

# Clearing Permit Decision Report

## 1. Application details and outcomes

### 1.1. Permit application details

Permit number:	6141/2
Permit type:	Purpose Permit
Applicant name:	BHP Iron Ore Pty Ltd
Application received:	1 March 2024
Application area:	200 hectares
Purpose of clearing:	Mineral exploration, geotechnical and hydrogeological investigations and associated activities
Method of clearing:	Mechanical Removal
Tenure:	<i>Iron Ore (Goldsworthy-Nimngarra) Agreement Act 1972, Mining Lease 263SA (AM 70/263)</i>
Location (LGA area):	Shire of East Pilbara
Colloquial name:	Ophthalmia Exploration

### 1.2. Description of clearing activities

BHP Iron Ore Pty Ltd proposes to clear up to 200 hectares of native vegetation within a boundary of approximately 8,323 hectares for the purposes of mineral exploration, hydrogeological and geotechnical investigations and associated activities (BHP Iron Ore, 2024b). The project is located approximately 34 kilometres west of Newman within the Shire of East Pilbara (GIS Database).

Clearing permit CPS 6141/1 was granted by the Department of Mines and Petroleum (now the Department of Energy, Mines, Industry Regulation and Safety) on 31 July 2014 and was valid from 23 August 2014 to 30 November 2029. The permit authorised the clearing of up to 200 hectares of native vegetation within a boundary of approximately 8,323 hectares, for the purpose of mineral exploration, geotechnical and hydrogeological investigations and associated activities.

On 1 March 2024, the Permit Holder applied to amend CPS 6141/1 to extend the permit duration and the period in which clearing is authorised by five years and to change the Permit Holder from 'BHP Billiton Iron Ore Pty Ltd' to 'BHP Iron Ore Pty Ltd'. Approximately 6.13 hectares of native vegetation has been cleared under this permit (BHP Iron Ore, 2023).

### 1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	22 August 2024
Decision area:	200 hectares of native vegetation

### 1.4. Reasons for decision

This clearing permit amendment application was submitted, accepted, assessed, and determined in accordance with section 51KA(1) 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 7 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), supporting information provided by the applicant, including the results of a flora and vegetation survey (ENV Australia, 2010~~Error! Reference source not found.~~), 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 has not changed since the assessment for CPS 6141/1. After consideration of the available information, the Delegated Officer determined that the proposed clearing is not likely to lead to an unacceptable risk to the environmental values. The Delegated Officer decided to grant the amended clearing permit with the inclusion of additional permit conditions of implementing slow directional clearing and undertaking pre-clearance flora surveys.

