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.: 6657/5
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Regis Resources Limited**

1.3. Property details

Property: Mining Leases 38/237, 38/250, 38/283, 38/292, 38/302, 38/303, 38/316, 38/317, 38/319, 38/343, 38/344, 38/352, 38/354, 38/407, 38/498, 38/499, 38/500, 38/589, 38/802, 38/939, 38/940, 38/943, 38/1091 38/1092, 38/1249, 38/1250, 38/1251, 38/1257, 38/1258, 38/1259, 38/1260, 38/1261, 38/1262, 38/1263, 38/1268, 38/1269, 38/1270;
Miscellaneous Licences 38/29, 38/85, 38/133, 38/182, 38/238, 38/239, 38/234, 38/238, 38/242
Local Government Area: Shire of Laverton
Colloquial name: Duketon, Gloster and Banyego Gold Projects

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
3,767		Mechanical Removal	Mineral Production and Associated Infrastructure

1.5. Decision on application

Decision on Permit Application:
Decision Date:

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description Beard vegetation associations have been mapped for the whole of Western Australia. Two Beard vegetation associations have been mapped within the application area (i.e. the area previously approved under CPS 6657/1, 6657/2, 6657/3, CPS 6657/4 and the proposed amendment area for CPS 6657/5). Only Beard vegetation association 18 is mapped within the amendment area) (GIS Database):

Beard vegetation association 18: Low woodland; mulga (*Acacia aneura*).

The vegetation associations and types found within the previously approved areas (CPS 6657/1, CPS 6657/2, CPS 6657/3 and CPS 6657/4) are described in the relevant decision reports. The vegetation types mapped within the amendment area are described below:

A total of 27 vegetation communities were identified within the amendment area during Level 2 flora and vegetation assessments (Mattiske, 2016a, 2016b, 2017a, 2017b; Regis, 2017). Eleven vegetation communities were defined and mapped within the Tooheys Well section of the amendment area, six vegetation communities were defined and mapped at both Anchor and Dogbolter-Coopers and seven vegetation communities were delineated within the Baneygo haul road project area (Regis, 2017).

Anchor

A2: Low open woodland of *Acacia incurvaneura* over *Acacia tetragonophylla* and mixed *Eremophila spp.* over *Eragrostis eriopoda* and *Eriachne mucronata* on orange sandy/clay-loams on flats.

A6: Low open woodland of *Acacia aneura* with *Acacia incurvaneura*, *Acacia mulganeura* and *Grevillea berryana* over *Eremophila forrestii* subsp. *forrestii* and *Eremophila latrobei* subsp. *latrobei* over *Eragrostis eriopoda*, *Eriachne mucronata* and *Triodia* species on orange sandy-loams with numerous chert outcropping on slopes and ridges.

A8: Low open woodland to open shrubland of *Acacia incurvaneura, Psydrax latifolia* and *Acacia quadrimarginea* over *Acacia tetragonophylla* over *Eremophila galeata* and *Eremophila latrobei subs. latrobei* over *Ptilotus schwartzii* var. *georgi, Solanum lasiophyllum, Eriachne mucronata* and *Eragrostis eriopoda* on orange sandy-loams on flats;

A12: Open shrubland of *Acacia aneura*, *Acacia incurvaneura*, *Acacia ?pteraneura* over *Acacia tetragonophylla* and *Eremphila latrobei* subsp. *latrobei* over *Ptilotus obovatus* var. *obovatus, Ptilotus schwartzii* var. *georgei* and *Solanum lasiophyllum* over mixed grasses on flats to lower slopes with red gravely clay soil and quarts pebbles.

A23: Low open woodland of *Acacia aneura* and *Acacia incurvaneura* over *Eremophila latrobei* subsp. over *Sida* sp., *Ptilotus obovatus var. obovatus* and *Eragrostis eriopoda* on orange sand-loams in minor drainage lines.

D1: Low forest of *Acacia aneura*, *Acacia incurvaneura*, *Acacia ?pteraneura* and *Psydrax latifolia* over *Acacia tetragonophylla, Psydrax suaveolens, Psydrax rigidula* and *Eremophila latrobei* subsp. *latrobei* over *Ptilotus obovatus* var. *obovatus* and *Solanum lasiophyllum* over *Eragrostis eriopoda* and *Aristida obscura* on flowlines and drainage lines.

