



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	10032/1
Permit type:	Purpose Permit
Applicant name:	Fortescue Metals Group
Application received:	19 December 2022
Application area:	1.61 hectares
Purpose of clearing:	Construction and maintenance of an access track
Method of clearing:	Mechanical Removal
Tenure:	<i>Iron Ore (Hamersley Range) Agreement Act 1963</i> , Mineral Lease 4SA (AML 70/4)
Location (LGA area):	Shire of Ashburton
Colloquial name:	Hendrix East Access Track

1.2. Description of clearing activities

Fortescue Metals Group proposes to clear up to 1.61 hectares of native vegetation within a boundary of approximately 4.16 hectares, for the purpose of construction and maintenance of an access track (FMG, 2022). The project is located approximately 110 kilometres west of the Township of Tom Price, within the Shire of Ashburton (GIS Database).

The application is to allow for the continued maintenance and construction of the Hendrix East Access Track (FMG, 2022). A total of 1.06 hectares of native vegetation has been previously cleared under the now expired permit CPS 7627/1. Clearing permit CPS 7627/1 was granted by the Department of Mines and Petroleum (now the Department of Mines, Industry Regulation and Safety) on 3 August 2017 and was valid from 26 August 2017 to 31 August 2022. This application will allow for the continued maintenance and construction of the access track.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	14 March 2023
Decision area:	1.61 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Mines, Industry Regulation and Safety (DMIRS) on 19 December 2022. DMIRS 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 D), 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 0).

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; and
- impacts to conservation significant flora.

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 long-term adverse impacts on 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;
- retain vegetative material and topsoil, revegetation and rehabilitation; and
- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.

1.5. Site map

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

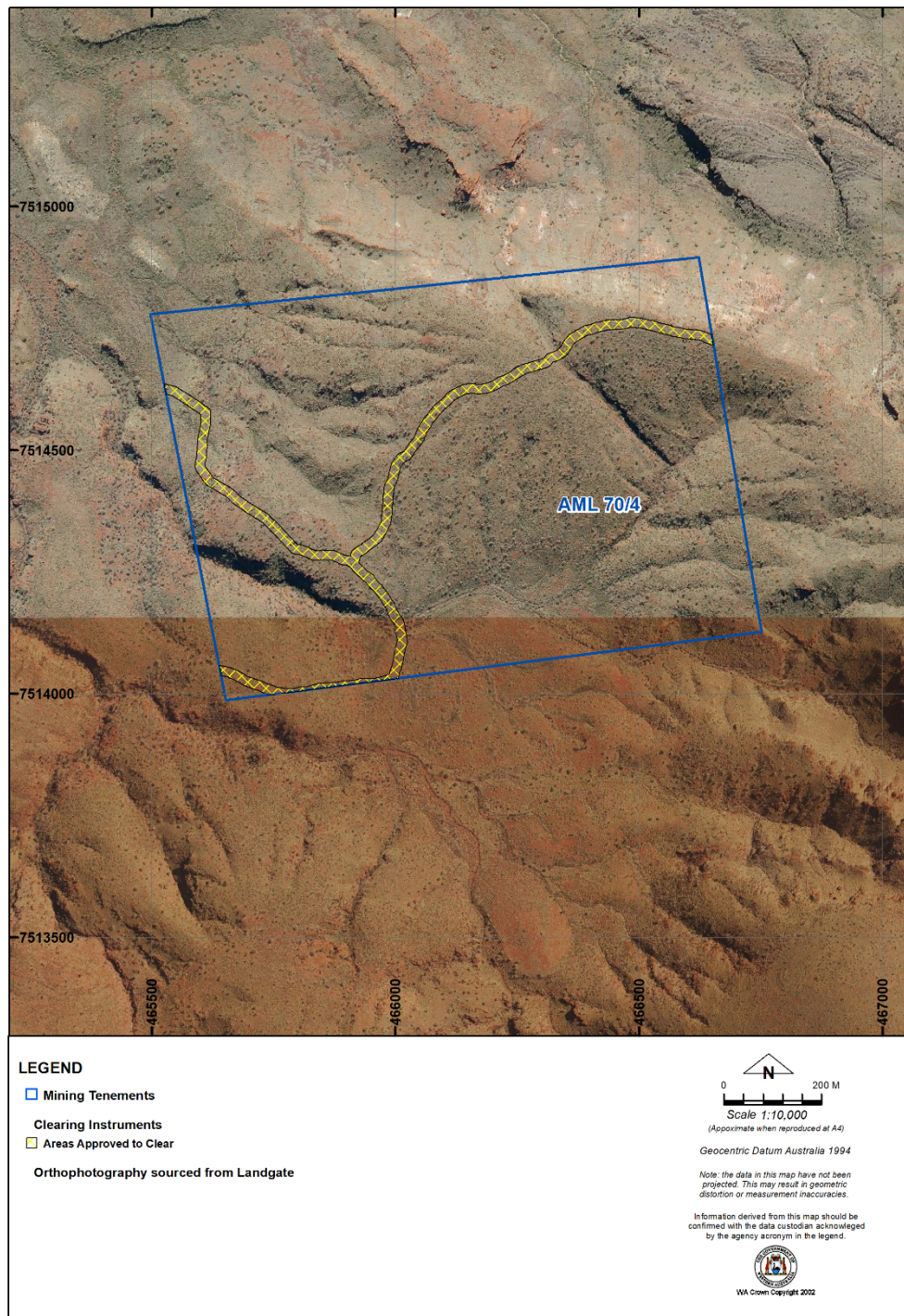


Figure 1. Map of the application area. The yellow area indicates the area within which conditional authorised clearing can occur under the granted clearing permit.