## 1.5. Site map

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

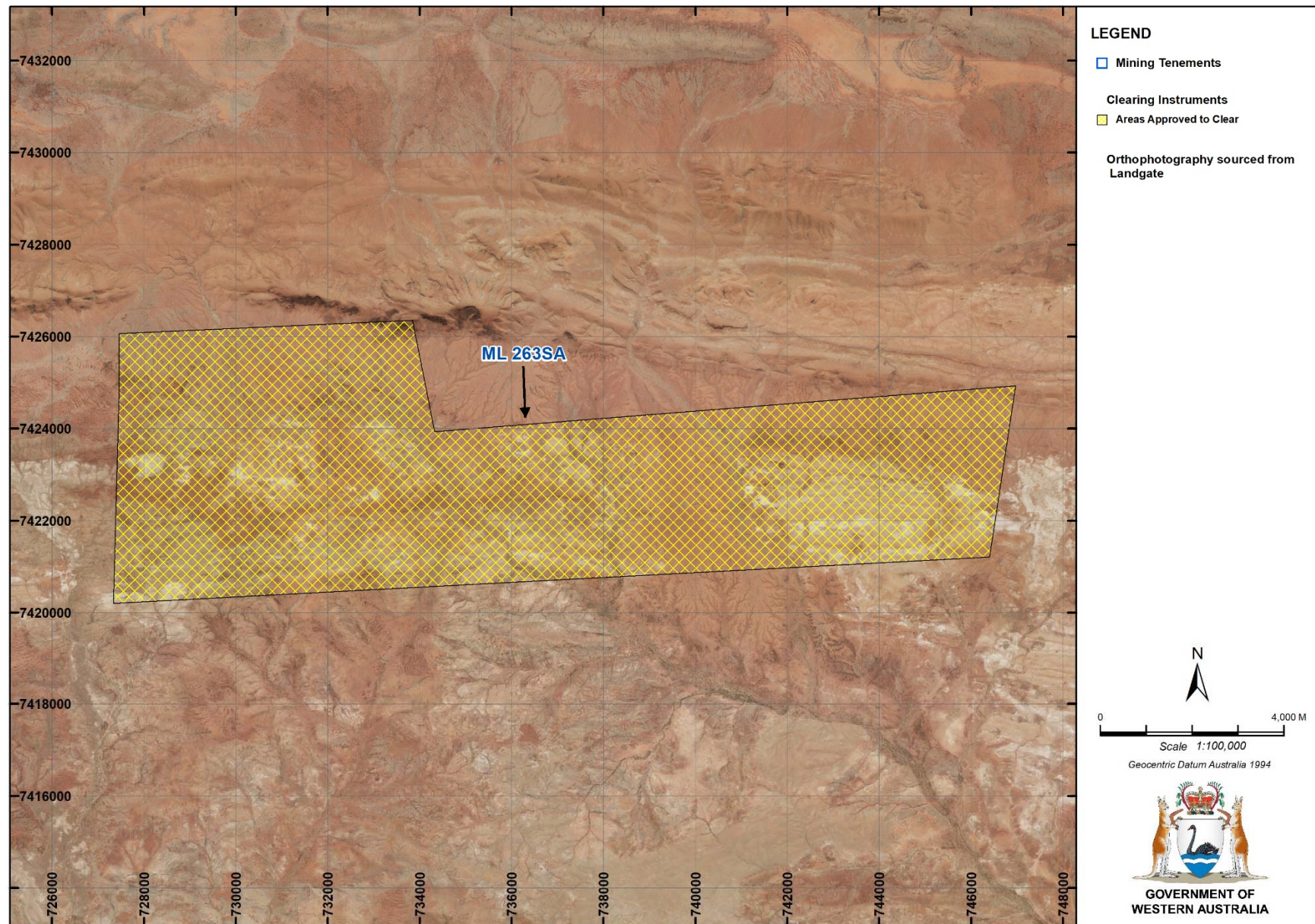


Figure 1. Map of the application area. The yellow area indicates the area within which conditional authorised clearing can occur under the granted clearing permit.

## 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 51KA(1) and 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 (Goldsworthy-Nimingarra) Agreement Act 1972*

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)

## 3. Detailed assessment of application

### 3.1. Avoidance and mitigation measures

BHP Iron Ore (2024a) have outlined they maintain the following internal databases, and avoidance and mitigation measures:

- 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;
- active Pebble-mouse mounds will be avoided using a 10 metre buffer, where practicable; and
- where practicable, existing cleared tracks will be used to cross the unnamed non-perennial minor drainage line. 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 (i.e. a simple clearing with no bunds) to maintain the natural surface flow.

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

A review of current environmental information (Appendix A) reveals that the assessment against the clearing principles has not changed from the Clearing Permit Decision Report CPS 6141/1.

No Threatened flora, Threatened Ecological Communities or Priority Ecological Communities have been recorded within or in close proximity to the application area (GIS Database), and none were identified during the flora and vegetation survey (ENV Australia, 2010). The flora and vegetation survey identified three Priority 3 flora species (*Acacia subtiliformis*, *Goodenia* sp. East Pilbara and *Rhagodia* sp. Hamersley) within the application area and BHP have committed to avoiding these individuals using a 10 metre buffer (BHP Iron Ore, 2024a; ENV Australia, 2010). An additional 39 Priority Flora species have been recorded within 50 kilometres of the application area (GIS Database). The flora and vegetation field survey was undertaken over 14 years ago between 12 and 22 May 2010 (ENV Australia, 2010). Given the age of the survey, it is possible that several conservation significant flora species have dispersed into the application area. There has also been new species listed as Threatened and Priority flora which would not have been targeted during the flora survey. Impacts to these species may be managed by implementing a flora management condition, requiring pre-clearance surveys to identify and avoid individuals prior to clearing.

The fauna survey, undertaken between the 12 and 17 May 2010, identified seven fauna habitats within the application area (ENV Australia, 2010). Several fauna species of conservation significance that have the potential to utilise these habitats within application area (ENV Australia, 2010). The survey recorded three fauna species of conservation significance (ENV Australia, 2010); Australian Bustard (*Ardeotis australis* - Priority 4), Rainbow Bee-eater and Western Pebble-mound Mouse (*Pseudomys chapmani* - Priority 4). The Australian Bustard and Rainbow Bee-eater have both been delisted since the survey was undertaken. One active mound of the Western Pebble-mound Mouse was recorded within the application area during the fauna survey (ENV Australia, 2010). This species is likely to utilise the Stony Plain and Hill Slope habitat which cover the majority of the application area. Similar habitat is common outside the application area and the proposed clearing is not likely to significantly impact this species (GIS Database).

Several fauna species of conservation significance have the potential to utilise the habitats within application area (ENV Australia, 2010). The majority of these species are bird species that are unlikely to solely rely on habitats within the application area and will be able to easily disperse following clearing (ENV Australia, 2010). The habitat present is not likely to contain suitable roosting caves for the Ghost Bat and Pilbara Leaf-nosed Bat (ENV Australia, 2010). The Riverine habitat contains



possible nesting trees for the Grey Falcon (*Falco hypoleucos* - Schedule 1) and this habitat is also likely to be utilised by the Pilbara Olive Python (*Liasis olivaceus barroni* - Schedule 1; Vulnerable) (ENV Australia, 2010). The Pilbara Olive Python may also be found in the Breakaway habitat sheltering in cracks and crevices (BHP Iron Ore, 2024a). Where possible BHP will utilise existing tracks within riparian areas (BHP Iron Ore, 2024a). Potential impacts to conservation significant fauna as a result of the proposed clearing may be minimised by implementing a condition requiring the Permit Holder to undertake slow directional clearing to allow fauna to move into the adjacent native vegetation ahead of the clearing.

