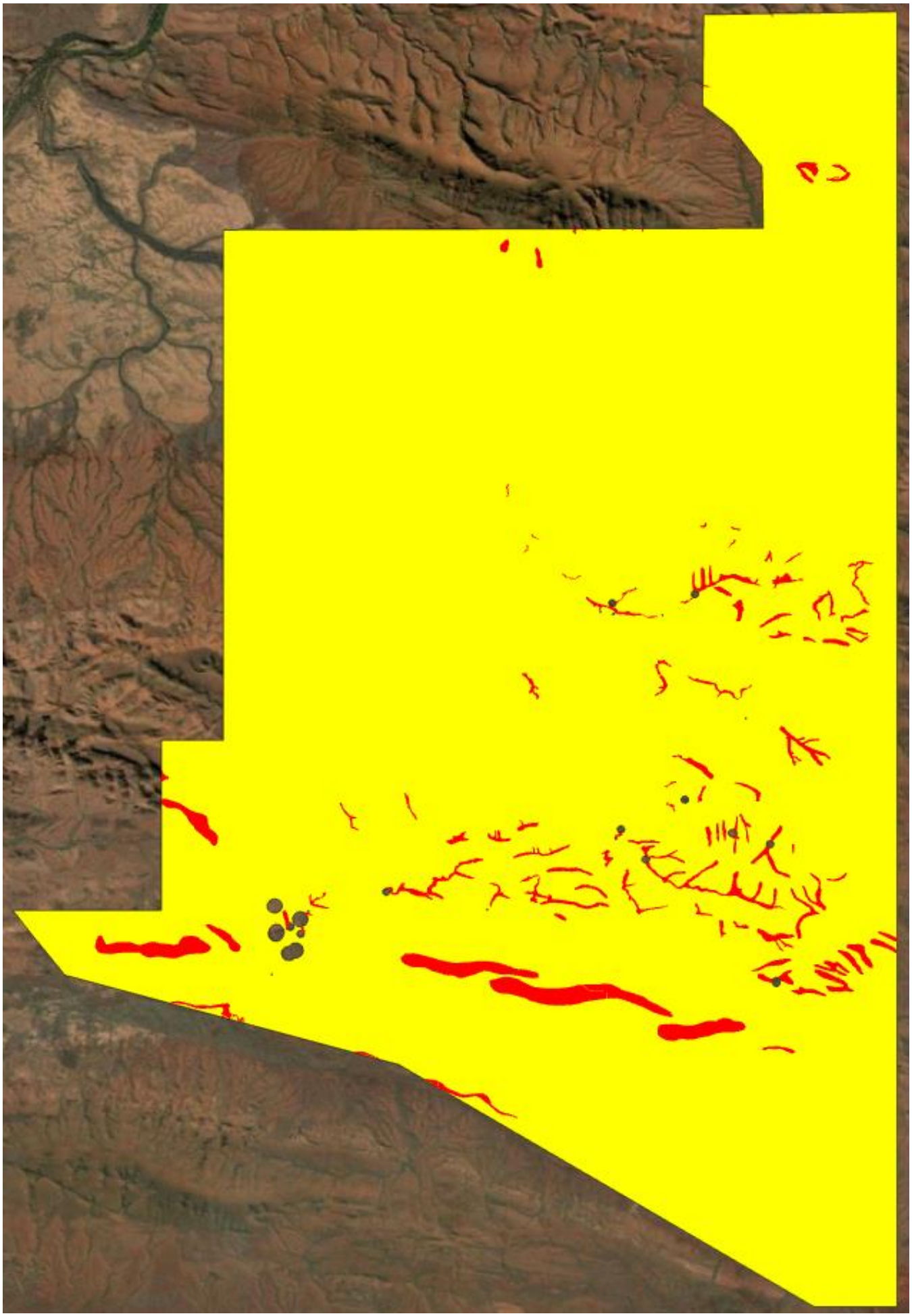

Figure 1. Map of the application area. The yellow area indicates the area within which conditional authorised clearing can occur under the granted clearing permit. The red areas indicate where clearing is to only be undertaken for rehabilitation activities.

2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)
- *Iron Ore (Mount Newman) Agreement Act 1964*

Relevant agreements (treatys) considered during the assessment include:

- Japan-Australia Migratory Bird Agreement
- China-Australia Migratory Bird Agreement
- Republic of Korea-Australia Migratory Bird Agreement

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2014)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- Guidance for the Assessment of Environmental Factors – *Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia* (EPA, 2004)
- Guidance for the Assessment of Environmental Factors – *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia* (EPA, 2004)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

The Amendment Supporting Document (BHP, 2024b) outlines commitments made by the Permit Holder for this application. These commitments are listed below:

- populations of Priority flora will be avoided by a 10 metre buffer where practicable;
- control of established weed populations will be carried out according to BHP's standard Weed Control and Management Procedures;
- should any active Mulgara burrows be identified they will be avoided using a 10 metre buffer, where practicable;
- active Western pebble-mound mouse mounds will be avoided using a 10 metre buffer, where practicable;
- where practicable, existing cleared tracks will be used to cross the unnamed non-perennial minor drainage lines. If it is necessary for new crossings to be installed, clearing will be kept to a bare minimum and will be constructed flat level to the surface to maintain the natural surface flow; and
- the permit boundary is being amended to exclude recently identified habitat features such as caves.

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

As of 30 June 2024, the entire amount of clearing allowed by the clearing permit (417.45 hectares) has been cleared under the previously granted clearing permits (CPS 4468/1, CPS 4468/2, and CPS 4468/3) (BHP, 2024a). Therefore, this amendment is needed to continue operations in the application area. In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix A) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

A review of current environmental information (Appendix A) reveals that the assessment against the clearing principles has not changed significantly from the Clearing Permit Decision Report CPS 4468/1. However, the variance of principles (a), (b) and (f) has been modified to represent the presence of conservation significant flora, fauna, fauna habitats, and watercourses in the amendment application area. Upon further review of the soils present in the application area, the proposed clearing is unlikely to be at variance with principle (g).