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:

CPS 10032/1

- *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)*
- *Iron Ore (Hamersley Range) Agreement Act 1963*

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation (DER, December 2013)*
- *Procedure: Native vegetation clearing permits (DWER, October 2019)*

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

Fortescue Metals Group (FMG) has identified the potential risk pathways, impacts and management actions that will arise from ongoing maintenance and continued construction of the access track (FMG, 2022). The following management actions will be implemented:

- vehicles will be confined to defined roads and access tracks
- where significant flora and vegetation have been identified, they will be recorded and appropriately flagged in the field
- prior to conducting ground disturbance activities, ensure known locations of environmentally sensitive areas to be retained and protected from disturbance are identified on the ground by appropriate signage, fencing or flagging
- weed hygiene will be implemented for plant and equipment
- vehicles will adhere to appropriate speed limits
- dust suppression will be carried out regularly
- vehicles will be restricted to daylight hours only (FMG, 2022)

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

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.

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 Principles (a) and (c)

Assessment

A flora and vegetation survey was undertaken of the tenement in June/July 2017 (Rio Tinto, 2018). Six conservation significant flora species were recorded within the greater survey area, three were recorded within the tenement and two were recorded within the application area (Rio Tinto, 2018). Based on available habitat and previous records, an additional 18 conservation significant flora species may potentially occur within the application area (Appendix A) (GIS Database).

The following two Priority species were recorded within the application area during the flora and vegetation survey (Rio Tinto, 2018):

Indigofera rivularis (previously named *Indigofera* sp. Bungaroo Creek), Priority 3, is an erect shrub, 1-2.5 metres high (Western Australian Herbarium, 1998-). This species occurs in the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) region, along rocky creek-lines in open low woodland of eucalypts and Acacias on ironstone substrates (Western Australian Herbarium (1998-). *Indigofera rivularis* is known from 61 locations from the WA Herbarium (Western Australian Herbarium, 1998-). The flora and vegetation survey recorded 114 locations (706 individuals) of this species within the survey area, 48 (451 individuals) of these locations were recorded within the tenement, and one individual was recorded within the application area (Rio Tinto, 2018). The relatively small scale of clearing required for the access track maintenance and continued construction with the potential clearing of a minimum of one *Indigofera rivularis* individual is not considered to have a significant impact on the species.

Triodia pisolitica (previously named *Triodia* sp. Robe River), Priority 3, is a tussock-forming perennial, 0.4-0.9 metres high (Western Australian Herbarium, 1998-). The species is restricted to the far western Hamersley sub-bioregion of the Pilbara bioregion and can often be found growing on the edges and tops of mesas (Western Australian Herbarium, 1998-). *Triodia pisolitica* is known from 64 locations from the WA Herbarium (Western Australian Herbarium, 1998-). The flora and vegetation survey recorded 200 locations (11,263 individuals) of this species within the survey area, 22 (737 individuals) of these locations were recorded within the tenement, and one location (20 individuals) was recorded within the application area (Rio Tinto, 2018). The relatively small scale of clearing required for the access track maintenance and continued construction with the potential clearing of a minimum of 20 *Triodia pisolitica* individuals is not considered to have a significant impact on the species.

The following three conservation significant species were recorded within the greater survey area during the flora and vegetation survey and may potentially occur within the application area (Rio Tinto, 2018).

Rhynchosia bungarensis, Priority 4, is a compact, prostrate shrub, 0.5 metres high (Western Australian Herbarium, 1998-). The species is known from 87 locations from the WA Herbarium from the Carnarvon, Gascoyne, Pilbara and

Tanami IBRA regions (Western Australian Herbarium, 1998-). *Rhynchosia bungarensis* can be found inhabiting pebbly, shingly coarse sand amongst boulders on banks of flow lines in the mouth of gullies in valley walls (Western Australian Herbarium, 1998-). The species is known from 87 locations from the WA Herbarium (Western Australian Herbarium, 1998-). The flora and vegetation survey recorded 15 locations (72 plants) of this species within the survey area, 3 (5 individuals) of these locations were recorded within the tenement, and no individuals were recorded within the application area (Rio Tinto, 2018). The application area contains suitable habitat for this species and therefore individuals may occur. The relatively small scale of clearing required for the access track maintenance and continued construction with the potential clearing of *Rhynchosia bungarensis* individuals is not considered to have a significant impact on the species.