The application area is mapped as occurring on the Boolgeeda, Egerton, Newman, Platform, Rocklea, Spearhole and Table land systems (GIS Database). These land systems are generally not prone to erosion (Van Vreeswyk et al., 2004). The proposed clearing is spread over a large area so it is not anticipated that the proposed clearing will cause appreciable land degradation.

There are numerous ephemeral watercourses within the application area (GIS Database). The majority of these are minor drainage lines similar to those that are widespread throughout the surrounding area. Vegetation association 2a is associated with drainage lines in the application area (ENV Australia, 2010). Where possible existing tracks will be utilised within this vegetation (BHP Iron Ore, 2024a). Given the proposed clearing is spread over a large area, it is not anticipated that it will have a significant impact on minor drainage lines within the application area.

The most significant ephemeral watercourse that passes through the application area is Western Creek (GIS Database). Disturbance to vegetation associated with Western Creek will be kept to a minimum and any creek crossings constructed flat level to the surface (BHP Iron Ore, 2024a). Potential impacts to watercourses may be minimised by a watercourse management condition.

There are no conservation areas located within the area proposed to be cleared (GIS Database). The nearest conservation area is Karijini National Park which is located approximately 66 kilometres west of the application area (GIS Database).

Based on the current environmental information, the amendment to extend the permit duration is unlikely to change the environmental impacts of the proposed clearing. The conditions currently imposed on clearing permit CPS 6141/3 are considered adequate to manage the impacts of the clearing, with the exception of implementing slow directional clearing and pre-clearance flora surveys.

### 3.3. Relevant planning instruments and other matters

The clearing permit amendment application was advertised on 15 March 2024 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 (Niyiyaparli People - WAD6280/1998) over the area under application (DPLH, 2024). 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, 2024). 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 Mining Proposal / Mine Closure Plan 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 part of an expansive tract of native vegetation in the extensive land use zone of Western Australia (GIS Database). The area is located within the Hamersley Subregion of the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The Hamersley subregion is characterised by mountain ranges and plateaux of Proterozoic sedimentary rock, dissected by gorges (ENV Australia, 2010).
Ecological linkage	The application area is not known to be an important ecological linkage (GIS Database).
Conservation areas	There are no conservation areas within the application area (GIS Database). The nearest conservation area is Karijini National Park which is located approximately 66 kilometres west of the application area (GIS Database).
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation associations:</p> <ul style="list-style-type: none"> <li>• 18: Low woodland; mulga (<i>Acacia aneura</i>); and</li> <li>• 82: Hummock grasslands, low tree steppe; snappy gum over <i>Triodia wiseana</i> (GIS Database).</li> </ul> <p>A flora and vegetation survey was conducted over the application area by ENV Australia during May 2010 (ENV Australia, 2010). The following eight vegetation associations were recorded within the application area (ENV Australia, 2010):</p> <ul style="list-style-type: none"> <li>• <b>1a:</b> Hummock Grassland of <i>Triodia wiseana</i>, <i>T. sp.</i> Shovelanna Hill (S. van Leeuwen 3835) and <i>T. pungens</i> with Open Shrubland of <i>Acacia ancistrocarpa</i>, <i>A. bivenosa</i> and <i>A. inaequilatera</i> with Low Open Woodland of <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>, <i>Corymbia deserticola</i> subsp. <i>deserticola</i> and <i>C. hamersleyana</i> on red-brown loam with a covering of cobbles and pebbles on low hills;</li> <li>• <b>1b:</b> Hummock Grassland of <i>Triodia brizoides</i> with Open Shrubland of <i>Acacia synchronicia</i>, <i>A. bivenosa</i> and <i>A. tetragonophylla</i> with Scattered Low Trees of <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>, <i>E. socialis</i> subsp. <i>eucentrica</i> and <i>E. repullulans</i> on red-brown loam on low hills;</li> <li>• <b>1c:</b> Hummock Grassland of <i>Triodia wiseana</i>, <i>T. brizoides</i> and <i>T. pungens</i> with Low Woodland of <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>, <i>Corymbia deserticola</i> subsp. <i>deserticola</i> and <i>Acacia citrinoviridis</i> with Low Open Shrubland of <i>Scaevola browniana</i> subsp. <i>browniana</i>, <i>Eremophila jucunda</i> subsp. <i>pulcherrima</i> and <i>Keraudrenia nephrosperma</i> on red-brown loam on steep hill slopes;</li> <li>• <b>1d:</b> Hummock Grassland of <i>Triodia wiseana</i>, <i>T. angusta</i> and <i>T. brizoides</i> with Open Mallees of <i>Eucalyptus socialis</i> subsp. <i>eucentrica</i>, <i>E. trivalva</i> and <i>E. repullulans</i> with Open Shrubland of <i>Melaleuca eleuterostachya</i>, <i>Acacia bivenosa</i> and <i>A. synchronicia</i> on red-brown loam with a covering of cobbles and pebbles on Low undulating hills;</li> <li>• <b>1e:</b> Open Hummock Grassland of <i>Triodia sp.</i> Shovelanna Hill (S. van Leeuwen 3835) <i>T. melvillei</i> and <i>T. pungens</i> with Low Open Woodland of <i>Acacia aneura</i> var. <i>microcarpa</i>, <i>A. citrinoviridis</i> and <i>A. catenulata</i> subsp. <i>occidentalis</i> with Low Open Shrubland of <i>Eremophila forrestii</i>, <i>Acacia pruinocarpa</i> and <i>Sida ectogama</i> on red-brown loam with a covering of cobbles and pebbles on Undulating Plains;</li> <li>• <b>1f:</b> Hummock Grassland of <i>Triodia sp.</i> Shovelanna Hill (S. van Leeuwen 3835), <i>T. pungens</i> and <i>T. wiseana</i> with Tall Shrubland of <i>Acacia catenulata</i> subsp. <i>occidentalis</i>, <i>A. citrinoviridis</i> and <i>A. pruinocarpa</i> with Low Open Woodlands of <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>, <i>Corymbia hamersleyana</i> and <i>Acacia aneura</i> var. <i>aneura</i> on red-brown loam with a covering of cobbles and pebbles on sloping hills and drainage gullies;</li> <li>• <b>2a:</b> Tussock Grassland of <i>Themeda triandra</i>, <i>Eulalia aurea</i> and <i>Cymbopogon fallax</i> with Open Shrubland of <i>Petalostylis labicheoides</i>, <i>Acacia pyrifolia</i> and <i>A. citrinoviridis</i> with Scattered Low Trees of <i>Eucalyptus xerothermica</i> and <i>E. victrix</i> on red-brown clayey loam in drainage lines; and</li> <li>• <b>3a:</b> Low Shrubland of <i>Keraudrenia velutina</i> subsp. <i>elliptica</i>, <i>Rulingia luteiflora</i> and <i>Indigofera monophylla</i> with Open Hummock Grassland of <i>Triodia melvillei</i> and <i>T. sp.</i> Shovelanna Hill (S. van Leeuwen 3835) with Very Open Mallees of <i>Eucalyptus gamophylla</i>, <i>E. kingsmillii</i> subsp. <i>kingsmillii</i> and <i>E. repullulans</i> on red-brown loam with a covering of cobbles and pebbles on Hill Slopes.</li> </ul>
Vegetation condition	<p>The vegetation survey (ENV Australia, 2010) and 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"> <li>• Excellent: Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.</li> <li>• 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.</li> </ul>