The assessment against the clearing principles identified that the impacts of the proposed clearing present a risk to biological values (fauna and flora). The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values (flora) - Clearing Principle (a)

Assessment

There have been fifteen flora and vegetation surveys across the amendment application area (BHP, 2024b). The most relevant surveys are:

- Jinidi Detailed Flora and Vegetation Survey Interim Report: Dry-season (Biologic, 2024a);
- Consolidation of Regional Vegetation Mapping BHP Billiton Iron Ore Pilbara Tenure (Onshore Environmental, 2014); and
- Flora and vegetation Review Jinidi Iron ore Project (Onshore Environmental, 2012).

Nine Priority flora species have been identified within the amendment application area. The assessment in Appendix A.2 indicates the proposed clearing is likely to have a significant impact on two of the species recorded (*Grevillea saxicola* (P3) and *Triodia* sp. Mt Ella (M.E. Trudgen 12739) (P3)). Given the percentage of the local population of these species to be impacted (see Appendix A.2), measures to avoid, mitigate and minimise will be placed on the clearing permit.

Ten introduced flora species (weeds) have been recorded within the amendment application area. None of them are listed as Declared Pests or Weeds of National Significance (BHP, 2024b). Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to the biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Conclusion

Based on the above assessment, the proposed clearing will result in impacts to *Grevillea saxicola* and *Triodia* sp. Mt Ella (M.E. Trudgen 12739).

For the reasons set out above, it is considered that the impacts of the proposed clearing on Priority flora can be managed by taking steps to avoid clearing the above-mentioned Priority flora species.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Flora management condition to avoid the *Grevillea saxicola* and *Triodia* sp. Mt Ella (M.E. Trudgen 12739) individuals that had been identified in flora and vegetation surveys conducted in the amendment application area including a 10 metre buffer.

3.2.2. Biological values (fauna) - Clearing Principle (b)

Assessment

There have been 14 vertebrate fauna surveys across the amendment application area (BHP, 2024b). The most relevant surveys are:

- Jinidi Targeted Vertebrate Fauna Survey (Biologic, 2024b); and
- Jinidi Vertebrate Fauna Survey (Biologic, 2011).

The surveys undertaken across the amendment application area have resulted in three fauna species of conservation significance (western pebble-mound mouse, Pilbara olive python, and northern quoll) being recorded within the amendment application area (Biologic, 2024b). One fauna species (ghost bat) has been recorded solely from habitat features which have been excluded from the amendment application area. Based on the occurrence of the habitat types and significant fauna species previously recorded in the vicinity an additional seven species are considered to potentially occur within the amendment application area (BHP, 2024b). Other species have been recorded within 50 kilometres of the application area. These fauna species are listed in Appendix A.3

An assessment of the potential impact of the proposed clearing on the species of significant fauna that may occur in the application amendment area is provided below.

Northern quoll (*Dasyurus hallucatus*) (Endangered)

There were 12 records of scats within the survey area that were identified as belonging to northern quolls (Biologic, 2024b). Only one of these records was located within the amendment application area. However, the Gorge/Gully, Breakaway/Cliff, and Major Drainage Line habitats meet the definition of critical habitat (rocky habitats such as ranges, escarpments, mesas, gorges, breakaways, boulder fields, major drainage lines or treed creek lines) for northern quoll (DoE, 2016). These habitats also provide critical foraging and dispersal habitat for the species. Potential supporting habitat for the northern quoll occurs in the Hillcrest/ Hillslope, Drainage Area/ Floodplain, and Minor Drainage Line habitats, where proximal to critical habitat (Gorge/ Gully, Breakaway/ Cliff, and Major Drainage Line) (Biologic, 2024b).

In consideration of the overall scarcity and concentration of records, the species is unlikely to be reliant on the habitats within the amendment application area for long-term persistence at a regional scale, however the habitat is considered critical for individual persistence within the amendment application area (Biologic, 2024b).

Greater bilby (*Macrotis lagotis*) (Vulnerable)

No evidence of occurrence of greater bilby was recorded within the survey area. Based on the limited number of nearby recent records, and lack of suitable Sand Plain habitat or evidence of species occurrence, the greater bilby is considered unlikely to occur in the amendment application area (Biologic, 2024b). Although the species is known to utilise broad habitats occurring within the amendment application area in other parts of its distribution such as Major Drainage Line, Mulga Woodland, and Drainage

Area/ Floodplain, these habitats are rarely utilised by the species within the Pilbara region, likely due to the high amount of alluvial material making substrates less suitable for burrowing activity compared to sand-plain habitats (Biologic, 2024b).

Ghost bat (*Macroderma gigas*) (Vulnerable)
Ghost bat was recorded on 18 occasions and 34 caves were identified in the survey area during the current surveys (Biologic, 2024b). Fourteen of these caves were in the amendment application area but have been excluded. This species may forage over the Drainage Area/ Floodplain, Stony Plain, Gorge/ Gully, Minor Drainage Line and Major Drainage Line habitats of the amendment application area as part of a larger home range (BHP, 2024b).

Due to the presence of known roosting caves and confirmed records within the amendment application area and surrounds, occurrence of suitable breeding and roosting habitat, and recent records of the species, it is likely to occur as a resident and utilise the above habitats within the amendment application area regularly for foraging (Biologic, 2024b).

Pilabara leaf-nosed bat (*Rhinonicteris aurantia*) (Vulnerable)
No calls from Pilbara leaf-nosed bats were recorded by ultrasonic recorders during the current survey. Of the 34 caves occurring within the survey area, none were assessed as likely or potentially suitable as Category 1, 2 or 3 roosts for Pilbara leaf-nosed bats (Biologic, 2024b). Currently, no habitat within the amendment application area is considered critical for the Pilbara leaf-nosed bat. Presently, the Gorge/ Gully, Breakaway/ Cliff, and Major Drainage Line habitats provide supporting foraging and dispersal habitat for the species and tend to contain important habitat features such as nocturnal refuges and water features.

