

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 9355/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Whim Creek Metals Pty Ltd

1.3. Property details

Property: Mining Lease 47/238
Local Government Area: City of Karratha
Colloquial name: Whim Creek Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
60		Mechanical Removal	Mineral Production

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 30 November 2021

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 association: 649: Sedgeland; Various sedges with very sparse snakewood (GIS Database).

A flora and vegetation survey was conducted over the application area by Astron Environmental Services (Astron) during 13-16 September 2006. The following vegetation types were recorded within the application area (Astron, 2006):

DRAINAGE LINES AND ZONES

Acacia tumida shrubland/heath drainage lines

D1: Open scrub (30-70% 2m) of *Acacia tumida* with occasional *Acacia pyrifolia*, *Acacia ancistrocarpa*, *Acacia bivenosa* over open low shrubland (2-10% <1m) of *Indigofera monophylla* over hummock grassland of *Triodia wiseana* and *Triodia angusta*.

D2: Tall shrubland of *Acacia tumida* with frequent *Acacia pyrifolia* over low shrubland (10-30%) to low open heath (30-70% 1m) of *Isotropis atropurpurea*, *Cajanus cinereus*, *Indigofera monophylla*, *Tephrosia rosea* var. *clementii* over very open (2-10%) hummock grassland of *Triodia epactia*.

D3: Regenerating open low shrubland (2-15% <1m) of *Acacia tumida*, *Acacia pyrifolia* over dwarf open heath (30-70% <0.5m) of *Corchorus elachocarpus*, *Isotropis atropurpurea*, *Goodenia stobbsiana* over very open regenerating hummock grassland (2-10%) of *Triodia epactia*. Very scattered *Corymbia hamersleyana*.

D4: Open tall shrubland (2-10% >2m) of *Acacia inaequilatera* over low open heath of *Acacia tumida* (30-70% 1m) over dense hermland of *Corchorus elachocarpus* and *Solanum diversiflorum* over open hummock grassland of *Triodia epactia*. There are scattered low *Corymbia hamersleyana*.

Acacia acradenia shrubland/heath drainage lines

D5: Open heath (30-70% 1-2m) of *Acacia acradenia* with some *Acacia bivenosa*, *Senna pruinoso* over open low shrubland (2-10% <1m) of *Indigofera monophylla*, *Tephrosia rosea* var. *clementii* over hummock grassland of mixed *Triodia wiseana* and *Triodia angusta*.

D6: Open heath (30-70% 1-2m) of *Acacia acradenia*, *Acacia bivenosa* with some *Acacia orthocarpa*, *Acacia pyrifolia* over hummock grassland of *Triodia angusta* with some *Triodia epactia*.

D7: Open heath (30-70% 1-2m) of *Acacia ancistrocarpa*, *Acacia acradenia* over hummock grassland of *Triodia epactia* with some *Triodia angusta*.

D8: Low open heath (30-70% 1m) of *Acacia ancistrocarpa* over hummock grassland of *Triodia epactia* and some *Triodia angusta*. There can be scattered *Corymbia hamersleyana*.

Acacia orthocarpa shrubland/heath drainage lines

D9: Low shrubland (10-30%) to open low heath (30-70% 1m) of *Acacia orthocarpa* over hummock grassland of *Triodia epactia*, *Triodia angusta*. There are scattered *Acacia pyrifolia*, *Acacia ancistrocarpa*, *Acacia acradenia*.

D10: Mixed tall heath (30-70% >2m) of *Acacia bivenosa*, *Acacia acradenia*, *Acacia pyrifolia*, *Acacia ancistrocarpa* over hummock grassland of *Triodia epactia*, *Triodia angusta*.

D11: Mixed tall heath (30-70% >2m) of *Acacia ancistrocarpa*, *Acacia acradenia*, *Acacia bivenosa* over tall hummock grassland of *Triodia angusta* with occasional *Triodia epactia* and scattered *Corymbia hamersleyana*.

D12: Mixed shrubland (10-30%) to heath (30-45% 1-2m) of *Acacia ancistrocarpa*, *Acacia pyrifolia*, *Acacia tumida*, *Acacia inaequilatera* over hummock grassland of *Triodia angusta* and *Triodia epactia*. Scattered, sometimes open (2%) *Corymbia hamersleyana*.

D13: Mixed open tall shrubland (2-10% >2m) of *Grevillea wickhamii*, *Acacia pyrifolia*, *Acacia tumida* over low open heath (30-70% 1m) of *Acacia acradenia* over hummock grassland of *Triodia epactia*, *Triodia angusta*.