Sida sp. Hamersley Range, Priority 3, is a low spreading shrub, 0.3 metres high (Western Australian Herbarium, 1998-). The species is known from 18 locations from the WA Herbarium from the Pilbara IBRA region and has a range of approximately 165 kilometres (Rio Tinto, 2018; Western Australian Herbarium, 1998-). *Sida* sp. Hamersley Range can often be found at the base of ironstone cliffs or breakaways in high altitudes (Rio Tinto, 2018; Western Australian Herbarium, 1998-). The flora and vegetation survey recorded three locations (31 plants) of this species within the survey area and no individuals were recorded within the tenement or application area (Rio Tinto, 2018). The application area contains suitable habitat for this species and therefore individuals may occur. The relatively small scale of clearing required for the access track maintenance and continued construction with the potential clearing of *Sida* sp. Hamersley Range individuals is not considered to have a significant impact on the species.

Eremophila magnifica subsp. *Magnifica*, Priority 4, is a shrub growing 0.5-1.5 metres high (Western Australian Herbarium (1998-)). The species is known from 46 locations from the WA Herbarium from the Pilbara IBRA region and can be found inhabiting skeletal soils over iron stone on rocky screes (Western Australian Herbarium (1998-)). The flora and vegetation survey recorded 55 locations (276 individuals) of this species within the survey area and no individuals were recorded within the tenement or application area (Rio Tinto, 2018). The application area contains suitable habitat for this species and therefore individuals may occur. The relatively small scale of clearing required for the access track maintenance and continued construction with the potential clearing of *Eremophila magnifica* subsp. *Magnifica* individuals is not considered to have a significant impact on the species.

Ptilotus mollis, Priority 4, is a compact, perennial shrub, growing 0.5 metres high (Western Australian Herbarium (1998-)). The species is known from 43 locations from the WA Herbarium from the Little Sandy Desert and Pilbara IBRA region and can be found on stony hills and screes (Western Australian Herbarium (1998-)). The flora and vegetation survey recorded 21 locations (368 individuals) of this species within the survey area and no individuals were recorded within the tenement or application area (Rio Tinto, 2018). The application area contains suitable habitat for this species and therefore individuals may occur. The relatively small scale of clearing required for the access track maintenance and continued construction with the potential clearing of *Ptilotus mollis* individuals is not considered to have a significant impact on the species.

The following 18 conservation significant species may potentially occur within the application area (GIS Database). These species have been recorded within 50 kilometres of the application area and suitable habitat is present, however they were not recorded during the flora and vegetation survey (Rio Tinto, 2018; GIS Database). The clearing may result in the potential clearing of individuals of these species, however it is not considered to have a significant impact due to the small scale of the clearing needed for the maintenance and continued construction of the access track (Rio Tinto, 2018, GIS Database):

- *Cyanthillium gracile*, Priority 3
- *Dicladanthera glabra*, Priority 2
- *Indigofera rivularis*, Priority 3
- *Eremophila magnifica* subsp. *Velutina*, Priority 3
- *Solanum* sp. *W Hamersley Range*, Priority 1
- *Triodia* sp. *Silvergrass*, Priority 1
- *Acacia bromilowiana*, Priority 4
- *Dolichocarpa* sp. *Hamersley Station*, Priority 3
- *Euphorbia inappendiculata* var. *inappendiculata*, Priority 2
- *Fimbristylis sieberiana*, Priority 3
- *Goodenia berringbinensis*, Priority 4
- *Grevillea saxicola*, Priority 3
- *Oxalis* sp. *Pilbara*, Priority 2
- *Rostellularia adscendens* var. *latifolia*, Priority 3
- *Solanum* sp. *Red Hill*, Priority 3
- *Triodia basitricha*, Priority 3
- *Ptilotus subspinescens*, Priority 3
- *Vittadinia* sp. *Coondewanna Flats*, Priority 3

Seven conservation significant flora species have been recorded within a 50 kilometre radius of the application area (GIS Database). One Priority 1 species (*Terminalia supranitifolia*), two Priority 2 species (*Gompholobium karijini* and *Paspalidium retiglume*), three Priority 3 species (*Terminalia supranitifolia*, *Glycine falcate* and *Themeda* sp. *Hamersley Station*) and one Priority 4 species (*Livistona alfredii*). As the application area does not provide suitable habitat for these species, it is considered unlikely that they would occur and the proposed clearing would not have a significant impact on the species.

Conclusion

Based on the above assessment, the proposed clearing will result in the removal of priority flora. For the reasons set out above, it is considered that the impacts of the proposed clearing on flora can be managed by the mitigation and management strategies provided by the applicant.

Conditions

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

- avoid, minimise to reduce the impacts and extent of clearing; and
- take hygiene steps to minimise the risk of the introduction and spread of weeds.