While all known potential bat caves have been clipped from the amendment application area, none of these caves are considered suitable as a permanent or semi-permanent roosts for the Pilbara leaf-nosed bat (BHP, 2024b). Other supporting foraging and dispersal habitat for Pilbara leaf-nosed bat within the amendment application area is provided by Hillcrest/ Hillslope, Stony Plain, Drainage Area/ Floodplain, Mulga Woodland (Biologic, 2024b). The proposed clearing is unlikely to have a significant impact on the Pilbara leaf-nosed bat population of the local area.

Grey falcon (*Falco hypoleucos*) (Vulnerable)
No grey falcons were observed during the current surveys. The Major Drainage Line habitat is considered critical habitat for grey falcon. The Drainage Area/ Floodplain and Minor Drainage Line habitats may provide supporting habitat for foraging and dispersal functions; however, the species' occurrence is likely to be dependent on the proximity of nesting. Nesting may occur in Major or Minor Drainage Line habitats where suitable tall trees are present or suitable tall infrastructure such as powerline or transmission towers occurs. Critical habitat within the amendment application area is likely limited to the Major Drainage Line habitat (Biologic, 2024b).

Pilbara olive python (*Liasis olivaceus* subsp. *barroni*) (Vulnerable)
Evidence of Pilbara olive python was recorded from eight locations across the survey area, from live individuals, scats, and eDNA detection. Three of these locations are inside the amendment application area, one additional location was excluded from the application area as the Pilbara olive python was recorded near a water hole (Biologic, 2024b). For Pilbara olive pythons, these water features often act as critical foraging locations and for that reason it is often associated with such features, particularly in rocky habitat (Biologic, 2024b). All recorded water holes were excluded from the amendment application area.

Overall, the Gorge / Gully, Breakaway / Cliff, and Major Drainage Line habitats provide critical habitat for the Pilbara olive python. Areas of Major Drainage Line, and Minor Drainage Line areas that don't contain permanent or near-permanent water features are classified as supporting habitat, particularly in areas where they provide connectivity between areas of critical habitat. In addition, Hillcrest/Hillslope and Drainage Area/ Floodplain is considered supporting habitat (Biologic, 2024b).

Gane's blind snake (Pilbara) (*Anilios ganei*) (Priority 1)
Gane's blind snake (Pilbara) is a very cryptic species most often recorded in rocky or stony areas and considered to be possibly associated with moist gorges and gullies (BHP, 2024b). There are two records of this species (one inside an area excluded from the permit) both in Hill Crest / Hill Slope adjacent to Gorge / Gully habitat. The broader Hill Crest / Hill Slope habitats of the amendment application area may provide suitable habitat for this species, so it may disperse and forage through the amendment application area (BHP, 2024b).

It is possible that the gradins of access tracks and drill pads may result in a localised impact on this species' habitat. Given the regional distribution of Gane's blind snake (Pilbara), the loss of some habitat from the proposed clearing associated with the amendment application area is considered as being low when compared to the expansive areas of suitable habitat remaining and throughout in the Pilbara (BHP, 2024b).

Brush-tailed mulgara (*Dasycerus blythi*) (Priority 4)
The preferred habitat for this species (Sandplain habitat) is missing from the amendment application area. The three records in the amendment application area of this species were located within a sandy area of the Drainage Area / Floodplain habitat and the species may occur as a resident in small sections (BHP, 2024b). The species occurrence within the amendment application area is unlikely to represent an important population and the species is not likely to be reliant upon the habitat within the amendment application area, for the long-term persistence of the species at a local or regional scale (Biologic, 2024b).

Western pebble-mound mouse (*Pseudomys chapmani*) (Priority 4)
This species is common in the Hill Crest / Hill Slope habitat of the local and regional area. There are 63 active western pebble-mound mouse mounds within the amendment application area (BHP, 2024b). The species is likely to occur as a resident throughout the Survey Area, in Hillcrest / Hillslope and Stony Plain habitats (Biologic, 2024b). The conclusion of the fauna survey conducted by Biologic (2024b) concluded that the species occurrence within the survey area is unlikely to represent an important population and the species is not likely to be reliant upon the survey area, or habitat within, for the long-term persistence of the species at a local or regional scale. However, given the large amount of historical, current and proposed disturbance to vegetation in the area, there is the potential for this population to become significant in the local area (GIS Database).

Other species
The species listed below were identified in the desktop assessment as recorded within the vicinity of the amendment application area, the habitats within the amendment application area are unlikely to be relied upon by any of the species listed for their long-term persistence at a local and/or regional scale (Biologic, 2024b; GIS Database).

- *Apus pacificus* (Fork-tailed Swift) (Migratory);
- *Elanus scriptus* (Letter-winged kite) (Migratory);
- *Falco peregrinus* (Peregrine Falcon) (Other Specially Protected Fauna);
- *Sminthopsis longicaudata* (Long-tailed dunnart) (Priority 4); and
- *Underwoodisaurus seorsus* (Pilbara barking gecko) (Priority 2)

Conclusion
Conservation significant fauna of the region may be impacted by the proposed clearing in the amendment application area. The most significant impact is likely to occur in areas containing critical habitat for the northern quoll, Pilbara olive python, and the grey falcon. Significant impact to these areas of critical habitat can be avoided through a restricted clearing condition on the clearing permit.

It is considered that the impacts of the proposed clearing on active mounds for the Western pebble-mound mouse can be managed by taking steps to avoid clearing within a buffer of these mounds. Caves identified to be of importance for the ghost bat have been excluded from the amendment application area. For this reason, the proposed clearing is unlikely to represent a significant impact on the ghost bat.