HILL SPLOPES

Acacia bivenosa shrubland on hill slopes

H1: Low shrubland (10-30% 1m) sometimes heath (30-40%) of *Acacia bivenosa* over hummock grassland of *Triodia wiseana*. There can be scattered *Acacia inaequilatera*.

H2: Low shrubland (10-30% 1m) of *Acacia bivenosa* with *Senna pruinosa* over hummock grassland of *Triodia angusta*. Scattered, sometimes open (2%) *Acacia inaequilatera*.

H3: Low shrubland (10-30% 1m) of *Acacia bivenosa* over dwarf open shrubland (2-10% 1m) of *Indigofera monophylla*, *Corchorus laniflorus* over hummock grassland of *Triodia epactia* with occasional *Triodia wiseana*.

H4: Regenerating low shrubland (10-30% <1m) of *Acacia bivenosa* with *Acacia pyrifolia* over dense dwarf shrubland (30-70% <0.5m) of *Tephrosia rosea* subsp *clementii*, *Indigofera monophylla* over patchy regenerating hummock grassland of *Triodia epactia*.

Acacia pyrifolia shrubland on hill slopes

H5: Regenerating shrubland to heath (10-40%) of *Acacia pyrifolia* over dwarf open heath (30-70% <0.5m) of *Indigofera monophylla*, *Corchorus elachocarpus*, *Solanum diversiflorum*, *Tribulus platypterus* over regenerating open hummock grassland (10-30%) of *Triodia wiseana*.

H6: High shrubland (10-30% >2m) of *Acacia pyrifolia*. There can be occasional *Acacia ancistrocarpa*, *Acacia orthocarpa*, *Acacia bivenosa* over hummock grassland of *Triodia epactia*. May be very scattered *Corymbia hamersleyana*.

H7: Hummock grassland of *Triodia epactia*. There are scattered *Acacia bivenosa*, *Acacia ancistrocarpa*, *Acacia inaequilatera*.

H8: Closed hummock grassland of *Triodia epactia*. There are scattered *Acacia pyrifolia* and *Acacia bivenosa*.

Mixed shrubland on hill slopes

H9: Mixed shrubland (10-30% 1-2m) of *Acacia bivenosa*, *Acacia pyrifolia*, *Acacia acradenia* over open (2-10%) to low shrubland (10-30% <1m) of *Indigofera monophylla* over hummock grassland of *Triodia epactia* and *Triodia wiseana*.

H10: Mixed shrubland (10-30% 1m) of *Acacia ancistrocarpa*, *Acacia bivenosa* with scattered *Petalostylis labichoides*, *Acacia pyrifolia* over open herbland (2-0%) of *Goodenia stobbsiana*, *Corchorus elachocarpus* over hummock grassland of *Triodia angusta*.

H11: Mixed open low shrubland (2-10% 1m), sometimes low shrubland (10-30%) of *Acacia bivenosa*, *Acacia ancistrocarpa*, *Acacia pyrifolia* over mixed hummock grassland of *Triodia epactia*, *Triodia wiseana*. There are scattered (<2%) *Acacia inaequilatera*.

H12: Mixed low shrubland (10-30%) to open heath (30-50% 1m) of *Acacia bivenosa*, *Acacia acradenia*, *Acacia ancistrocarpa* over regenerating hummock grassland of *Triodia wiseana* with *Triodia epactia*.

H13: Mixed open (2-10%) to low shrubland (10-30% 1m) of *Acacia bivenosa*, *Acacia stellaticeps*, *Acacia ancistrocarpa* over hummock grassland of *Triodia angusta*. There can be scattered tall shrub *Acacia inaequilatera*, and low tree *Corymbia hamersleyana*.

H14: Mixed open shrubland (2-10% 1-2m) of *Acacia pyrifolia* and *Acacia orthocarpa* over open dwarf shrubland (2-10 (-20)% , <0.5m) of *Indigofera monophylla* over hummock grassland.

Acacia acradenia shrubland on hill slopes

H15: Low open heath (30-70% 1m) of *Acacia acradenia* with scattered *Acacia pyrifolia*, *Acacia bivenosa*, *Acacia ancistrocarpa* over regenerating hummock grassland of *Triodia epactia*.