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

Assessment

A basic fauna habitat survey was completed in June/July 2017 (Rio Tinto, 2018). No conservation significant vertebrate fauna were recorded within the application area (Rio Tinto, 2018; GIS Database). Eleven conservation significant fauna species may potentially occur within the application area (Appendix Fauna analysis tableA.4) (Rio Tinto, 2018; GIS Database):

- *Rhinioncteris aurantia* (Pilbara) (Pilbara leaf-nosed bat);
- *Falco peregrinus* (peregrine falcon);
- *Liasis olivaceus barroni* (Pilbara olive python);
- *Macroderma gigas* (ghost bat);
- *Notoscincus butleri* (lined soil-crevice skink (Dampier));
- *Pseudomys chapmani* (western pebble-mound mouse, ngadji);
- *Apus pacificus* (fork-tailed swift);
- *Dasyurus hallucatus* (northern quoll);
- *Falco hypoleucos* (grey falcon);
- *Ninox connivens connivens* (barking owl (southwest subpop.)); and
- *Sminthopsis longicaudata* (long-tailed dunnart).

Rhinioncteris aurantia (Pilbara) (Pilbara leaf-nosed bat), Vulnerable, has been recorded within five kilometres of the application area (Rio Tinto, 2018; GIS Database). This species is a small insectivorous bat that occurs throughout the Pilbara and adjacent upper Gascoyne regions of Western Australia (DaWE, 2023). The Pilbara leaf-nosed bat inhabits abandoned mine shafts, granite rock pile terrain of the east Pilbara and caves formed in gorges that dissect sedimentary geology in the west Pilbara (DaWE, 2023). The species was recorded from echolocation records suggesting they roost within five kilometres of the application area (Rio Tinto, 2018). However, no water pools, deep suitable roosting caves or individuals were recorded following a targeted survey (Rio Tinto, 2018). This species potentially may use the area for foraging, however the small scale of the clearing for 1.61 hectares is unlikely to lead to a significant impact to this species.

Falco peregrinus (peregrine falcon), Other Specially Protected Species, is one of the most widespread birds in the world and occurs across most of Australia (DaWE, 2023). The species inhabits cliffs, coastal habitats, rivers, wooded water courses, lakes and urban environments (DaWE, 2023). No individuals were recorded during the survey, however, this species has been recorded within 20 kilometres from the application area, suggesting they may use this habitat for foraging (GIS Database). As the habitat present is not considered significant to this species, the proposed clearing is not likely to have significant impacts.

Liasis olivaceus barroni (Pilbara olive python), Vulnerable, is restricted to ranges within the Pilbara region, north-western Western Australia, such as the Hamesley Range, and the Dampier Archipelago and is only known from 17 locations within the Pilbara (DaWE, 2023). The species inhabits escarpments, gorges and water holes in the ranges of the Pilbara region usually in close proximity to water and shelters in logs, flood debris, caves, tree hollows and tick vegetation close to water and rock outcrops (DaWE, 2023, Rio Tinto, 2018). As rocky habitat exists within the application area, there is potential for the species to be present, however due to the lack of permanent water sources within or near the application area, it is unlikely that the small scale of clearing will significantly impact the species at a local or regional level.

Macroderma gigas (ghost bat), Vulnerable, is the largest microchiropteran bat in Australia and Australia's only carnivorous bat (DaWE, 2023). The species has geographically disjunct colonies occurring in the Pilbara, Kimberley, northern Northern Territory, the Gulf of Carpentaria, coastal and near coastal eastern Queensland and western Queensland (DaWE, 2023). During the daytime, the ghost bat roost in caves, rock crevices and old mines with a relatively stable temperature and moderate to high humidity (DaWE, 2023). No ghost bats were recorded from the echolocation survey and no evidence of ghost bat scats were recorded from the caves inspected within the area (Rio Tinto, 2018). Potential foraging habitat exists within the application area however the relatively small clearing for access tracks is not likely to lead to a significant impact to the species at a local or regional level.

Notoscincus butleri (lined soil-crevice skink (Dampier)), Priority 4, is endemic to Western Australia and is restricted to the arid north-west of the Pilbara bioregion (Rio Tinto, 2018). The species can be found inhabiting rocky, spinifex dominated areas near creek and river margins (Rio Tinto, 2018). The species has not been previously recorded within the application area, however as there is suitable habitat present it could potentially occur (GIS Database). The relatively small scale of the clearing for the access tracks is not likely to lead to a significant impact to the species at the local or regional level.

Pseudomys chapmani (western pebble-mound mouse, ngadji), Priority 4, is endemic to the Pilbara region of Western Australia (Rio Tinto, 2018). The species is patchily distributed on gentle colluvial slopes of rocky, hummock grasslands with little or no soil and a spare shrub layer (Rio Tinto, 2018). The species has been recorded within 20 kilometres of the application area and suitable habitat is present, however as the clearing is for the maintenance and continued construction of the access tracks, and the relatively low scale of the proposed clearing, the clearing will not lead to significant impacts to the species.