Characteristic	Details
	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul> <p>The full Trudgen (1991) condition rating scale is provided in Appendix C.</p>
Climate and landform	The climate of the Hamersley subregion is characterised as arid-tropical climate with two distinct seasons, a hot summer from October to April and a mild winter from May to September (ENV Australia, 2010). The area experiences an average rainfall of 319 millimetres (BoM, 2024).
Soil description	The soils within the application area are mapped as: <ul style="list-style-type: none"> <li>• Boolgeeda system (285Bg): Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands;</li> <li>• Egerton system (285Eg): Highly dissected plains and slopes with sparse mulga shrublands or shrubby hard spinifex grasslands;</li> <li>• Newman System (285Ne): Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands;</li> <li>• Platform system (285PI): Dissected slopes and raised plains supporting shrubby hard spinifex grasslands;</li> <li>• Rocklea system (285Rk): Basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex and occasionally soft spinifex grasslands with scattered shrubs;</li> <li>• Spearhole system (285Sp): Gently undulating gravelly hardpan plains and dissected slopes supporting groved mulga shrublands and hard spinifex; and</li> <li>• Table system (285Ta): Low calcrete plateaux, mesas and lower plains supporting mulga and cassia shrublands and minor spinifex grasslands (DPIRD, 2024).</li> </ul>
Land degradation risk	The application area is mapped as occurring on the Boolgeeda, Egerton, Newman, Platform, Rocklea, Spearhole and Table land systems (GIS Database). These land systems are generally not prone to erosion (Van Vreeswyk et al., 2004).
Waterbodies	There are no permanent watercourses within the application area (GIS Database). Numerous ephemeral watercourses including Western Creek are within the application area (GIS Database).
Hydrogeography	The application area is not mapped within a proclaimed public drinking water area (GIS Database). The area is mapped within the Pilbara Groundwater Area, proclaimed under the Rights in Water Irrigation (RIWI) Act (GIS Database).
Flora	The flora survey undertaken by ENV Australia (2010) identified three Priority 3 Flora species ( <i>Acacia subtiliformis</i> , <i>Goodenia</i> sp. East Pilbara and <i>Rhagodia</i> sp. Hamersley) within the application area. An additional 39 Priority Flora species have been recorded within 50 kilometres of the application area (GIS Database).
Ecological communities	The application area is not located within any known or mapped Threatened Ecological Community (TEC) (ENV Australia, 2010; GIS Database).
Fauna	There are records of 34 conservation significant fauna species recorded within 50 kilometres of the application area (GIS Database). One Priority 4 fauna species, Western pebble-mound mouse ( <i>Pseudomys chapmani</i> ) has been recorded within the application area (ENV Australia, 2010; GIS Database).
Fauna habitat	ENV Australia (2010) identified the following seven fauna habitat types within the application area: <ul style="list-style-type: none"> <li>• <b>Riverine:</b> The Riverine habitat consists of large ephemeral creeks and rivers that bisect the landscape. This habitat type contains a high diversity of microhabitats with logs, debris, tree hollows, soft soils, dense vegetation and understory being present.</li> <li>• <b>Minor Drainage Line:</b> The Minor Drainage Line habitat is a linear habitat that often runs off the hill and onto the surrounding plains. The vegetation in this habitat type has moderate complexity, with scattered trees of <i>Corymbia hamersleyana</i>, <i>Corymbia deserticola</i> subsp. <i>deserticola</i>, and occasionally Mulga (<i>Acacia aneura</i>) over sparse shrubs of <i>Petalostylis labicheoides</i> and <i>Acacia pruinocarpa</i> over mixed grasses of <i>Themeda triandra</i>, <i>Triodia</i> species and <i>Cymbopogon</i> species. The Minor Drainage Line habitat has a moderate diversity of microhabitats with logs, debris, tree hollows, on occasional soft soils being present in this habitat type.</li> <li>• <b>Breakaway:</b> The Breakaway habitat type is strongly associated with areas of rocky hills. It is a section of hill crest that has fallen away to produce a steep cliff. The vegetation in this habitat type is of moderate complexity, with Open woodlands of Snappy Gum (<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>) and <i>Corymbia ferritcola</i> subsp. <i>ferritcola</i> over sparse shrubs of Mulga (<i>Acacia aneura</i>), <i>Gossypium</i> species and other <i>Acacia</i> species. The Breakaway habitat has a high diversity of microhabitats such as overhangs, cracks, crevices, and caves provided by the outcropping of rocks, logs,</li> </ul>

