Government of Western Australia
Department of Mines, Industry Regulation and Safety

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8940/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **BHP Billiton Iron Ore Pty Ltd**

1.3. Property details

Property: *Iron Ore (Marillana Creek) Agreement Act 1991*, Mining Lease 270SA (AM 70/270)
Local Government Area: Shire of East Pilbara
Colloquial name: Ministers North Conveyor

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
40		Mechanical Removal	Geotechnical Investigations and Associated Activities

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 01 October 2020

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

The vegetation of the application area is broadly mapped as the following Beard vegetation associations:
18: Low woodland; mulga (*Acacia aneura*); and
82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana* (GIS Database).

A number of flora and vegetation surveys have been conducted across BHP Billiton Iron Ore's central, eastern and mainline rail tenements, including the application area, with Onshore Environmental (2014) consolidating previous vegetation mapping projects in 2014. The following vegetation associations were recorded within the application area (Onshore Environmental, 2014):

***Acacia* High Shrubland**

1. High Shrubland of *Acacia tumida* var. *pilbarensis*, *Acacia pyrifolia* var. *pyrifolia* and *Acacia sericophylla* with Scattered Trees of *Eucalyptus camaldulensis* subsp. *refulgens* over Open Tussock Grassland of *Themeda* sp. Mt Barricade (M.E. Trudgen 2471), *Themeda triandra* and *Cymbopogon procerus* on brown loam and gravels on major drainage channels.

***Acacia* Low Open Forest**

2. Low Open Forest of *Acacia aptaneura* over Open Hummock Grassland of *Triodia pungens*, *Triodia wiseana* and *Triodia basedowii* over Open Tussock Grassland of **Cenchrus ciliaris* and *Chrysopogon fallax* on red brown sandy loam on sandy plains and undulating low hills.

***Acacia* Open Scrub**

3. Open Scrub of *Acacia tumida* var. *pilbarensis*, *Petalostylis labicheoides* and *Acacia monticola* over Open Hummock Grassland of *Triodia pungens* and *Triodia* sp. Shovelanna Hill (S.van Leeuwen 3835) with Low Open Woodland of *Corymbia hamerselyana* and *Eucalyptus leucophloia* subsp. *leucophloia* on red brown sandy loam on minor drainage lines.

***Acacia* Shrubland**

4. Shrubland of *Acacia bivenosa*, *Acacia dictyophleba* and *Acacia maitlandii* over Open Hummock Grassland of *Triodia pungens* over Open Tussock Grassland of *Themeda triandra*, *Paraneurachne muelleri* and *Eulalia aurea* on brown sandy loam on minor drainage lines.

***Melaleuca* High Open Forest**

5. High Open Forest of *Melaleuca argentea*, *Eucalyptus camaldulensis* var. *refulgens* and *Eucalyptus victrix* over High Open Shrubland of *Melaleuca glomerata*, *Acacia coriacea* subsp. *pendens* and *Acacia trachycarpa* over Very Open Sedges of *Cyperus vaginatus* on alluvial gravelly soils on major drainage channels with seasonal pools.

***Themeda* Tussock Grassland**

6. Tussock Grassland of *Themeda triandra*, *Eriachne mucronata* and *Themeda* sp. Mt Barricade with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia hamersleyana* and *Corymbia ferriticola* over High Shrubland of *Acacia tumida* var. *pilbarens*, *Gossypium robinsonii* and *Petalostylis*

labicheoides on red brown sandy loam in narrowly incised rocky drainage lines.