Apus pacificus (fork-tailed swift), Migratory, are widespread in coastal and subcostal areas, including some on nearshore and offshore and are found in the north and north-west Gascoyne Region islands (DaWE, 2023). The species is almost exclusively

aerial and has been recorded across a range of habitats (DaWE, 2023). This species has been recorded within 50 kilometres of the application area and suitable habitat is present, however the habitat within the application area is not considered significant to the species and the clearing is not likely to lead to a significant impact.

Dasyurus hallucatus (northern quoll), Endangered, occurs in five regional populations across Queensland, the Northern Territory and Western Australia both on the mainland and on offshore islands (DaWE, 2023). Records from the Pilbara bioregion are scattered across four subregions and the majority of the records have come from the Rocklea, Macroy and Robe land systems (DaWE, 2023). This species occupies a diversity of habitats generally encompasses some sort of rocky area for denning purposes with surrounding vegetated habitat used for foraging and dispersal (DaWE, 2023). Suitable habitat is present within the application area, however due to the small scale of clearing, the impacts to this species is not considered significant.

Falco hypoleucos (grey falcon), Vulnerable, is an elusive species endemic to mainland Australia, occurring in arid and semi-arid Australia (DaWE, 2023). The species has been recorded in timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined water courses (DaWE, 2023). The species has been recorded within 50 kilometres from the application area and may forage within the area, however the proposed clearing will not likely lead to a significant impact to this species.

Sminthopsis longicaudata (long-tailed dunnart), Priority 4, is known from the Pilbara and eastern coast to the north-western goldfields and Gibson desert south to the Nullabor Plain, to central Territory and western South Australia (DaWE, 2023). The species inhabits exposed rock and stony soils with hummock grasses and shrubs, flat-topped hills, lateritic plateaus, sandstone ranged and breakaways (DaWE, 2023). The species has been recorded within 50 kilometres of the application area and suitable habitat is present, however the relatively small scale of the clearing will not likely lead to a significant impact to the species.

Ninox connivens connivens (barking owl (southwest subpopulation), Priority 3, is a nocturnal bird species native to mainland Australia and parts of Papua New Guinea and the Moluccas and are often found inhabiting open dry eucalypt woodland, riparian scrubs and Melaleuca woodland and often forage near watercourses (Queensland Government, 2021). There may be suitable habitat present for the species, however, the application area lies outside its distribution and only one record of this species was identified within 50 kilometres of the application area (GIS Database). The clearing is not likely to lead to a significant impact to this species.

Conclusion

Based on the above assessment, the proposed clearing will result in loss of potential habitat for a number of conservation significant fauna species. For the reasons set out above, it is considered that the impacts of the proposed clearing on fauna habitats can be managed by taking steps to mitigate and avoid clearing of native vegetation and by slow directional clearing to allow fauna.

Conditions

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

- direction of clearing: Slow directional clearing to allow fauna to move into adjacent vegetation ahead of the clearing activity which will minimise impact to individuals; and
- avoid, minimise and reduce the impacts and extent of clearing.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 10 February 2023 by the Department of 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 over the area under application (DPLH, 2023). This claim has been determined by the Federal Court on behalf of the claimant group. 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 no registered Aboriginal Sites of Significance within the application area (DPLH, 2023). 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.

Other relevant authorisations required for the proposed land use include:

- A Programme of Work approved under the *Mining Act 1978*.