The applicant may have notification responsibilities under the EPBC Act for impacts to northern quoll, Pilbara olive python, and grey falcon and their habitats, as set out in the EPBC Act. The applicant has been advised to contact the federal Department of Climate Change, Energy, the Environment and Water (DCCEEW) to discuss EPBC Act referral requirements.

Conditions
To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity;
- Clearing within areas identified to contain critical habitat for conservation significant species will be limited to necessary disturbance to undertake rehabilitation activities within disturbed areas;
- Avoid clearing within 10 metres of recorded active Western pebble-mound mouse mounds; and
- Retain vegetation and topsoil to utilise in rehabilitation efforts to avoid the permanent loss of fauna habitat.

3.3. Relevant planning instruments and other matters

The clearing permit amendment application was advertised on 17 January 2025 by the Department of Energy, Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim (WCD2018/008) over the area under application (DPLH, 2025). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group (Nyiyaparli People). However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are 22 registered Aboriginal Sites of Significance within the application area (DPLH, 2025). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

The application area is located within the EPA assessment for the BHP Pilbara Expansion Strategic Proposal (Assessment Number: 1934) (GIS Database). This proposal is to assess the construction and operation of iron ore mine developments. This proposal is not assessing mineral exploration, or other activities proposed for this clearing permit.

It is noted that the proposed clearing may impact on northern quoll, Pilbara olive python, and grey falcon and their habitats, which are a protected matter under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). The proponent may be required to refer the project to the (Federal) Department of Climate Change, Environment and Water for environmental impact assessment under the EPBC Act. The proponent is advised to contact the Department of Climate Change, Energy, the Environment and Water and the Environment for further information regarding notification and referral responsibilities under the EPBC Act.

It is the proponent's responsibility to liaise with the Department of Water and Environmental Regulation and the Department of Biodiversity, Conservation and Attractions, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia. It is surrounded by the landscape and native vegetation of the Pilbara bioregion (GIS Database).
Ecological linkage	Based on aerial imagery, the application area is not located within any formal or informal ecological linkages (GIS Database).
Conservation areas	The application area is not located within any known or mapped conservation areas. The closest record is Fortescue Marsh Nature Reserve located approximately 38 kilometres north-east of the application area (GIS Database).
Vegetation description	The vegetation of the application area is broadly mapped as the following Beard vegetation associations: 18: Low woodland, open low woodland or sparse woodland. Mulga *Acacia aneura* and associated species; and 82: Low tree-steppe. Hummock grassland with scattered bloodwoods & snappy gum *Triodia* spp., *Corymbia dichromophloia*, *Eucalyptus leucophloia* (GIS Database). Various flora and vegetation surveys have been conducted over the application area. On April 2013 Onshore Environmental Consultants Pty Ltd (Onshore Environmental) was commissioned by BHP Iron Ore to review the previous survey work and develop a single consolidated vegetation association map. The following vegetation associations are present within the application area (Onshore Environmental, 2014): ***Acacia* Low Open Forest (HC AcaoAa Ep Segl):** Low Open Forest of *Acacia catenulata* subsp. *occidentalis* and *Acacia aptaneura* with Very Open Mallee of *Eucalyptus pilbarensis* and Open Shrubland of *Senna glutinosa* subsp. x *luerssenii* on breakaways with brown sandy loam. ***Acacia* Low Open Forest (HS AcaoAaApr ScaErlIAb TbrTw):** Low Open Forest of *Acacia catenulata* subsp. *occidentalis*, *Acacia aptaneura* and *Acacia pruinocarpa* over Open Shrubland of *Scaevola acacioides*, *Eremophila latrobei* subsp. *latrobei* and *Acacia bivenosa* over Open Hummock Grassland of *Triodia brizoides* and *Triodia wiseana* on red brown clay loam on breakaway scree slopes and steep hill slopes. ***Acacia* Low Open Forest (SP AaApr ErcuColpSop TpTw):** Low Open Forest of *Acacia aptaneura* and *Acacia pruinocarpa* over with Low Open Shrubland of *Eremophila cuneifolia*, *Corchorus lasiocarpus* subsp. *parvus* and *Solanum phlomoides* over Hummock Grassland of *Triodia pungens* and *Triodia wiseana* on red brown clay loam on stony plains. ***Acacia* Open Scrub (MI AmAnlAanc Tp EllCh):** Open Scrub of *Acacia monticola*, *Androcalva luteiflora* and *Acacia ancistrocarpa* with Open Hummock Grassland of *Triodia pungens* and Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* on minor drainage lines with brown sandy loam. ***Acacia* Open Scrub (MI AtpPlAm TpTs ChEll):** Open Scrub of *Acacia tumida* var. *pilbarensis*, *Petalostylis labicheoides* and *Acacia monticola* over Open Hummock Grassland of *Triodia pungens* and *Triodia* sp. Shovelanna Hill (S.van Leeuwen 3835) with Low Open Woodland of *Corymbia hamersleyana* and *Eucalyptus leucophloia* subsp. *leucophloia* on red brown sandy loam on minor drainage lines. ***Corymbia* Low Woodland (GG CfEllFib AhDovmAsha CyaErmuThmb):** Low Woodland of *Corymbia ferriticola*, *Eucalyptus leucophloia* subsp. *leucophloia* and *Ficus brachypoda* over Open Shrubland of *Acacia hamersleyensis*, *Dodonaea viscosa* subsp. *mucronata* and *Astrotricha hamptonii* over Open Tussock Grassland of *Cymbopogon ambiguus*, *Eriachne mucronata* and *Themeda* sp. Mt Barricade on red brown loam along cliff lines and gorge walls. ***Eucalyptus* Low Open Forest (MA EcrEvEx ApypAtpGoro TtEuaCyp):** Low Open Forest of *Eucalyptus camaldulensis* subsp. *refulgens*, *Eucalyptus victrix* and *Eucalyptus xerothemica* over High Shrubland of *Acacia pyrifolia* var. *pyrifolia*, *Acacia tumida* var. *pilbarensis* and *Gossypium robinsonii* over Open Tussock Grassland of *Themeda triandra*, *Eulalia aurea* and *Cymbopogon procerus* on red brown clay loam on major drainage lines. ***Petalostylis* Shrubland (MI PlAtpAm ChEll TwTp):** Shrubland of *Petalostylis labicheoides*, *Acacia tumida* var. *pilbarensis* and *Acacia monticola* with Low Open Woodland of *Corymbia hamersleyana* and *Eucalyptus leucophloia* subsp. *leucophloia* over Open Hummock Grassland of *Triodia wiseana* and *Triodia pungens* on red brown loam on minor drainage lines. ***Themeda* Tussock Grassland (MA TtCc PlAbAnl EllCh):** Tussock Grassland of *Themeda triandra* and **Cenchrus ciliaris* with Shrubland of *Petalostylis labicheoides*, *Acacia bivenosa* and *Androcalva luteiflora* and Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* on red brown loam on drainage levees.