***Triodia* Hummock Grassland**

7. Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia pungens* and *Triodia wiseana* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and Open Shrubland of *Acacia bivenosa*, *Acacia pachyachra* and *Acacia ancistrocarpa* on red brown loam on footslopes and low undulating hills
8. Hummock Grassland of *Triodia wiseana* with High Open Shrubland of *Acacia inaequilatera* and *Acacia bivenosa* over Low Open Shrubland of *Indigofera rugosa* and *Senna artemisioides* subsp. *oligophylla* on red silty loam on dolerite hill crests.
9. Hummock Grassland of *Triodia wiseana*, *Triodia brizoides* and *Triodia pungens* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* over High Open Shrubland of *Acacia maitlandii*, *Grevilllea wickhamii* subsp. *hispidula* and *Acacia bivenosa* on red brown sandy loam on hill crests and upper hill slopes.
10. Hummock Grassland of *Triodia epactia* and *Triodia wiseana* with Low Open Woodland of *Corymbia hamersleyana* over High Open Shrubland of *Acacia inaequilatera* and *Acacia ancistrocarpa* on red brown sandy loam on granite and quartz hill slopes and footslopes.
11. Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia wiseana* and *Triodia pungens* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* over Low Open Shrubland of *Acacia hilliana* and *Acacia adoxa* var. *adoxa* on red brown sandy loam on hill slopes
12. Hummock Grassland of *Triodia wiseana* and *Triodia brizoides* with High Open Shrubland of *Acacia inaequilatera* and Low Open Shrubland of *Indigofera rugosa* on brown sandy loam on dolerite hillslopes.
13. Hummock Grassland of *Triodia pungens* and *Triodia longiceps* with Low Woodland of *Eucalyptus xerothermica*, *Acacia citrinoviridis* and *Corymbia hamerselyana* over High Shrubland of *Petalostylis labicheoides*, *Acacia pyrifolia* var. *pyrifolia* and *Gossypium robinsonii* on red brown clay loam on medium drainage lines and surrounding floodplains
14. Hummock Grassland of *Triodia basedowii* and *Triodia pungens* with High Open Shrubland of *Hakea lorea* subsp. *lorea*, *Acacia ancistrocarpa* and *Acacia inaequilatera* and Scattered Low Trees of *Corymbia hamersleyana* on red brown loamy sand on stony plains.

Note: *denotes weed species.

Clearing Description

Ministers North Conveyor.
BHP Billiton Iron Ore Pty Ltd proposes to clear up to 40 hectares of native vegetation within a boundary of approximately 2,097 hectares, for the purpose of geotechnical investigations and associated activities. The project is located approximately 95 kilometres north-west of Newman, within the Shire of East Pilbara.

Vegetation Condition

Pristine: No obvious signs of disturbance (Keighery, 1994).

To:

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).

Comment

The vegetation condition was derived from a vegetation survey conducted by Onshore Environmental (2014) and aerial imagery.

The proposed clearing is for undertaking geotechnical investigations associated with the proposed conveyor route from Ministers North to the Yandi Hub. Vegetation clearing will be conducted along the conveyor route and areas of potential borrow material (BHP, 2020).

3. Assessment of application against Clearing Principles

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

Comments

Proposal may be at variance to this Principle

The clearing permit application area is located within the Hamersley subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Pilbara Bioregion (GIS Database). The Hamersley subregion is described as a mountainous area of Proterozoic sedimentary ranges and plateaux, dissected by gorges (basalt, shale and dolerite), supporting mulga low woodland over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges (CALM, 2002).

A number of flora and vegetation surveys have been conducted across BHP Billiton Iron Ore's central, eastern and mainline rail tenements, including the application area, with Onshore Environmental (2014) consolidating previous vegetation mapping projects in 2014. Vegetation was dominated by *Acacia* shrublands/forest and *Triodia* hummock grasslands (BHP, 2020; Onshore Environmental, 2014). No Threatened or Priority Ecological Communities were identified as potentially occurring in the application area and none were identified during the field assessment (BHP, 2020; Onshore Environmental, 2014).