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 located approximately 110 kilometres west of the Township of Tom Price, within the Shire of Ashburton (GIS Database). The area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia (GIS Database). The main use of land surrounding the application area is pastoral activities and mineral exploration (FMG, 2022; GIS Database).
Ecological linkage	According to available databases, the application area does not contain any known or mapped ecological linkages (GIS Database).
Conservation areas	There are no conservation areas located within the application area (GIS Database). The closest conservation area is Karijini National Park (R 30082) located approximately 80 kilometres north-east of the application area (GIS Database).
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation association:</p> <ul style="list-style-type: none"> 82: Hummock grasslands, low tree steppe; snappy gum over <i>Triodia wiseana</i> (GIS Database). <p>A flora, vegetation and habitat survey was conducted over the application area during June/July 2017. The following vegetation types were recorded within the application area (Rio Tinto, 2018):</p> <ul style="list-style-type: none"> U1: Low open woodland of <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> over open shrubland of <i>Acacia arida</i> and <i>Acacia marramamba</i> over hummock grassland of <i>Triodia wiseana</i> and <i>Triodia</i> sp. Robe River; D1: Low open woodland of <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> over open shrubland of <i>Acacia bivenosa</i>, <i>Acacia monticola</i> and <i>Acacia arida</i> over open hummock grassland of <i>Triodia wiseana</i> over scattered grasses of <i>Cymbopogon ambiguous</i> and <i>Eriachne mucronata</i>; U2: Scattered low trees of <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> over open shrubland of <i>Acacia bivenosa</i> over hummock grassland of <i>Triodia wiseana</i>; G1: Low woodland of <i>Corymbia ferritcola</i> over tall open shrubland of <i>Acacia citrinoviridis</i> over open hummock grassland of <i>Triodia wiseana</i> over open tussock grassland of <i>Eriachne mucronata</i> and <i>Cymbopogon ambiguous</i>; and R1: Scattered low trees of <i>Corymbia ferritcola</i> over tall open shrubland of <i>Dodonaea pachyneura</i> and mixed <i>Acacia</i> species over scattered low shrubs of <i>Triumfetta maconochieana</i> over open hummock grassland of <i>Triodia</i> sp. Robe River and <i>Triodia wiseana</i> over open tussock grassland of <i>Eriachne mucronata</i>.
Vegetation condition	<p>The aerial imagery indicate the vegetation within the proposed clearing area is in 'Excellent' to 'Completely Degraded' (Trudgen, 1991) condition, described as</p> <ul style="list-style-type: none"> Excellent: Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement. 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. <p>The full Trudgen (1991) condition rating scale is provided in Appendix B.</p>
Climate and landform	According to climate data obtained from the Bureau of Meteorology (BoM), the mean annual rainfall the area experiences is 320.9 millilitres (BOM, 2022).
Soil description	<p>The soils of the application area are broadly mapped as the following soil type:</p> <ul style="list-style-type: none"> 285Ne: Newman System. Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands.
Land degradation risk	The Newman Land System has a predominant surface geology is jaspilite, and the soils are primarily stony soils, red shallow loams and some red shallow sands (FMG, 2022). Most of the clearing associated with this permit will results in the shallow (<0.3 metres) disturbance of soils for track construction and has an extremely low probability of acid sulfate soils (Fortescue Metals Group, 2022).
Waterbodies	The desktop assessment and aerial imagery indicated that no watercourses transect the area proposed to be cleared (GIS Database). FMG (2022) have identified that the existing tracks cross a small number of minor drainage lines.
Hydrogeography	The application area is located within the Pilbara Groundwater Area (GIS Database).

Characteristic	Details
Flora	A flora and vegetation field survey was undertaken in June/July 2017 (Rio Tinto, 2018). Six conservation significant flora species were recorded within the survey area, three of these species were recorded within the application area tenement and two of these species were recorded within the application area (Rio Tinto, 2018). An additional 18 conservation significant flora species may potentially occur within the application area (GIS Database).
Ecological communities	According to available databases, there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest known Priority Ecological Community (PEC) is a Priority three PEC (<i>Triodia pisolitica</i> (previously <i>Triodia</i> sp. Robe River) assemblages of mesas of the West Pilbara), which is located approximately 4 kilometres north-west of the application area (GIS Database).
Fauna	A flora, vegetation and fauna habitat survey identified the following three broad fauna habitats occurring within the application area (Rio Tinto, 2018): <ul style="list-style-type: none"> Rocky Slopes: Rocky slopes consisted of scattered low trees to low open woodland of <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> over open shrubland of <i>Acacia</i> spp. over hummock grassland of <i>Triodia</i> spp; Drainage Lines: Drainage lines consisted of scattered low trees to low open woodland of <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> and <i>Corymbia hamersleyana</i> sometimes over tall mixed shrubland over open shrubland of <i>Acacia arida</i> and <i>Acacia</i> spp. over open hummock grassland of <i>Triodia wiseana</i> over scattered tussock grasses of <i>Cymbopogon ambiguus</i> and <i>Eriachne mucronata</i>; and Rocky breakaways and cliffs: Rocky breakaways and cliffs consisted of <i>Corymbia ferritcola</i> over tall open shrubland of <i>Dodonaea pachyneura</i> and mixed <i>Acacia</i> species over scattered low shrubs of <i>Triumfetta maconochieana</i> over open hummock grassland of <i>Triodia</i> sp. Robe River (M.E. Trudgen et al. MET 123671) and <i>Triodia wiseana</i> over open tussock grassland of <i>Eriachne mucronata</i>.

A.2. Vegetation extent

	Pre-European area (ha)	Current extent (ha)	Extent Remaining %	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA Managed Lands
IBRA Bioregion - Pilbara	17,808,657.04	17,731,764.88	99.57	1,801,714.98	10.12
Beard vegetation associations - State					
Veg Assoc No. 82	2,565,901.28	2,553,206.19	99.51	295,377.96	11.51
Beard vegetation associations - Bioregion					
Veg Assoc No. 82	2,563,583.23	2,550,888.14	99.50	295,377.96	11.52

Government of Western Australia (2019)

A.3. Flora analysis table

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

Species name	Conservation status	Suitable habitat features ? [Y/N]	Distance of closest record to application area (km)	Number of known records derived from Florabase (count)
<i>Indigofera rivularis</i> (previously named <i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301))	P3	Y	Recorded within application area	61
<i>Triodia pisolitica</i> (previously named <i>Triodia</i> sp. Robe River (M.E. Trudgen et al. MET 12367))	P3	Y	Recorded within application area	64
<i>Rhynchosia bungarensis</i>	P4	Y	<5	87
<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	P3	Y	<5	18
<i>Eremophila magnifica</i> subsp. <i>magnifica</i>	P4	Y	<5	46
<i>Ptilotus mollis</i>	P4	Y	<5	43