Senna glutinosa subsp pruinosa shrubland on hill slopes

H16: Tall shrubland (10-30% >2m) of *Senna glutinosa* subsp *glutinosa* with scattered shrubs *Acacia ancistrocarpa*, *Acacia pyrifolia*, *Acacia bivenosa* over hummock grassland of *Triodia wiseana* with *Triodia epactia*.

HILL RIDGES AND CRESTS

Open shrub and herbland on hill ridge and crest

HR1: Open shrubland of *Acacia pyrifolia*, *Cullen lachnostachys*, *Senna glutinosa* subsp *pruinosa* over open dwarf shrub and herbland of *Corchorus laniflorus*, *Goodenia stobbsiana*, over hummock grassland of *Triodia epactia* with patches *Cymbopogon ambiguus*, *Eriachne mucronata*.

Hummock grassland and herbs on hill crest

HR2: Hummock grassland of *Triodia wiseana* with *Triodia epactia*. Can be open dwarf shrubland of *Indigofera monophylla* and scattered *Acacia inaequilatera*.

FLAT STONY PLAINS

Hummock grassland on plains

P1: Hummock grassland of *Triodia epactia*. There can be scattered shrubs (<2%) of *Acacia inaequilatera*, *Acacia bivenosa*, *Acacia ancistrocarpa*, *Acacia pyrifolia*.

P2: Hummock grassland of *Triodia wiseana*. There can be scattered shrubs *Acacia inaequilatera*, *Acacia bivenosa* and small herb pockets of *Senna notabilis*, *Corchorus elachocarpus*.

Acacia shrubland on plains

P3: Mixed open (2-10%) to shrubland (10-30% 1-2m) of *Acacia ancistrocarpa*, *Acacia bivenosa*, *Senna glutinosa* subsp *glutinosa* over hummock grassland of *Triodia angusta* with patches of *Triodia epactia* and *Triodia wiseana*.

P4: Low shrubland (10-30% 1m) of *Acacia bivenosa* over dwarf open shrubland (2-10% <0.5m) of *Indigofera monophylla*, *Corchorus laniflorus* over hummock grassland of *Triodia epactia* with occasional *Triodia wiseana*.

P5: Open tall shrubland (2-10% >2m) of *Acacia inaequilatera* over regenerating low shrubland (10-30% 1m) of *Acacia bivenosa*, *Acacia ancistrocarpa* over dense herbland (30-70%) of *Corchorus elachocarpus*, *Solanum diversiflorum* over mixed hummock grassland of *Triodia wiseana*, *Triodia epactia*, *Triodia angusta*.

P6: Open low woodland (2-5% <5m) of *Corymbia hamersleyana* over open (2-10%) to tall shrubland (10-30% >2m) of *Acacia inaequilatera* over regenerating low shrubland (10-30% 1m) of *Acacia bivenosa*, *Acacia ancistrocarpa* over dense herbland (30-70%) of *Corchorus elachocarpus*, *Solanum diversiflorum* over mixed hummock grassland of *Triodia angusta* with some *Triodia epactia*.

P7: Regenerating mixed open low shrubland (2-10% 1m) of *Acacia bivenosa*, *Acacia ancistrocarpa*, *Acacia pyrifolia*, *Acacia orthocarpa* over dwarf shrubland to open heath (15-50% <0.5m) of *Corchorus elachocarpus* over regenerating hummock grassland of *Triodia epactia*.

P8: Very mixed shrubland (10-30% 1-2m) of *Acacia pyrifolia* with *Acacia bivenosa*, *Acacia acradenia*, *Acacia inaequilatera* over open dwarf shrubland (2-10% <1m) of *Indigofera monophylla* over hummock grassland of *Triodia epactia* and *Triodia wiseana*.

Clearing Description

Whim Creek Project.
Whim Creek Metals Pty Ltd proposes to clear up to 60 hectares of native vegetation within a boundary of approximately 164.624 hectares, for the purpose of mineral production. The project is located approximately 100 kilometres southeast of Karratha, within the City of Karratha.

Vegetation Condition

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).

to

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

Comment The vegetation condition was derived from aerial imagery, flora and vegetation survey by Astron (2006), and flora and vegetation desktop assessment by VLA (2021).

The proposed clearing is for the expansion of the existing pit and waste rock landform (Whim Creek, 2021).

3. Assessment of application against Clearing Principles

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

Comments **Proposal is not likely to be at variance to this Principle**

The clearing permit application area is located within the Chichester subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Pilbara Bioregion (GIS Database). The Chichester subregion is characterised by undulating Archaean granite, basalt plains and basaltic ranges. Plains support shrub steppe characterised by *Acacia inaequilatera* over *Triodia wiseana* hummock grasslands, while ranges support *Eucalyptus leucophloia* (CALM, 2002).