Characteristic	Details
	***Triodia* Hummock Grassland (CP TwTa Ese AbPlApyp):** Hummock Grassland of *Triodia wiseana* and *Triodia angusta* with Open Mallee of *Eucalyptus socialis* subsp. *eucentrica* and Open Shrubland of *Acacia bivenosa*, *Petalostylis labicheoides* and *Acacia pyrifolia* var. *pyrifolia* on light brown clay loam on calcrete plains and rises. ***Triodia* Hummock Grassland (FS Ts CdHc AancAiGrwh):** Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) with Low Open Woodland of *Corymbia deserticola* subsp. *deserticola* and *Hakea chordophylla* over Open Shrubland of *Acacia ancistrocarpa*, *Acacia inaequilatera* and *Grevillea wickhamii* subsp. *hispidula* on red brown sandy loam on footslopes and stony plains. ***Triodia* Hummock Grassland (FS TsTpTw Ell AbApaAanc):** Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia pungens* and *Triodia wiseana* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and Open Shrubland of *Acacia bivenosa*, *Acacia pachyacra* and *Acacia ancistrocarpa* on red brown loam on footslopes, low undulating hills and stony plains. ***Triodia* Hummock Grassland (HC TbrTw Ab Ep):** Hummock Grassland of *Triodia brizoides* and *Triodia wiseana* with Open Shrubland of *Acacia bivenosa* and Very Open Mallee of *Eucalyptus pilbarensis* on steep scree slopes with brown sandy loam. ***Triodia* Hummock Grassland (HC TpTwTs EllCh AarGooKeve):** Hummock Grassland of *Triodia pungens*, *Triodia wiseana* and *Triodia* sp. Shovelanna Hill (S. van Leeeuwin 3835) with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* over Low Shrubland of *Acacia arida*, *Gompholobium oreophilum* and *Keraudrenia velutina* subsp. *elliptica* on red brown loam on hill crests and upper hill slopes. ***Triodia* Hummock Grassland (HC Tw Ah EkkEgCh):** Hummock Grassland of *Triodia wiseana* with Shrubland of *Acacia hamersleyensis* and Open Mallee of *Eucalyptus kingsmillii* subsp. *kingsmillii*, *Eucalyptus gamophylla* and *Corymbia hamersleyana* (mallee form) on red brown loam and silty loam on hill crests. ***Triodia* Hummock Grassland (HS TbrTw Ell):** Hummock Grassland of *Triodia brizoides* and/or *Triodia wiseana* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* on brown sandy loam on steep hill slopes. ***Triodia* Hummock Grassland (HS TsTp EllAaApr AiAancAb):** Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) and *Triodia pungens* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia*, *Acacia aptaneura* and *Acacia pruinocarpa* with High Open Shrubland of *Acacia inaequilatera*, *Acacia ancistrocarpa* and *Acacia bivenosa* on hillslopes with brown sandy loam. ***Triodia* Hummock Grassland (HS TsTw Eg GrwhSeggAb):** Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) and *Triodia wiseana* with Very Open Mallee of *Eucalyptus gamophylla* over Open Shrubland of *Grevillea wickhamii* subsp. *hispidula*, *Senna glutinosa* subsp. *glutinosa* and *Acacia bivenosa* on red brown sandy clay loam on hill slopes. ***Triodia* Hummock Grassland (HS TsTwTp EllCh AhiAaa):** Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia wiseana* and *Triodia pungens* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* over Low Open Shrubland of *Acacia hilliana* and *Acacia adoxa* var. *adoxa* on red brown sandy loam on hill slopes. ***Triodia* Hummock Grassland (HS Tw Ab Ese):** Hummock Grassland of *Triodia wiseana* with Open Shrubland of *Acacia bivenosa* and Very Open Mallee of *Eucalyptus socialis* subsp. *eucentrica* on undulating calcrete low hills with brown sandy clay loam. ***Triodia* Hummock Grassland (ME TpTlo ExAciCh PlApypGoro):** Hummock Grassland of *Triodia pungens* and *Triodia longiceps* with Low Woodland of *Eucalyptus xerothermica*, *Acacia citrinoviridis* and *Corymbia hamersleyana* over High Shrubland of *Petalostylis labicheoides*, *Acacia pyrifolia* var. *pyrifolia* and *Gossypium robinsonii* on red brown clay loam on medium drainage lines and surrounding floodplains. ***Triodia* Hummock Grassland (SP TbTp HlAancAi Ch):** Hummock Grassland of *Triodia basedowii* and *Triodia pungens* with High Open Shrubland of *Hakea lorea* subsp. *lorea*, *Acacia ancistrocarpa* and *Acacia inaequilatera* and Scattered Low Trees of *Corymbia hamersleyana* on red brown loamy sand on stony plains. ***Triodia* Open Hummock Grassland (ME TpAmAnlApy ExCh):** Open Hummock Grassland of *Triodia pungens* High Shrubland of *Acacia monticola*, *Androcalva luteiflora* and *Acacia pyrifolia* and Low Open Woodland of *Eucalyptus xerothermica* and *Corymbia hamersleyana* on medium drainage lines and floodplains with brown sandy loam. ***Triodia* Open Hummock Grassland (SP TpTm AaExAcao ApaErffAads):** Hummock Grassland of *Triodia pungens* and *Triodia melvillei* with Low Open Woodland of *Acacia aptaneura*, *Eucalyptus xerothermica* and *Acacia catenulata* subsp. *occidentalis* and Open Shrubland of *Acacia pachyacra*,