CL: Cleared

Dogbolter-Coopers

A1: Low open woodland of *Acacia caesaneura*, *Acacia craspedocarpa* and *Acacia incurvaneura* over *Acacia ramulosa* var. *linophylla, Eremophila punctata* and *Eremophila latrobei* subsp. *latrobei* over mixed grasses on red-orange sandy loams on flats and slopes.

A2: Low open woodland of *Acacia incurvaneura* over *Acacia tetragonophylla* and mixed *Eremophila spp.* over *Eragrostis eriopoda* and *Eriachne mucronata* on orange sandy/clay-loams on flats.

A3: Low open woodland of *Acacia aneura* and occasional *Eucalyptus horistes* over *Acacia burkittii*, *Acacia oswaldii*, *Acacia victoriae* and *Senna artemisioides* subsp. *filifolia* over *Ptilotus obovatus*, *Triodia scariosa* and *Enneapogon caerulescens* on red-orange sandy-loams with calcrete and quartz pebbles on flats.

A6: Low open woodland of *Acacia aneura* with *Acacia incurvaneura*, *Acacia mulganeura* and *Grevillea berryana* over *Eremophila forrestii* subsp. *forrestii* and *Eremophila latrobei* subsp. *latrobei* over *Eragrostis eriopoda*, *Eriachne mucronata* and *Triodia* species on orange sandy-loams with numerous chert outcropping on slopes and ridges.

A20: Open to semi-open shrubland of *Acacia caesaneura*, *Acacia craspedocarpa* and *Acacia ?pteraneura* over *Ptilotus* obovatus var. *obovatus, Scaevola spinescens* and *Senna artemisioides* subsp. *filifolia* over mixed grasses and chenopods on red clay loams with numerous granitic outcropping on slopes and ridges.

A23: Low open woodland of *Acacia aneura* and *Acacia incurvaneura* over *Eremophila latrobei* subsp. *latrobei* over *Sida* sp., *Ptilotus obovatus* var. *obovatus* and *Eragrostis eriopoda* on orange sandy-loams in minor drainage lines.

Tooheys Well

GE: Grassland of *Eriachne pulchella* and *Sporobolus actinocladus*, over mixed annuals with emergent *Acacia* sect. *Juliflora*, on seasonally inundated, cracking clay soaks.

CH1: Sparse shrubland of *Acacia tetragonophylla*, *Senna artemisioides* and *Hakea preissii*, over low shrubland of *Maireana pyramidata*, *Frankenia* species, and *Tecticornia* species, over open low herbland of *Maireana* and *Sclerolaena* species, with emergent *Acacia* sect. *Juliflora*, on ironstone and quartz, stony clay floodplains.

SA1: Shrubland of *Acacia burkittii*, *Senna artemisioides* and *Scaevola spinescens*, over low shrubland of *Eremophila spectabilis*, *Eremophila falcata* and *Sida ectogama*, with emergent *Acacia* sect. *Juliflora*, on ironstone stony clay-loam slopes.

SA2: Shrubland of *Acacia burkittii*, *Acacia oswaldii* and *Senna artemisioides*, over low shrubland of *Sida ectogama*, *Maireana pyramidata* and *Enchylaena tomentosa*, with emergent *Acacia* sect. *Juliflora* and occasional *Eucalyptus lucasii*, on sandy major channels.

SA3: Tall shrubland of *Acacia* sect. *Juliflora*, over open shrubland of *Acacia tetragonophylla* and *Eremophila galeata*, over sparse low shrubland of *Hibiscus burtonii*, over low mixed annual herbs and grasses, on orange clay flats.

SA4: Low forest of *Acacia* sect. *Juliflora*, over open shrubland of *Acacia tetragonophylla* and *Senna artemisioides*, over low open shrubland of *Eremophila forrestii*, *Ptilotus obovatus* and *Abutilon cryptopetalum*, on orange clay-loam flowlines and floodplains.