No recent flora and vegetation surveys have been conducted over the application area. A flora and vegetation survey was conducted over the application area by Astron (2006) on 13-16 of September 2006. The vegetation of the application area was dominated by *Acacia* shrublands and *Triodia* hummock grasslands (Astron, 2006). No Threatened or Priority Ecological Communities were identified as potentially occurring within the application area and none of the vegetation types mapped and described are listed as Threatened or Priority Ecological Communities (Astron, 2006; VLA, 2021; GIS Database).

A total of 130 flora species from 77 genera and 37 families were recorded within the application area (Astron, 2006). A desktop assessment identified nine flora species of conservation significance within 40 kilometres of the application area (VLA, 2021). Two species were considered likely to occur within the application area based on suitable habitat and proximity of nearby records: *Heliotropium muticum* (P3) and *Goodenia nuda* (P4) (VLA, 2021). An additional three flora species have the potential to occur within the application area based on suitable habitat: *Tephrosia rosea* var Port Hedland (P1), *Gomphrena cucullata* (P3), and *Rhynchosia bungarensis* (P4) (VLA, 2021). The survey conducted in 2006 did not identify any Threatened or Priority flora species within the application area (Astron, 2006). Priority flora species potentially present are not locally or regionally restricted, and occur across multiple IBRA bioregions or subregions (Western Australian Herbarium, 1998-). Given the known records and distribution of these species the proposed clearing is unlikely to have a significant impact on the conservation status of Priority flora potentially present.

A desktop assessment identified a total of 271 vertebrate fauna species potentially occurring in the application area and surrounds (Bamford, 2021). This includes 41 mammals, 136 birds, 83 reptiles and seven amphibians (Bamford, 2021). Of the 271 species recorded, 25 were of conservation significance, with 15 expected to occur as residents and two are expected as regular visitors (Bamford, 2021). A total of 49 vertebrate species, comprising of one amphibian, seven reptiles, 31 birds and ten mammals were recorded during the field assessment of the application area and surrounds (Bamford, 2021). Evidence of two conservation significant fauna species was recorded within the application area, including: northern quoll (*Dasyurus hallucatus*, EN at a state and federal level) and ghost bat (*Macroderma gigas*, VU at a state and federal level) (Bamford, 2021). A fauna management condition is recommended to help mitigate potential impacts to northern quoll, which is a resident to the application area (Bamford, 2021). The fauna assemblage is moderately rich and almost intact, the proposed clearing is unlikely to significantly impact on fauna biodiversity on a local or regional scale (Bamford, 2021).

The vegetation types, fauna habitats and landform types present within the application area, are well represented in surrounding areas (Anax Metals, 2021; Bamford, 2021; VLA, 2021; GIS Database). The application area is unlikely to represent an area of higher biodiversity than surrounding areas, in either a local or regional context.

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

Methodology Anax Metals (2021)
Astron (2006)
Bamford (2021)
CALM (2002)
VLA (2021)
Western Australian Herbarium (1998-)

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.

Comments Proposal is at variance to this Principle

The following five fauna habitats have been recorded within the application area and surrounds (Bamford, 2021):

- Rocky hills
- Gravelly hills
- Stony plains and lower slopes
- Sandy to sandy loam plains
- Drainage lines

The fauna habitats present within the application area and surrounds are considered to be extensive within the region and are not restricted to the application area (Bamford, 2021). The proposed development within application area will likely impact rocky hills, gravelly hills, and stony plains and lower slopes fauna habitats (Bamford, 2021).

Two conservation significant species were recorded within the application area and surrounds by secondary evidence (tracks) or on camera traps, including: northern quoll (*Dasyurus hallucatus*, EN at a state and federal level) and ghost bat (*Macroderma gigas*, VU at a state and federal level) (Bamford, 2021).

Northern quoll were recorded with camera traps at 14 locations within and outside the application area (four within the application area) (Bamford, 2021). Three of four camera traps within the application area recorded northern quoll within close proximity to pre-existing mining operations, such as open pits and waste rock landforms (Bamford, 2021). No northern quoll dens were identified during the two separate site visits, however the landforms present within the application area have the potential to provide denning habitat (Anax Metals, 2021; Bamford, 2021). Of the 60 hectares proposed to clear, approximately 1.5 hectares is considered suitable denning habitat (Anax Metals, 2021). While suitable rocky denning habitat for northern quoll is quite extensive within the broader survey area (up to 8 kilometres from the application area) and within the region, the proposed clearing will impact potential denning habitat (Bamford, 2021). Potential impacts to northern quoll as a result of the proposed clearing may be minimised by the implementation of a fauna management condition that requires pre-clearance surveys to identify individuals of this species within the application area and to relocate them (DBCA, 2021).