Characteristic	Details
	Eremophila forrestii subsp. *forrestii* and *Acacia adsurgens* on red brown clay loam or silty loam on stony plains and floodplains.
Vegetation condition	The vegetation surveys (BHP, 2024b) indicate the vegetation within the proposed clearing area ranges from Excellent to Completely Degraded (Trudgen, 1991) condition. The full Trudgen (1991) condition rating scale is provided in Appendix C.
Climate and landform	The application area is located in an arid zone with an annual average rainfall (Newman Aero) of 327.5 millimetres (BoM, 2025).
Soil description	The soils within the application area are mapped as stony soils, calcareous shallow loam, red/brown non-cracking clay, and red shallow loam (DPIRD, 2025).
Land degradation risk	The application area falls within multiple land systems (DPIRD, 2025), which are described below (Van Vreeswyk et al., 2004): **Boolgeeda land system:** Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands and mulga shrublands. Vegetation is generally not prone to degradation and the system is not susceptible to erosion. **Egerton land system:** Dissected hardpan plains supporting mulga shrublands and hard spinifex hummock grasslands. The system is not susceptible to erosion. **McKay land system:** Hills, ridges, plateaux remnants and breakaways of meta sedimentary and sedimentary rocks supporting hard spinifex grasslands. Some areas are poorly accessible and the system is not prone to degradation or soil erosion. **Newman land system:** Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands. The system contains iron ore deposits which are currently being mined and deposits which are likely to be mined in the future. Erosional surfaces; plateaux and mountains. **Oakover land system:** Breakaways, mesas, plateaux and stony plains of calcrete supporting hard spinifex grasslands. The system is not generally prone to degradation or susceptible to soil erosion. **Platform land system:** Dissected slopes and raised plains supporting hard spinifex grasslands. The system is not susceptible to erosion. **Spearhole land system:** Gently undulating hardpan plains supporting groved mulga shrublands and hard spinifex. The system is not prone to erosion.
Waterbodies	The desktop assessment and aerial imagery indicated that various minor, non-perennial watercourses transect the area proposed to be cleared. The application area is not located near or adjacent to a wetland (GIS Database).
Hydrogeography	The application area is located within the Pilbara Groundwater Area, which is legislated by the RIWI Act 1914. The mapped groundwater salinity is 500-1,000 milligrams per litre total dissolved solids which is described as marginal quality (GIS Database).
Flora	Nine Priority flora species have been recorded within the application area (BHP, 2024b). These species are recoded in Appendix A.2. No Threatened flora species have been recorded within the amendment application area (GIS Database).
Ecological communities	None of the vegetation associations or landforms identified within the boundary of the amendment application area are associated with a Threatened or Priority Ecological Communities (Onshore Environmental, 2014).
Fauna	The surveys undertaken across the amendment application area have resulted in three fauna species of significance being recorded from within the amendment application area. One fauna species has been recorded from solely from habitat features which have been excluded from the amendment application area (BHP, 2024b).
Fauna habitat	Biologic (2024b) identified the following nine vertebrate fauna habitats within the amendment area: **Calcrete Plain:** The Calcrete Plain fauna habitat includes areas where some solid sheets of calcrete were present, but more commonly soils in this habitat were shallow red loams with calcrete rubble. The vegetation occurring differs from that of the surroundings, presumably due to the differences in soil type. Trees are isolated and the shrub layer tends to be sparse, with a low hummock grassland (*Triodia* sp.) dominant. **Stony Plain:** Comprises low-lying open plains and the rolling hills below upland areas, with very slight to no gradient. The substrate consists of gravel and pebbles, with vegetation dominated by *Triodia* and scattered Mulga, Eucalypt and *Acacia* trees, with patches of various small to medium shrub species. **Hillcrest/ Hillslope:** Comprises a rocky substrate, often with exposed bedrock, on moderate to steep slopes leading into lower footslopes. This habitat was characterised by steep slopes with a high proportion of coarse fragments dominated by ironstone. These can contain cracks and crevices. Instances of Gorge/ Gully is contained within this habitat. This habitat is usually dominated

Characteristic	Details
	by open *Eucalyptus* woodlands, *Acacia* and *Grevillea* scrublands and *Triodia* low hummock grasslands. **Breakaway/ Cliff:** Comprises single sided rock faces within steep mid-upper slopes with bare rock outcrops or cliffs (not the entire slope). **Gorge/ Gully:** Characterised by rugged, steep-sided valleys incised into the surrounding landscape. Gorges are deeply incised with vertical cliff faces, while gullies are more open (but not as open as Minor Drainage Lines). Caves and rock pools are most often encountered in this habitat type. Vegetation can be dense and complex in areas of soil deposition or sparse and simple where erosion has occurred. **Drainage Area/ Floodplain:** Lower lying plain often subjected to sheet flow following large rainfall events. Vegetation and substrates of this habitat was variable, often comprising scattered *Eucalyptus* over *Acacia* and/or *Grevillea* shrubs with an understory dominated by *Triodia* hummock grasses and/or mixed tussock grasses on alluvial substrates, often with heavy clays and gravel. Tussock grasses can be dominant within Drainage Area/ Floodplain habitat as a result of high rainfall events. **Minor Drainage Line:** Usually lacks a tall dense upper storey, but with a dense mid storey, including sparse *Eucalyptus* sp., and *Acacia* sp. over tussock grasses and *Triodia* sp. hummock grasses. **Major Drainage Line:** Comprises scattered *Eucalyptus* and *Acacias*, or mulga woodland, with an understory dominated by tussock grasses. The structure and condition of vegetation often varies seasonally, particularly following rainfall events. Vegetation condition often subject to heavy cattle grazing. This habitat type is prone to pooling and ponding in areas. Also supports the Weeli Wolli PEC, which has groundwater dependent vegetation species including silver cadjeput (*Melaleuca argentea*). **Mulga Woodland:** Comprises stands of mulga (*Acacia aneura*) over clay or stony substrates. Differs from other plains by having a monoculture of mulga compared to a diversity of other Acacia species.