SA5*:* Tall shrubland of *Acacia* sect. *Juliflora,* over open shrubland of *Eremophila latrobei* and *Psydrax suaveolens,* over open low shrubland of *Solanum lasiophyllum* and *Ptilotus schwartzii,* over open grassland of *Eriachne mucronata, Monachather paradoxus* and *Eragrostis eriopoda,* with *occasional Eremophila pungens (P4),* on orange clay-loam flats.

SA6*:* Tall shrubland of *Acacia* sect. *Juliflora,* over open shrubland of *Grevillea excelsior, Eremophila latrobei* and *Eremophila punctata,* over low sparse shrubland of *Ptilotus schwartzii* and *Sida sp. Golden calyces glabrous* (H.N. Foote 32), over open grassland of *Eriachne mucronata,* with occasional *Calytrix uncinata* (P3), on orange stony clay ridges, with banded ironstone outcropping.

SA7*:* Tall shrubland of *Acacia* sect. *Juliflora,* over open shrubland of *Acacia tetragonophylla* and *Senna artemisioides,* over low open shrubland of *Ptilotus obovatus, Solanum lasiophyllum* and *Sida ectogama,* over low grassland of *Eragrostis eriopoda,* on orange clay-loam flats.

SA8*:* Tall thicket of *Acacia* sect. *Juliflora,* over open shrubland of *Acacia tetragonophylla, Eremophila latrobei* and *Psydrax suaveolens,* over open low shrubland of *Sida ectogama, Solanum lasiophyllum* and *Dianella revoluta,* over open grassland of *Eriachne mucronata, Eragrostis eriopoda* and *Aristida obscura,* on orange clay-loam flowlines and floodplains.

SA9*:* Tall shrubland of *Acacia* sect. *Juliflora,* over open shrubland of *Acacia tetragonophylla, Acacia quadrimarginea* and *Eremophila galeata,* over low sparse shrubland of *Sida ectogama, Ptilotus schwartzii* and *Solanum lasiophyllum,* with occasional emergent *Casuarina pauper, Eucalyptus clelandii* and *Eucalyptus platycorys,* on orange stony clay-loam slopes with shallow outcropping.

Baneygo Haul Road

CH1: Sparse shrubland of *Acacia tetragonophylla*, *Senna artemisioides* and *Hakea preissii*, over low shrubland of *Maireana pyramidata*, *Frankenia* species, and *Tecticornia* species, over open low herbland of *Maireana* and *Sclerolaena* species, with emergent *Acacia* sect. *Juliflora*, on ironstone and quartz, stony clay floodplains.

C1: Low open Chenopod shrubland of *Maireana pyramidata* and *Cratystylis subspinescens* with emergent *Acacia* sect. Juliflora (*A. aneura*, *A. incurvaneura* and *A. pteraneura*) and *Hakea preissii* over *Frankenia setosa*, *Maireana georgei, Maireana planifolia*, *Maireana tomentosa* and *Sclerolaena eriacantha* on orange clay-loams on flats.

C3: Open Chenopod shrubland of *Tecticornia pergranulata*, *Maireana pyramidata*, *Frankenia georgei* and *Sclerolaena fusiformis* on flats with red clay soil and quartz pebbles.

A7: Low open woodland of *Acacia* sect. *Juliflora* (*A. aneura, A. incurvaneura* and *A. pteraneura*) over *Acacia craspedocarpa*, *Acacia tetragonophylla*, *Santalum spicatum*, *Eremophila georgei* and *Senna artemisioides* subsp. *filifolia* over *Sida calyxhymenia*, *Ptilotus obovatus* and *Eriachne mucronata* on orange sandy-loams in minor drainage lines.

A13: Semi-closed to open shrubland of *Acacia mulganeura*, *Acacia incurvaneura, Acacia tetragonophylla* and *Acacia craspedocarpa* over *Ptilotus obovatus*, *Hibiscus burtonii* and *Solanum lasiophyllum* on flats with red clay soil and quartz pebbles.