Ghost bat has been identified within the application area and determined to be a regular visitor to the broader survey area (Bamford, 2021). There is no known roosting habitat present within the application area (Bamford, 2021). The one record of ghost bat within the application area falls outside the proposed pit and waste rock landform extensions (Bamford, 2021). The proposed clearing may impact potential foraging and dispersal habitat, however the impacts are not expected to significantly impact the conservation status of this species (Bamford, 2021).

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

Methodology Anax Metals (2021)
Bamford (2021)
DBCA (2021)

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, threatened 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 (DBCA, 2007-; GIS Database). The 2006 flora and vegetation survey of the application area did not record any species of Threatened flora (Astron, 2006). A desktop assessment based on current information did not identify any Threatened flora as potentially occurring within the application area (VLA, 2021).

The vegetation types within the application area are common and widespread within the region (Astron, 2006; GIS Database), and the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened flora (DBCA, 2007-; GIS Database).

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

Methodology Astron (2006)
DBCA (2007-)
VLA (2021)

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 desktop review of the application area did not identify any TECs (VLA, 2021). A 2006 flora and vegetation survey of the application area did not map any vegetation that would be considered part of a TEC (Astron, 2006)

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

Methodology Astron (2006)
 VLA (2021)

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 association 649: Sedgeland; Various sedges with very sparse snakewood (GIS Database). Approximately 99% of the pre-European extent of this vegetation association 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	10.12
Beard vegetation association – WA					
649	40,364	40,178	~99	Least Concern	N/A
Beard vegetation association – Pilbara Bioregion					
649	40,364	40,178	~99	Least Concern	N/A

* 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 (VLA, 2021; GIS Database). Multiple drainage lines pass through the application area (GIS Database). Drainage lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall.

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

Methodology VLA (2021)

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 and Ruth 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 consists of stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands and mulga shrublands (Van Vreeswyk et al., 2004). This land system is not generally susceptible to erosion (Van Vreeswyk et al., 2004).

The Ruth land system is described as hills and ridges of volcanic and other rocks supporting hard spinifex (occasionally soft spinifex) grasslands (Van Vreeswyk et al., 2004). This land system is prone to fairly regular burning but is not susceptible to erosion (Van Vreeswyk et al., 2004).

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 Millstream Chichester National Park which is approximately 53 kilometres southwest, and Mungaroo Range Nature Reserve which is located approximately 53 kilometres southeast 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). There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Drainage lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall. 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 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 Pilbara bioregion is semi-arid, with an average rainfall of approximately 297.6 millimetres per year (BoM, 2021). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall during late summer and early autumn (BoM, 2021).

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 (2021)

GIS Database:
- Hydrography, linear

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

Comments

The clearing permit application was advertised on 2 August 2021 by the Department of Mines, Industry Regulation and Safety (DMIRS), inviting submissions from the public. One submission was received in relation to this application, with no objections to the proposed clearing.

There is one native title claim (WC1999/014) over the area under application (DPLH, 2021). 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 two registered Aboriginal Sites of Significance within the application area (DPLH, 2021). 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 (2021)

4. References

- Anax Metals (2021) Additional information received in relation to Clearing Permit Application CPS 9355/1. Anax Metals Ltd, November 2021.
- Astron (2006) Mons Cupri Vegetation and Flora Survey. Prepared For Straits (Whim Creek) Pty Ltd, by Astron Environmental Services, November 2006.
- BoM (2021) Bureau of Meteorology Website – Climate Data Online, Karratha Aero. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 14 September 2021).
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
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5. Glossary

Acronyms:

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

Definitions:

{DBCA (2019) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia}:-

T Threatened species:

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

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

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

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

CR Critically endangered species

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

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

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

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

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

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

Extinct Species:

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

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

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

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

Specially protected species:

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

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

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

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

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

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

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

OS Other specially protected species

Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

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

P **Priority species:**

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

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

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

P1 **Priority One - Poorly-known species**

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

P2 **Priority Two - Poorly-known species**

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

P3 **Priority Three - Poorly-known species**

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

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

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

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.

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