A.2. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix E.1), and biological survey information, impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Total individuals recorded (amendment application area)	Total individuals in local area	Percentage of individuals to be cleared
Acacia subtiliformis	P3	10	9,025	<1%
Eremophila naaykensii	P3	32	1,423	~2.2%
Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)	P3	6	663	<1%
Grevillea saxicola	P3	183	493	~37.1%
Hibiscus sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	P2	2	629	<1%
Indigofera gilesii	P3	7	543	~1.3%
Lepidium catapycnon	P4	104	1,653	~6.3%
Rhagodia sp. Hamersley (M. Trudgen 17794)	P3	2	608	<1%
Triodia sp. Mt Ella (M.E. Trudgen 12739)	P3	260	3,059	~8.5%

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

(Biologic, 2024a; BHP, 2024b; GIS Database)

A.3. Fauna analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix E.1), and biological survey information, impacts to the following conservation significant fauna required further consideration. Aquatic species, or migratory birds that are associated with marine environments were not included in this assessment as the amendment application area in unlikely to provide suitable habitat for these types of fauna.

Species name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Anilios ganei (Gane's blind snake (Pilbara))	P1	Y	0 km	40	Y
Apus pacificus (Fork-tailed swift)	MI	Y	0 km	410	Y
Dasycercus blythi (Brush-tailed mulgara)	P4	Y	0 km	1,069	Y
Dasyurus hallucatus (Northern quoll)	EN	Y	0 km	7,925	Y
Elanus scriptus (Letter-winged kite)	P4	N	29.3 km	49	Y
Falco hypoleucos (Grey falcon)	VU	Y	28.2 km	190	Y
Falco peregrinus (Peregrine falcon)	OS	Y	13.45 km	1,756	Y
Liasis olivaceus barroni (Pilbara olive python)	VU	Y	0 km	233	Y
Macroderma gigas (Ghost bat)	VU	Y	<1 km	823	Y
Macrotis lagotis (Greater bilby)	VU	Y	8.11 km	4,233	Y
Pseudomys chapmani (Western pebble-mound mouse)	P4	Y	0 km	1,213	Y
Rhinonicteris aurantia (Pilbara) (Pilbara leaf-nosed bat)	VU	Y	<1 km	2,469	Y
Sminthopsis longicaudata (Long-tailed dunnart)	P4	N	46.4 km	282	Y
Underwoodisaurus seorsus (Pilbara barking gecko)	P2	Y	9.3 km	24	Y

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

(BHP, 2024b; Biologic, 2024b; GIS Database).

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: The application area contains various Priority flora species (see Appendix A.2). Out of the nine recorded Priority flora species, two species (*Grevillea saxicola* and *Triodia* sp. Mt Ella (M.E. Trudgen 12739)) are likely to be significantly impacted by the amended proposed clearing. There are various conservation significant fauna species recorded inside the application area (Biologic, 2024b; GIS Database) The application area intersects the buffer area of the Weeli Wolli Spring Priority Ecological Community (PEC) (GIS Database). However, none of the recorded vegetation types are representative of this PEC (Onshore Environmental, 2014).	At variance (changed from CPS 4468/3)	Yes *Refer to Section 3.2.1, above.*
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: The area proposed to be cleared contains potential critical breeding, denning, foraging, and dispersal habitat for conservation significant fauna (Biologic, 2024b).	At variance (changed from CPS 4468/3)	Yes *Refer to Section 3.2.2, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: The are no records of Threatened flora species in the application area (Biologic, 2024a; BHP, 2024b; GIS Database).	Not likely to be at variance (as per CPS 4468/3)	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (d): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."* Assessment: The area proposed to be cleared does not contain vegetation that can indicate the presence of a Threatened Ecological Community (BHP, 2024b). The application area does not intersect any known or mapped TECs (GIS Database).	Not likely to be at variance (as per CPS 4468/3)	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: The application area falls within the Pilbara Bioregion of the Interim Biogeographic Regionalisation for Australia (GIS Database). Over 99 per cent of the pre-European vegetation still exists in the Pilbara Bioregion (Government of Western Australia, 2019). The application area is broadly mapped as Beard vegetation associations 18 and 82 (GIS Database). These vegetation associations have not been extensively cleared as over 99 per cent of the pre-European extent of these vegetation associations remain uncleared at both the state and bioregional level (Government of Western Australia, 2019).	Not at variance (as per CPS 4468/3)	No
Principle (h): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."* Assessment: Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of mapped conservation areas (GIS Database).	Not likely to be at variance (as per CPS 4468/3)	No
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: Given several water courses are recorded within the application area (GIS Database), the proposed clearing is likely to impact vegetation growing in, or in association with, an environment associated with a watercourse.	At variance (changed from CPS 4468/3)	No
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The mapped soils in the land systems intersecting the application area are not susceptible to erosion (Van Vreeswyk et al., 2004). It is not anticipated that the removal of vegetation will contribute to increased amounts of wind or water erosion in the application area (BHP, 2024b). Noting the location of the application area, the proposed clearing is not likely to cause appreciable land degradation.	Not likely to be at variance (changed from CPS 4468/3)	No
Principle (i): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."* Assessment: Given no permanent water courses, wetlands, or Public Drinking Water Sources Areas are recorded within the application area (GIS Database), the proposed clearing is unlikely to cause deterioration in the quality of surface or underground water.	Not likely to be at variance (as per CPS 4468/3)	No
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment: Given no permanent water courses or wetlands are recorded within the application area (GIS Database), the proposed clearing is unlikely to cause, or exacerbate, the incidence or intensity of flooding.	Not likely to be at variance (as per CPS 4468/3)	No

Appendix C. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Trudgen, M.E. (1991) *Vegetation condition scale* in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

Measuring vegetation condition for the Eremaean and Northern Botanical Provinces (Trudgen, 1991)

Condition	Description
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Very poor	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Fauna habitat photos

Figure 1. Hillcrest/ Hillslope fauna habitat (Biologic, 2024b).