A NatureMap search identified 51 conservation significant flora species previously recorded within 40 kilometres of the application area with the potential to occur, including 11 Priority 1, seven Priority 2, 26 Priority 3 and seven Priority 4 species (DBCA, 2007-). One Priority 3 flora species, *Rostellularia adscendens* var. *latifolia*, and one Priority 4 flora species, *Goodenia nuda*, were identified within the application area (BHP, 2020; Onshore Environmental, 2014). One additional Priority flora species has previously been recorded

Isotropis parviflora (P2), however this record has since been cleared under a separate approval. *Rostellularia adscendens* var. *latifolia* and *Goodenia nuda* are both known from a number of populations within the Pilbara IBRA Region and the proposed clearing is unlikely to significantly impact the conservation of the species at a local or regional scale (Western Australian Herbarium, 1998-). However, due to the number of species potentially present within the application area and the regional nature of the Onshore Environmental (2014) survey, additional conservation significant species may be present within the application area. Potential impacts to conservation significant flora species as a result of the proposed clearing may be minimised by imposing a flora management condition requiring pre-clearance surveys.

Nineteen introduced flora species (weeds) were recorded within the application area, including two Declared Pest species; *Argemone ochroleuca* subsp. *ochroleuca* (Mexican Poppy) and *Datura leichhardtii* (Native Thornapple), as listed under the *Biosecurity and Agriculture Management Act 2007*. Weeds have the potential to out-compete native flora and reduce the biodiversity of an area. Potential impacts to biodiversity as a result of the introduction of weeds may be minimised by the implementation of a weed management condition.

A NatureMap search identified 23 conservation significant fauna species previously recorded within 40 kilometres of the application area with the potential to occur, including ten Threatened species, three species protected under international agreements, one specially protected species, one Priority 1, two Priority 2, one Priority 3 and five Priority 4 species (DBCA, 2007-). A number of conservation significant fauna species were identified as potentially occurring within the application area due to the presence of suitable habitat: spotted Ctenotus, *Ctenotus uber johnstonei* (P2); bilby, *Macrotis lagotis* (VU at state and federal level); Pilbara olive python, *Liasis olivaceus barroni* (VU at state and federal level); northern quoll, *Dasyurus hallucatus* (EN at state and federal level); Pilbara leaf-nosed bat, *Rhinonicteris aurantia* (VU at state and federal level); peregrine falcon, Falco peregrinus (OS); ghost bat, *Macroderma gigas* (VU at state and federal level); western pebble-mound mouse, *Pseudomys chapmani* (P4); and mulgara, *Dasycercus* species (P4). Of these the western pebble-mound mouse was recorded within the application area, and northern quoll and Pilbara olive python were recorded adjacent to the application area (BHP, 2020; Biologic, 2014). The proposed clearing of 40 hectares within a boundary of 2,097 hectares for the purposes of geotechnical investigations and associated activities is unlikely to significantly impact conservation significant fauna species. However, potential impacts to conservation significant fauna species may be minimised by imposing a condition restricting the clearing of vegetation within the Marillana Creek and its associated vegetation.

Based on the above, the proposed clearing may be at variance to this Principle.

Methodology

BHP (2020)
Biologic (2014)
CALM (2002)
DBCA (2007-)
Onshore Environmental (2014)

GIS Database:
- IBRA Australia
- Pre-European Vegetation
- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities Buffers
- Threatened and Priority Flora
- Threatened Fauna

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

Comments

Proposal may be at variance to this Principle

The following six fauna habitats have been recorded within the application area (Biologic, 2014):

1. **Drainage Area / Floodplain:** Characterised by *Eucalyptus xerothermica* and *Corymbia hamersleyana* woodland over broad-leafed *Acacia* shrubland on sandy loam soils sometimes with exposed rocky areas. These can have high vegetation density, complexity and diversity, and because they tend to occur on accretional or depositional areas, often have deeper and richer soils than other fauna habitats. Grasses tend to be dominated by tussock grasses rather than spinifex, or the weed Buffel Grass **Cenchrus ciliaris*.
2. **Hillcrest / Hill slope:** These fauna habitats tend to be more open and structurally simple due to their recent depositional history than other fauna habitats, and are dominated by varying species of spinifex. A common feature of these habitats is a rocky substrate, often with exposed bedrock, and skeletal red soils. These are usually dominated by *Eucalyptus* woodlands, *Acacia* and *Grevillea* scrublands and *Triodia* spp. low hummock grasslands.
3. **Minor Drainage Line:** Located within the minor gullies and depressions, generally through the Crest/Slope habitat. Consists primarily of *Acacia* low shrubland. The understorey generally lacks density and often consists solely of sparse tussock grassland, often including the weed Buffel Grass **Cenchrus ciliaris* where it has been introduced. The substrate can be sandy in places but generally consists of a skeletal loam gravel or stone.
4. **Major Drainage Line:** Major Drainage Lines comprise mature River Red Gums, Coolibahs and