Characteristic	Details
	<p>debris and hollows provided by the vegetation.</p> <ul style="list-style-type: none"> <li>• <b>Alluvial Plain:</b> The Alluvial Plain habitat type usually occurs in the low laying areas of the project area. This habitat type has complex vegetation with a Woodland of Mulga (<i>Acacia aneura</i>) over a midstorey of sparse <i>Acacia</i> species over mixed grasses of <i>Aristida</i> species and <i>Triodia</i> species. A moderate diversity of microhabitats are present, with tree hollows, logs, leaf litter and debris all provided by the vegetation structure. In addition to these there are also soils suitable for digging and burrowing animals.</li> <li>• <b>Stony Plain:</b> The Stony Plain habitat is often associated with lower hill slopes and is located in the North-west and central regions of the project area. This habitat has simple vegetation complexity with an Open Woodland of Snappy Gum (<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>), and Mulga (<i>Acacia aneura</i>), with areas of scattered <i>Acacia pruinocarpa</i>. Mid-storey primarily consists of <i>Eucalyptus gamophylla</i> with an understorey of mixed grasses of <i>Triodia</i> species and <i>Cymbopogon</i> species. Microhabitat diversity is low, with logs, debris and litter being scarce. The substrate is more favourable for burrowing animals than the Hill Slope habitat, but not as soft as the soils associated with the Alluvial Plain.</li> <li>• <b>Hill Slope:</b> The Hill Slope habitat, like the Breakaway, is closely associated with the hilly areas of the project area. It is characterised by stony soils with simple vegetation structure. The vegetation present consists primarily of scattered Snappy Gum (<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>) over <i>Triodia</i> species. Microhabitats in this habitat type are simple with few vegetation associated niches available and hard pebbly soils unsuitable to most burrowing fauna. Scattered logs and few hollows are provided by the scattered <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>, with leaf litter and debris being scarce.</li> <li>• <b>Hill Crest:</b> The Hill Crest habitats are located atop of the larger hills of the project area. This habitat type has a vegetation structure similar to that of the Hill Slope habitat, with scattered Snappy Gum (<i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>) over <i>Triodia</i> species. There is a low diversity of microhabitats in this habitat type with few logs, debris, and hollows provided by the vegetation. The soil is hard and unsuitable for burrowing fauna as the bedrock is close to the surface and exposed in some areas. Even though the bedrock is exposed it tends not to provide niche habitats in the form of cracks and crevices.</li> </ul>

## 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. 18	19,892,306.46	19,843,148.07	99.75	1,317,179.00	6.62
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. 18	676,556.72	671,843.35	99.30	170,297.48	25.17
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), and biological survey information (Biologic, 2014; ENV Australia, 2010; Onshore Environmental, 2014; GIS Database), 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 (total)
<i>Acacia bromilowiana</i>	4	Y	<5	30