Species name	Conservation status	Suitable habitat features ? [Y/N]	Distance of closest record to application area (km)	Number of known records derived from Florabase (count)
<i>Indigofera rivularis</i> (previously named <i>Indigofera</i> sp. Bungaroo Creek (S. van Leeuwen 4301))	P3	Y	Recorded within application area	61
<i>Triodia pisoliticola</i> (previously named <i>Triodia</i> sp. Robe River (M.E. Trudgen et al. MET 12367))	P3	Y	Recorded within application area	64
<i>Rhynchosia bungarensis</i>	P4	Y	<5	87
<i>Cyanthillium gracile</i>	P3	Y	<5	13
<i>Dicladanthera glabra</i>	P2	Y	<5	19
<i>Indigofera rivularis</i>	P3	Y	<5	61
<i>Terminalia supranitifolia</i>	P3	N	<5	53
<i>Eremophila magnifica</i> subsp. <i>velutina</i>	P3	Y	<20	22
<i>Solanum</i> sp. W Hamersley Range (S. Colwill & B. Duncan LCR99-01)	P1	Y	<20	0
<i>Triodia</i> sp. <i>Silvergrass</i> (P.-L. de Kock BES 00808)	P1	Y	<20	0
<i>Acacia bromilowiana</i>	P4	Y	<50	29
<i>Aristida polyclados</i>	P1	N	<50	11
<i>Dolichocarpa</i> sp. Hamersley Station (A.A. Mitchell PRP 1479)	P3	Y	<50	0
<i>Euphorbia inappendiculata</i> var. <i>inappendiculata</i>	P2	Y	<50	16
<i>Fimbristylis sieberiana</i>	P3	Y	<50	29
<i>Glycine falcata</i>	P3	N	<50	14
<i>Gompholobium karjini</i>	P2	N	<50	43
<i>Goodenia berringbinensis</i>	P4	Y	<50	31
<i>Grevillea saxicola</i>	P3	Y	<50	38
<i>Livistona alfredii</i>	P4	N	<50	34
<i>Oxalis</i> sp. <i>Pilbara</i> (M.E. Trudgen 12725)	P2	Y	<50	0
<i>Paspalidium retiglume</i>	P2	N	<50	12
<i>Rostellularia adscendens</i> var. <i>latifolia</i>	P3	Y	<50	43
<i>Solanum</i> sp. <i>Red Hill</i> (S. van Leeuwen et al. PBS 5415)	P3	Y	<50	0
<i>Themeda</i> sp. <i>Hamersley Station</i> (M.E. Trudgen 11431)	P3	N	<50	0
<i>Triodia basitricha</i>	P3	Y	<50	34
<i>Ptilotus subspinescens</i>	P3	Y	<50	18
<i>Vittadinia</i> sp. <i>Coondewanna Flats</i> (S. van Leeuwen 4684)	P3	Y	<50	0

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

A.4. Fauna analysis table

Species name	Common Name	Conservation status	Suitable habitat features ? [Y/N]	Distance of closest record to application area (km)
<i>Rhinonictis aurantia</i> (Pilbara)	Pilbara leaf-nosed bat	VU	Y	<5
<i>Falco peregrinus</i>	peregrine falcon	OS	Y	<20
<i>Liasis olivaceus barroni</i>	Pilbara olive python	VU	Y	<20
<i>Macroderma gigas</i>	ghost bat	VU	N	<20
<i>Notoscincus butleri</i>	lined soil-crevice skink (Dampier)	P4	Y	<20
<i>Pseudomys chapmani</i>	western pebble-mound mouse, ngadji	P4	Y	<20
<i>Apus pacificus</i>	fork-tailed swift	MI	N	<50
<i>Dasyurus hallucatus</i>	northern quoll	EN	Y	<50

Species name	Common Name	Conservation status	Suitable habitat features ? [Y/N]	Distance of closest record to application area (km)
<i>Falco hypoleucos</i>	grey falcon	VU	Y	<50
<i>Sminthopsis longicaudata</i>	long-tailed dunnart	P4	Y	<50
<i>Ninox connivens connivens</i>	barking owl (southwest subpopulation)	P3	Y	<50