stands of Silver Cadjeput over river pools. Open, sandy or gravelly riverbeds characterise this habitat type. In ungrazed areas, the vegetation adjacent to the main channel or channels is denser, taller and more diverse than adjacent terrain and can include reedbeds around pools.

5. **Mulga Woodland:** This habitat includes woodlands and other ecosystems in which Mulga (*Acacia aneura*) is dominant, either as the principal *Acacia* species or mixed with others. It consists of disintegrating groves on stony soils with spinifex. This habitat type is grouped with other habitat occurring on the plains; however it is noted that small groves of Mulga occur on ridgelines.
6. **Sand Plain:** Sand Plain habitat is characterised by relatively deep sandy soils supporting dense spinifex grasslands and sparse shrubs. This habitat transitions into patches of Mulga in places. This habitat often occurs as terraces along Major Drainage Lines.

During field surveys of the application area and wider project area 94 fauna species were recorded in the drainage area habitat type, 81 fauna species were recorded in the minor drainage line habitat type, 78 fauna species were recorded in the major drainage line habitat type, 119 fauna species were recorded in the crest/slope habitat type, 80 fauna species were recorded in the mulga habitat type and 97 fauna species were recorded in the sand plains habitat type (Biologic, 2014).

The drainage area / floodplain habitat type was identified as providing foraging for the Pilbara olive python, northern quoll, Pilbara leaf-nosed bat and peregrine falcon (Biologic, 2014). The hillcrest / hill slope habitat type was identified as containing breeding and foraging habitat for the pebble mouse and foraging for the ghost bat, northern quoll and Pilbara leaf-nosed bat, with a number of active pebble mouse mounds recorded within this habitat type in the application area (BHP, 2020; Biologic, 2014). The minor drainage line habitat type was identified as containing breeding and foraging habitat for the Pilbara olive python and foraging for the northern quoll and Pilbara leaf-nosed bat (Biologic, 2014). The major drainage line was identified as containing breeding and foraging habitat for the Pilbara olive python, northern quoll and peregrine falcon, and foraging for Pilbara leaf-nosed bat, with both the northern quoll and Pilbara Olive python recorded in this habitat type adjacent to the application area (Biologic, 2014). The mulga woodland contained breeding and foraging habitat for the spotted Ctenotus (Biologic, 2014). The sandplains provided breeding and foraging habitat for bilby and mulgara (Biologic, 2014). The majority of the application area is comprised of the hillcrest / hill slope habitat type and the major drainage line habitat type. Very little sand plain and mulga woodland habitat types are present (BHP, 2020; Biologic, 2014). The proposed clearing of 40 hectares within a boundary of 2,097 hectares for the purposes of geotechnical investigations and associated activities is unlikely to significantly impact fauna habitat at a local or regional scale. The proposed clearing is unlikely to impact significant habitat for the pebble mouse, based on similar habitat existing outside the application area and the low impact nature of the proposed clearing. However, potential impacts to the breeding habitat of the Pilbara olive python and northern quoll may be minimised by imposing a condition restricting the clearing of vegetation within the Marillana Creek and its associated vegetation.

Based on the above, the proposed clearing may be at variance to this Principle.