Species name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)
<i>Acacia effusa</i>	3	Y	<47	32
<i>Acacia subtiliformis</i>	3	Y	0	24
<i>Aristida jerichoensis</i> var. <i>subspinulifera</i>	3	Y	<6	45
<i>Aristida lazaridis</i>	2	Y	<13	25
<i>Cladium procerum</i>	2	N	<41	15
<i>Dampiera metallorum</i>	3	Y	<4	21
<i>Eragrostis</i> sp. Mt Robinson (S. van Leeuwen 4109)	2	Y	<26	8
<i>Eremophila magnifica</i> subsp. <i>magnifica</i>	4	Y	<7	46
<i>Eremophila naaykensis</i>	3	N	<30	22
<i>Eremophila rigida</i>	3	Y	<23	10
<i>Eremophila</i> sp. West Angelas (S. van Leeuwen 4068)	2	Y	<5	8
<i>Eremophila youngii</i> subsp. <i>lepidota</i>	4	Y	<49	49
<i>Euphorbia clementii</i>	3	Y	<48	31
<i>Fimbristylis sieberiana</i>	3	N	<41	29
<i>Goodenia lyrata</i>	3	N	<49	18
<i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727)	3	Y	0	53
<i>Grevillea saxicola</i>	3	Y	<24	38
<i>Gymnanthera cunninghamii</i>	3	N	<39	42
<i>Hibiscus</i> sp. Gurinbiddy Range (M.E. Trudgen MET 15708)	2	N	<27	27
<i>Indigofera gilesii</i>	3	Y	<5	39
<i>Ipomoea racemigera</i>	2	Y	<32	18
<i>Isotropis parviflora</i>	3	Y	<2	33
<i>Lepidium catapycnon</i>	4	Y	<16	39
<i>Maireana prosthocochaeta</i>	3	Y	<45	24
<i>Olearia mucronata</i>	3	Y	<45	14
<i>Oxalis</i> sp. Pilbara (M.E. Trudgen 12725)	2	Y	<14	14
<i>Paranotis</i> sp. Pilbara (H. Ajduk HAOP04a)	1	Y	<8	7
<i>Pilbara trudgenii</i>	3	Y	<42	12
<i>Ptilotus mollis</i>	4	Y	<20	45
<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	3	Y	0	75
<i>Rostellularia adscendens</i> var. <i>latifolia</i>	3	Y	<24	47
<i>Sida</i> sp. Barlee Range (S. van Leeuwen 1642)	4	Y	<38	59
<i>Sida</i> sp. Turee Creek (P.-L.de Kock PLDK1116)	1	Y	<47	4
<i>Solanum kentrocaule</i>	3	Y	<43	21
<i>Streptoglossa</i> sp. Cracking clays (S. van Leeuwen et al. PBS 7353)	3	Y	<24	13
<i>Stylidium weeliwollii</i>	3	Y	<25	29
<i>Swainsona thompsoniana</i>	3	Y	<34	28
<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)	3	Y	<12	60
<i>Triodia</i> sp. Mt Ella (M.E. Trudgen 12739)	3	Y	<20	40
<i>Vittadinia</i> sp. Coondewanna Flats (S. van Leeuwen 4684)	3	Y	<9	26

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



### A.1. Fauna analysis table

Species name	Common Name	Conservation status	Distance of closest record to application area (km)	Suitable habitat features? [Y/N]
<i>Actitis hypoleucos</i>	Common Sandpiper	MI	<17	Y
<i>Anilios ganei</i>	Gane's blind snake (Pilbara)	P1	<7	Y
<i>Apus pacificus</i>	Fork-tailed swift	MI	<35	Y
<i>Calidris acuminata</i>	Sharp-tailed sandpiper	MI	<25	Y
<i>Calidris ferruginea</i>	curlew sandpiper	CR	<49	Y
<i>Calidris melanotos</i>	Pectoral Sandpiper	MI	<35	Y
<i>Calidris ruficollis</i>	Red-necked stint	MI	<49	Y
<i>Calidris subminuta</i>	Long-toed Stint	MI	<35	Y
<i>Charadrius veredus</i>	oriental plover	MI	<38	Y
<i>Dasyurus hallucatus</i>	Northern quoll	EN	<27	Y
<i>Elanus scriptus</i>	Letter-winged kite	P4	<38	Y
<i>Falco hypoleucos</i>	grey falcon	VU	<43	Y
<i>Falco peregrinus</i>	Peregrine falcon	OS	<21	Y
<i>Gelochelidon nilotica</i>	Gull-billed tern	MI	<25	Y
<i>Hydroprogne caspia</i>	Caspian Tern	MI	<49	Y
<i>Leggadina lakedownensis</i>	Northern short-tailed mouse, Lakeland Downs mouse, kerakenga	P4	<51	Y
<i>Lerista macropisthopus remota</i>	Unpatterned robust slider (Robertson Range)	P2	<21	Y
<i>Liasis olivaceus barroni</i>	Pilbara olive python	VU	<13	Y
<i>Macroderma gigas</i>	Ghost bat	VU	<22	Y
<i>Macronectes giganteus</i>	Southern giant petrel	MI	<43	N
<i>Macrotis lagotis</i>	Bilby, dalgyte, ninu	VU	<10	Y
<i>Ninox connivens connivens</i>	Barking owl (southwest subpop.)	P3	<39	N
<i>Petrogale lateralis lateralis</i>	Black-flanked rock-wallaby, black-footed rock-wallaby	EN	<39	Y
<i>Plegadis falcinellus</i>	Glossy ibis	MI	<25	Y
<i>Polytelis alexandrae</i>	Princess parrot	P4	<50	N
<i>Pseudomys chapmani</i>	Western pebble-mound mouse, ngadji	P4	0	Y
<i>Rhinonicteris aurantia</i>	orange leaf-nosed bat	P4	<45	Y
<i>Rhinonicteris aurantia</i> (Pilbara)	Pilbara leaf-nosed bat	VU	<27	Y
<i>Sminthopsis longicaudata</i>	Long-tailed dunnart	P4	<26	Y
<i>Tringa glareola</i>	Wood sandpiper	MI	<25	Y
<i>Tringa nebularia</i>	common greenshank, greenshank	MI	<25	Y
<i>Tringa stagnatilis</i>	Marsh sandpiper, little greenshank	MI	<49	Y
<i>Tringa totanus</i>	common redshank, redshank	MI	<30	Y
<i>Underwoodisaurus seorsus</i>	Pilbara barking gecko	P2	<34	Y