Figure 2. Drainage Area/ Floodplain fauna habitat (Biologic, 2024b).

Figure 3. Stony Plain fauna habitat (Biologic, 2024b).

Figure 4. Mulga Woodland fauna habitat (Biologic, 2024b).

Figure 5. Gorge / Gully fauna habitat (Biologic, 2024b).

Figure 6. Minor Drainage Line fauna habitat (Biologic, 2024b).

Figure 7. Major Drainage Line fauna habitat (Biologic, 2024b).

Figure 8. Calcrete Plain fauna habitat (Biologic, 2024b).

Appendix E. Sources of information

E.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- Aboriginal Heritage Places (DPLH-001)
- Clearing Regulations - Environmentally Sensitive Areas (DWER-046)
- Clearing Regulations - Schedule One Areas (DWER-057)
- DBCA - Lands of Interest (DBCA-012)
- DBCA - Legislated Lands and Waters (DBCA-011)
- DBCA Fire History (DBCA-060)
- Esri World Imagery
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation (DPIRD-006)
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

- Threatened and Priority Flora (TPFL)
- Threatened and Priority Flora (WAHerb)
- Threatened and Priority Fauna
- Threatened and Priority Ecological Communities
- Threatened and Priority Ecological Communities (Buffers)

E.2. References

BHP Iron Ore (BHP) (2024a) Annual Environmental Report. Report prepared for the Department of Energy, Mines, Industry Regulation and Safety, October 2024.

BHP Iron Ore (BHP) (2024b) Native Vegetation Clearing Permit Amendment Application Supporting Document. Unpublished report prepared for the Department of Energy, Mines, Industry Regulation and Safety, June 2024.

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Government of Western Australia (2019) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions. https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics

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4. Glossary

Acronyms:

BC Act	*Biodiversity Conservation Act 2016,* Western Australia
BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DCCEEW	Department of Climate Change, Energy, the Environment and Water, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia (now DEMIRS)
DMP	Department of Mines and Petroleum, Western Australia (now DEMIRS)
DoEE	Department of the Environment and Energy (now DCCEEW)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora (now known as Threatened Flora)
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	*Environmental Protection Act 1986*, Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia

IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	*Rights in Water and Irrigation Act 1914*, Western Australia
TEC	Threatened Ecological Community

Definitions:

{DBCA (2023) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia}:

T **Threatened species:**

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the Biodiversity Conservation Act 2016 (BC Act).

Threatened fauna is the species of fauna that are listed as critically endangered, endangered or vulnerable threatened species.

Threatened flora is the species of flora that are listed as critically endangered, endangered or vulnerable threatened species.

The assessment of the conservation status of threatened species is in accordance with the BC Act listing criteria and the requirements of Ministerial Guideline Number 1 and Ministerial Guideline Number 2 that adopts the use of the International Union for Conservation of Nature (IUCN) Red List of Threatened Species Categories and Criteria, and is based on the national distribution of the species.

CR **Critically endangered species**
Threatened species considered to be "*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines.

EN **Endangered species**
Threatened species considered to be "*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines.

VU **Vulnerable species**
Threatened species considered to be "*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines.

Extinct Species:

EX **Extinct species**
Species where "*there is no reasonable doubt that the last member of the species has died*", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

EW **Extinct in the wild species**
Species that *"is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild.

Specially protected species:

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

MI **Migratory species**
Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Migratory species include birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) or The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

CD **Species of special conservation interest (conservation dependent fauna)**
Species of special conservation need that are dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Currently only fauna are listed as species of special conservation interest.

OS **Other specially protected species**
Species otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Currently only fauna are listed as species otherwise in need of special protection.

P **Priority species:**

Priority is not a listing category under the BC Act. The Priority Flora and Fauna lists are maintained by the department and are published on the department's website.

All fauna and flora are protected in WA following the provisions in Part 10 of the BC Act. The protection applies even when a species is not listed as threatened or specially protected, and regardless of land tenure (State managed land (Crown land), private land, or Commonwealth land).

Species that may possibly be threatened species that do not meet the criteria for listing under the BC Act because of insufficient survey or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of prioritisation for survey and evaluation of conservation status so that consideration can be given to potential listing as threatened.

Species that are adequately known, meet criteria for near threatened, or are rare but not threatened, or that have been recently removed from the threatened species list or conservation dependent or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of priority status is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

P1 **Priority One - Poorly-known species – known from few locations, none on conservation lands**
Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, for example, agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation.

Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements for threatened listing and appear to be under immediate threat from known threatening processes. These species are in urgent need of further survey.

P2 **Priority Two - Poorly-known species – known from few locations, some on conservation lands**
Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, for example, national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation.

Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements for threatened listing and appear to be under threat from known threatening processes. These species are in urgent need of further survey.

P3 **Priority Three - Poorly-known species – known from several locations**
Species that are known from several locations and the species does not appear to be under imminent threat or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat.

Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. These species need further survey.

P4 **Priority Four - Rare, Near Threatened and other species in need of monitoring**

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as a conservation dependent specially protected species.

(c) Species that have been removed from the list of threatened species or lists of conservation dependent or other specially protected species, during the past five years for reasons other than taxonomy.

(d) Other species in need of monitoring.

Principles for clearing native vegetation:

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

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

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

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

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

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

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

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

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

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