Methodology

BHP (2020)
Biologic (2014)

GIS Database:
- Imagery
- Pre-European Vegetation
- Threatened Fauna

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

Comments

Proposal is not likely to be at variance to this Principle

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 (Onshore Environmental, 2014).

The vegetation associations within the application area extend beyond the application area (BHP, 2020; Onshore Environmental, 2014; GIS Database), and proposed clearing of 40 hectares within an area of 2097 hectares is unlikely to be necessary for the continued existence of any species of Threatened (rare) flora.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

BHP (2020)
Onshore Environmental (2014)

GIS Database:
- Pre-European Vegetation
- Threatened and Priority 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.

Comments

Proposal is not likely to be at variance to this Principle

There are no known Threatened Ecological Communities (TECs) located within or in close proximity to the application area (GIS Database). A flora and vegetation survey of the application area did not identify any TECs (BHP, 2020; Onshore Environmental, 2014).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

BHP (2020)
Onshore Environmental (2014)

GIS Database:
- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities Buffers

(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.

Comments

Proposal is not at variance to this Principle

The application area falls within the Pilbara Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the IBRA Pilbara Bioregion (Government of Western Australia, 2019). The application area is broadly mapped as Beard vegetation associations 18: low woodland; mulga (*Acacia aneura*); and 82: hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana* (GIS Database). Approximately 99% of the pre-European extent of each of these vegetation associations remains uncleared at both the state and bioregional level (Government of Western Australia, 2019).

Therefore, the application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DBCA managed lands
IBRA Bioregion – Pilbara	17,808,657	17,731,764	~99	Least Concern	~10
Beard vegetation associations – WA					
18	19,892,306	19,843,148	~99	Least Concern	~6
82	2,565,901	2,553,206	~99	Least Concern	~11
Beard vegetation associations – Pilbara Bioregion					
18	676,556	671,843	~99	Least Concern	~25
82	2,563,583	2,550,888	~99	Least Concern	~11

* Government of Western Australia (2019)
** Department of Natural Resources and Environment (2002)

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

Department of Natural Resources and Environment (2002)
Government of Western Australia (2019)

GIS Database:
- IBRA Australia
- Pre-European Vegetation

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

Comments

Proposal is at variance to this Principle

There are no permanent watercourses or wetlands within the area proposed to clear (BHP, 2020; GIS Database). The application area is dissected by one major non-perennial water course (Marillana Creek) and a number of additional minor drainage lines (GIS Database). Creek lines in the region are dry for most of the

year, only flowing briefly immediately following significant rainfall (Van Vreeswyk et al., 2004). Where practicable, existing cleared tracks will be used to cross areas identified as Major Drainage Lines (BHP, 2020). Where new crossings are necessary, clearing will be minimised and natural surface flows will be maintained (BHP, 2020).

Based on the above, the proposed clearing is at variance to this Principle. Potential impacts to vegetation growing in association with the watercourse may be minimised by the implementation of a watercourse management condition.

Methodology BHP (2020)
Van Vreeswyk et al. (2004)

GIS Database:
- Hydrography, Lakes
- Hydrography, linear

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

Comments **Proposal is not likely to be at variance to this Principle**
The application area lies within the Boolgeeda, McKay and Robe land systems (GIS Database). These land systems have been mapped and described in technical bulletins produced by the former Department of Agriculture (now the Department of Primary Industries and Regional Development).

The Boolgeeda land system is described as stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands and mulga shrublands. The McKay land system consists of hills, ridges, plateaux remnants and breakaways of meta sedimentary and sedimentary rocks supporting hard spinifex grasslands. The Robe land system is described as low limonite mesas and buttes supporting soft spinifex (and occasionally hard spinifex) grasslands. These land systems are not generally susceptible to erosion (Van Vreeswyk et al., 2004).

The proposed clearing of up to 40 hectares of native vegetation within a boundary of approximately 2097 hectares, for the purpose of geotechnical investigations and associated activities is unlikely to cause appreciable land degradation.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Van Vreeswyk et al. (2004)

GIS Database:
- Landsystem Rangelands

(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.