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		

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared may contain vegetation which supports conservation significant flora and fauna (Biologic, 2014; ENV Australia, 2010; Onshore Environmental, 2014; GIS Database). However, given the habitats and habitat features present within the application area, it is not likely to support a higher level of faunal diversity than surrounding areas.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6141/1)</p>	<p>Yes</p> <p>Refer to Section 3.2, above.</p>
<p><u>Principle (b):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared may contain foraging habitat for several conservation significant fauna species (Biologic, 2014; ENV Australia, 2010; Onshore Environmental, 2014; GIS Database).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6141/1)</p>	<p>Yes</p> <p>Refer to Section 3.2, above.</p>
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>There are no known records of Threatened flora within the application area (GIS Database). Flora surveys of the application area did not record any species of Threatened flora (ENV Australia, 2010; Onshore Environmental, 2014; GIS Database).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6141/1)</p>	<p>No</p>
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>There are no known Threatened Ecological Communities (TECs) located within the application area and the flora and vegetation survey did not identify any TECs (ENV Australia, 2010; Onshore Environmental, 2014; GIS Database).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6141/1)</p>	<p>No</p>
<b>Environmental value: significant remnant vegetation and conservation areas</b>		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The extent of the native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia (Commonwealth of Australia, 2001). The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.</p>	<p>Not at variance</p> <p>(as per CPS 6141/1)</p>	<p>No</p>
<p><u>Principle (h):</u> <i>“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></p> <p><u>Assessment:</u></p> <p>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 (GIS Database).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6141/1)</p>	<p>No</p>
<b>Environmental value: land and water resources</b>		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>There are numerous ephemeral watercourses within the application area (GIS Database). The majority of these are minor drainage lines similar to those that are widespread throughout the surrounding area. Vegetation association 2a is associated with drainage lines in the application area (ENV Australia, 2010). Where possible existing tracks will be utilised within this vegetation (ENV Australia, 2010). Given the proposed clearing is spread over a large area, it is not anticipated that it will have a significant impact on minor drainage lines within the application area.</p> <p>The most significant ephemeral watercourse that passes through the application area</p>	<p>At variance</p> <p>(as per CPS 6141/1)</p>	<p>No</p>

Assessment against the clearing principles	Variance level	Is further consideration required?
is Western Creek (GIS Database). Disturbance to vegetation associated with Western Creek will be kept to a minimum and any creek crossings constructed flat level to the surface (BHP Iron Ore, 2024a). Potential impacts to watercourses may be minimised by a watercourse management condition.		
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The application area is mapped as occurring on the Boolgeeda, Egerton, Newman, Platform, Rocklea, Spearhole and Table land systems (GIS Database). These land systems are generally not prone to erosion (Van Vreeswyk et al., 2004).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6141/1)</p>	No
<p><u>Principle (i):</u> <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.”</i></p> <p><u>Assessment:</u></p> <p>There are no permanent watercourses within the application area (GIS Database). Numerous ephemeral watercourses including Western Creek are within the application area (GIS Database). Potential impacts to surface water quality may be minimised by the implementation of a watercourse management condition.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6141/1)</p>	No
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>With an average annual rainfall of 319 millimetres and an average annual evaporation rate of 3,400-3,600 millimetres there is likely to be little surface flow during normal seasonal rains (BoM, 2014; GIS Database). Whilst large rainfall events may result in the flooding of the area, the proposed clearing is spread over a large area (200 hectares within a boundary of 3,836 hectares) and is not likely to lead to an increase in incidence or intensity of flooding.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6141/1)</p>	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. Sources of information