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

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p>Principle (a): "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u></p> <p>The vegetation units identified within the application area are considered to be of low conservation value and are widely distributed both locally and through the Hamersley sub-region, however it does provide suitable habitat for a number of conservation significant flora (Rio Tinto, 2018).</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p>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."</p> <p><u>Assessment:</u></p> <p>No fauna habitats of conservation have been recorded within the application area (GIS Database). Eleven species of conservation significant fauna may potentially utilise the habitat within the application area, however, the application area is not likely to represent significant habitat for the species (GIS Database).</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<p>Principle (c): "Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."</p> <p><u>Assessment:</u></p> <p>There are no known records of threatened flora species within the application area and the vegetation units recorded do not represent habitat for threatened flora (GIS Database).</p>	Not likely to be at variance	No
<p>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."</p> <p><u>Assessment:</u></p> <p>There are no known Threatened Ecological Communities (TECs) located within or in close proximity to the permit area (GIS Database). The flora and vegetation survey did not identify any TECs (Rio Tinto, 2018).</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p>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."</p> <p><u>Assessment:</u></p> <p>The extent of native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia (Government of Western Australia, 2019). The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.</p>	Not at variance	No
<p>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."</p> <p><u>Assessment:</u></p>	Not at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.		
Environmental value: land and water resources		
<p><u>Principle (f):</u> "Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."</p> <p><u>Assessment:</u></p> <p>The application area intersects a number of minor ephemeral watercourses (FMG, 2022; GIS Database). The proposed clearing for access tracks is not likely to have a significant impact on riparian areas in the local region.</p>	Not likely to be at variance	No
<p><u>Principle (g):</u> "Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."</p> <p><u>Assessment:</u></p> <p>Most of the clearing associated with this permit will result in the shallow (<0.3 metres) disturbance of soils for track construction and has an extremely low probability of acid sulfate soils (FMG, 2022).</p>	Not likely to be at variance	No
<p><u>Principle (i):</u> "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."</p> <p><u>Assessment:</u></p> <p>The application area intersects a number of minor ephemeral watercourses (FMG, 2022; GIS Database). The proposed clearing for access tracks is unlikely to impact on the quality of surface and groundwater in the local area.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> "Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."</p> <p><u>Assessment:</u></p> <p>The application area intersects a number of minor drainage lines which are dry for most of the year (Rio Tinto, 2018), however the proposed clearing of 1.61 hectares for access tracks is unlikely to cause an increase in the incidence or intensity of flooding.</p>	Not likely to be at variance	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.

Condition	Description
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. Sources of information

D.1. GIS databases

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

- Aboriginal Heritage Places (DPLH-001)
- Clearing Regulations – Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Environmentally Sensitive Areas (DWER-046)
- 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 Statistics
- Remnant Vegetation, All Areas
- 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 Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

D.2. References

- BoM (2022) Bureau of Meteorology Website - Climate statistics for Australian locations, Paraburdoo Aero. Available online at: http://www.bom.gov.au/climate/averages/tables/cw_007185.shtml (Accessed on 9 March 2023).
- DaWE (2023) Species Profile and Threats Database. Department of Agriculture, Water and the Environment. <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>
- Department of Environment Regulation (DER) (2013) *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf
- Department of Planning, Lands and Heritage (DPLH) (2023) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 9 March 2023).
- Department of Primary Industries and Regional Development (DPIRD) (2023) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. URL: <https://dpiird.maps.arcgis.com/apps/webappviewer/index.html?id=662e8cbf2def492381fc915aaf3c6a0f> (Accessed 9 March 2023).
- Department of Water and Environmental Regulation (DWER) (2021) Procedure: Native vegetation clearing permits. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.pdf
- Fortescue Metals Group (FMG) (2022) Supporting Documentation Native Vegetation Clearing Permit Hendrix East – ML4SA. Unpublished report by FMG, December 2022.
- 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>
- Queensland Government (2021) Species profile *Ninox connivens* (barking owl). Available online at: <https://apps.des.qld.gov.au/species-search/details/?id=1101> (Accessed on 16 March 2023).
- Rio Tinto (2018) Native Vegetation Clearing Permit – Supporting Report. Flora, Vegetation and Fauna Habitat Assessment at Bourne Highway. Report prepared by Rio Tinto, on behalf of Hamersley Iron Pty Limited, February 2018.
- 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.

4. Glossary

Acronyms:

BC Act	<i>Biodiversity Conservation Act 2016</i> , 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)
DAWE	Department of Agriculture, Water and the Environment, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia
DMP	Department of Mines and Petroleum, Western Australia (now DMIRS)
DoEE	Department of the Environment and Energy (now DAWE)
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	<i>Environmental Protection Act 1986</i> , Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (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	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
TEC	Threatened Ecological Community

Definitions:

{DBCA (2019) 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 that subset of 'Specially Protected Fauna' listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

Threatened flora is that subset of 'Rare Flora' listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

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. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

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. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

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. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

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).

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

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. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

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).

Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and 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.

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

CD **Species of special conservation interest (conservation dependent fauna)**
Fauna of special conservation need being species 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).

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

OS **Other specially protected species**
Fauna 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).

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

P **Priority species:**
Possibly threatened species that do not meet survey criteria, 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 priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

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

Assessment of Priority codes 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

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, e.g. 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 and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

P2 Priority Two - Poorly-known species

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, e.g. 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 and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

P3 Priority Three - Poorly-known species

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. Such species are in need of 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 Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

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.