Comments **Proposal is not likely to be at variance to this Principle**
There are no conservation areas in the vicinity of the application area. The nearest DBCA (formerly DPaW) managed land is the former Marillana Pastoral Lease which is located approximately 18 kilometres north of the application area (GIS Database). The proposed clearing is unlikely to impact on the environmental values of any conservation area.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology GIS Database:
- DPaW Tenure

(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.

Comments **Proposal is not likely to be at variance to this Principle**
There are no Public Drinking Water Source Areas within or in close proximity to the application area (GIS Database). The application area is dissected by one major non-perennial water course (Marillana Creek) and a number of additional minor drainage lines. There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall (Van Vreeswyk et al., 2004). Where practicable, existing cleared tracks will be used to cross areas identified as Major Drainage Lines (BHP, 2020). Where new crossings are necessary, clearing will be minimised and natural surface flows will be maintained (BHP, 2020). Potential impacts to surface water flows will be further minimised by imposing a waterway management condition. The

proposed clearing is unlikely to result in significant changes to surface water flows. The proposed clearing is unlikely to cause deterioration in the quality of underground water.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology BHP (2020)
Van Vreeswyk et al. (2004)

GIS Database:
- Hydrography, Linear
- Public Drinking Water Source Areas

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

Comments

Proposal is not likely to be at variance to this Principle

The climate of the subregion is semi-desert tropical, with an average rainfall of approximately 300 millimetres per year falling predominantly in summer cyclonic or thunderstorm events (CALM, 2002). The nearest weather station is Newman Aero, approximately 100 kilometres south-east of the application area, with an average rainfall of approximately 324.3 millimetres per year (BoM, 2020).

There are no permanent water courses or waterbodies within the application area (GIS Database). Seasonal drainage lines are common in the region and temporary localised flooding may occur briefly following heavy rainfall events. However, the proposed clearing is unlikely to increase the incidence or intensity of natural flooding events.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology BoM (2020)
CALM (2002)
Van Vreeswyk et al. (2004)

GIS Database:
- Hydrographic Catchments - Catchments
- Hydrography, linear

Planning Instrument, Native Title, previous EPA decision or other matter.

Comments

The clearing permit application was advertised on 10 August 2020 by the Department of Mines, Industry Regulation and Safety (DMIRS), inviting submissions from the public. No submissions were received in relation to this application.

The application area exists within the development envelope of the Marillana Creek (Yandi) Life-of-Mine Proposal which was formally assessed by the EPA. Ministerial Statement 679 was published on 06 July 2005 approving the project, and was subsequently amended in Ministerial Statement 1039, published on 04 October 2016. The proposed clearing is in accordance with the requirements of the Ministerial Statements (EPA, 2005; 2016).

There is one native title claim (WC2011/006) over the area under application (DPLH, 2020). 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 29 registered Aboriginal Sites of Significance within the application area (DPLH, 2020). 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.

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.

Methodology DPLH (2020)
EPA (2005)
EPA (2016)

4. References

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DPLH (2020) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. http://maps.daa.wa.gov.au/AHIS/ (Accessed 8 September 2020).

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EPA (2005) Statement that a proposal may be implemented (pursuant to the provisions of the *Environmental Protection Act 1986*). Statement No. 679 – Marillana Creek (Yandi) Life-of-Mine Proposal, Mining Leases 270SA 47/292, 90 km North-West of Newman, Shire of East Pilbara. Environmental Protection Authority, 06 July 2005.

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5. Glossary

Acronyms:

BC Act	*Biodiversity Conservation Act 2016,* Western Australia
BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DAWE	Department of Agriculture, Water and the Environment, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DBCA and DWER)
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)
DoE	Department of the Environment, Australian Government (now DAWE)
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
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DAWE)
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	*Environmental Protection Act 1986*, Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	*Rights in Water and Irrigation Act 1914*, Western Australia

TEC Threatened Ecological Community

Definitions:

{DBCA (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.