### D.1. GIS databases

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

- Aboriginal Heritage Places (DPLH-001)
- Contours (DPIRD-073)
- 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)
- Flood Risk (DPIRD-007)
- 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
- Interim Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- 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

- BHP Iron Ore (2023) BHP Iron Ore Annual Environmental Report July 2022 – June 2023. Report Prepared by BHP Iron Ore Pty Ltd, September 2023.
- BHP Iron Ore (2024a) Application to Amend NVCP CPS 6141/1. Ophthalmia Exploration Native Vegetation Clearing Permit Amendment Application Supporting Document. Prepared by BHP Billiton Iron Ore Pty Ltd, March 2024.
- BHP Iron Ore (2024b) Clearing permit application form, CPS 6141/2, received 1 March 2024.
- Biologic (2014) Consolidation of Regional Fauna Habitat Mapping BHP Billiton Iron Ore Pilbara Tenure. Report prepared by Biologic Environmental Survey Pty Ltd for BHP Billiton Pty Ltd, May 2014.
- Bureau of Meteorology (BoM) (2024) Bureau of Meteorology Website – Climate Data Online, Weather Station: Newman Aero - 007176. Bureau of Meteorology. <https://reg.bom.gov.au/climate/data/> (Accessed 15 April 2024).
- Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.
- Commonwealth of Australia (2008) Species Profile and Threats Database. Department of Climate Change, Energy, the Environment and Water, Australia. <https://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl> (Accessed 16 April 2024).
- Department of Environment Regulation (DER) (2014) *A guide to the assessment of applications to clear native vegetation*. Perth. [https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2\\_assessment\\_native\\_veg.pdf](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) (2024) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 15 April 2024).
- Department of Primary Industries and Regional Development (DPIRD) (2024) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. <https://dpiird.maps.arcgis.com/apps/webappviewer/index.html?id=662e8cbf2def492381fc915aaf3c6a0f> (Accessed 15 April 2024).
- Department of Water and Environmental Regulation (DWER) (2021) Procedure: Native vegetation clearing permits. Joondalup. [https://dwer.wa.gov.au/sites/default/files/Procedure\\_Native\\_vegetation\\_clearing\\_permits\\_v1.pdf](https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.pdf)
- ENV Australia (2010) Ophthalmia Flora, Vegetation and Fauna Assessment. Report prepared by ENV Australia Pty Ltd for BHP Billiton Iron Ore, October 2010.
- Environmental Protection Authority (EPA) (2004a) Guidance for the Assessment of Environmental Factors - Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia, No. 56, June 2004.
- Environmental Protection Authority (EPA) (2004b) Guidance for the Assessment of Environmental Factors - Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia, No. 51, June 2004.

- 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>
- Onshore Environmental (2014) Consolidation of Regional Vegetation Mapping BHP Billiton Iron Ore Pilbara Tenure. Report prepared by Onshore Environmental Consultants Pty Ltd for BHP Billiton Iron Ore Pty Ltd, June 2014.
- 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.
- Van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A. and Hennig, P. (2004) An inventory and condition survey of the Pilbara Region, Western Australia. Technical Bulletin No. 92. Department of Agriculture, South Perth, Western Australia.
- Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 16 April 2024).

## 4. Glossary

### Acronyms:

<b>BC Act</b>	<i>Biodiversity Conservation Act 2016</i> , Western Australia
<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>DAA</b>	Department of Aboriginal Affairs, Western Australia (now DPLH)
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia (now DPIRD)
<b>DCCEEW</b>	Department of Climate Change, Energy, the Environment and Water, Australian Government
<b>DBCA</b>	Department of Biodiversity, Conservation and Attractions, Western Australia
<b>DEMIRS</b>	Department of Energy, Mines, Industry Regulation and Safety
<b>DER</b>	Department of Environment Regulation, Western Australia (now DWER)
<b>DMIRS</b>	Department of Mines, Industry Regulation and Safety, Western Australia (now DEMIRS)
<b>DMP</b>	Department of Mines and Petroleum, Western Australia (now DEMIRS)
<b>DoEE</b>	Department of the Environment and Energy (now DCCEEW)
<b>DoW</b>	Department of Water, Western Australia (now DWER)
<b>DPaW</b>	Department of Parks and Wildlife, Western Australia (now DBCA)
<b>DPIRD</b>	Department of Primary Industries and Regional Development, Western Australia
<b>DPLH</b>	Department of Planning, Lands and Heritage, Western Australia
<b>DRF</b>	Declared Rare Flora (now known as Threatened Flora)
<b>DWER</b>	Department of Water and Environmental Regulation, Western Australia
<b>EP Act</b>	<i>Environmental Protection Act 1986</i> , Western Australia
<b>EPA</b>	Environmental Protection Authority, Western Australia
<b>EPBC Act</b>	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
<b>GIS</b>	Geographical Information System
<b>ha</b>	Hectare (10,000 square metres)
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>PEC</b>	Priority Ecological Community, Western Australia
<b>RIWI Act</b>	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
<b>TEC</b>	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.