A26: Scrub to open scrub of *Acacia* sect. *Juliflora* (*A. incurvaneura*, *A. macraneura* and *A. mulganeura*) over open low shrubland of *Ptilotus obovatus* and *Solanum lasiophyllum* over low chenopod shrubland of *Maireana triptera* and *Sclerolaena cuneata* on red-orange clay loam on flats and slopes (rarely) with quartz pebbles.

A28: Scrub to open scrub of *Acacia* sect. *Juliflora* (*A. aneura, A. incurvaneura* and *A. pteraneura*) over open low shrubland of *Cratystylis subspinescens*, *Ptilotus obovatus*, *Senna artemisioides* subsp. *xsturtii, Solanum lasiophyllum* over *Maireana pyramidata* on red-orange clay loam on flats and slopes with quartz and iron pebbles.

A29: Thicket to scrub of *Acacia tetragonophylla*, *Acacia* sect. *Juliflora* (*A. aneura and A. incurvaneura)* and *Acacia burkittii* with emergent *Hakea recurva* subsp. *arida* over low shrubland of *Senna artemisioides* subsp. *xartemisioides, Cratystylis subspinescens, Eremophila youngii* and *Ptilotus divaricatus* over mixed grasses on red-orange clay loam to sandy loam on minor drainage lines.

Clearing Description

Gloster Gold Mine Project, Greater Duketon Gold Project and Banyego Gold Mine Project
Regis Resources Limited proposes to clear up to 3,767 hectares of native vegetation within a total boundary of approximately 13,702 hectares, for the purpose of mineral production and associated infrastructure. The project is located approximately 140 kilometres north of Laverton in the Shire of Laverton.

Vegetation Condition

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

To:

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

Comment

Clearing Permit CPS 6657/1 was granted by the Department of Mines and Petroleum (DMP) on 15 October 2015 and authorised the clearing of up to 1,450 hectares of native vegetation within a clearing permit boundary of approximately 7,862 hectares. The clearing was authorised for the purpose of mineral production and associated infrastructure. CPS 6657/1 consolidated five existing permits into one new permit and resulted in an increase in the total amount of clearing by 95 hectares.

Clearing permit CPS 6657/2 was granted by DMP on 11 February 2016 and authorised the clearing of up to 1,900 hectares within a clearing permit boundary of approximately 8,767 hectares. This amendment was required in order to allow for the development of the Gloster Gold Mine Project.

Clearing permit CPS 6657/3 was granted by DMP on 21 April 2016 and authorised the clearing of up to 2,250 hectares within a clearing permit boundary of approximately 9,744 hectares. This amendment was required in order to allow for the construction a haul road connecting the Gloster Gold Mine area to the Greater Duketon Gold Project area.

Clearing permit CPS 6657/4 was granted by DMP on 27 October 2016 and authorised the clearing of up to 2,759 hectares within a clearing permit boundary of approximately 11,447 hectares. This amendment was required in order to allow for the recommencement and expansion of mining at the Baneygo Gold Mine area.

The assessment of the previously approved permit areas can be found within decision reports CPS 6657/1, CPS 6657/2, CPS 6657/3 and CPS 6657/4. The content of this assessment against the clearing principles applies to the additional proposed clearing (1,008 hectares) within Mining Leases 38/237, 38/292, 38/302, 38/303, 38/407 and Miscellaneous Licence 38/239 which is required in order to allow for the development of the Anchor, Dogbolter-Coopers and Tooheys Well satellite open pit mines and the Baneygo to Rosemont haul road to the existing Duketon Gold Project.

The condition of the vegetation in the amendment area (CPS 6657/5) was determined via flora and vegetation surveys conducted by Mattiske Consulting Pty Ltd (2016a, 2016b, 2017a and 2017b) and summary information provided by Regis (2017).

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 is not likely to be at variance to this Principle

The areas previously approved under CPS 6657/4, when combined with the proposed amendment area, is considered to be the application area. The full assessment of all previously approved areas can be found within the relevant decision reports for CPS 6657/1, CPS 6657/2, CPS 6657/3 and CPS 6657/4.

The area subject to this amendment (the amendment area), applies to the area proposed for the Anchor, Dogbolter-Coopers and Tooheys Well satellite open pit mines and the Baneygo to Rosemont haul road. Vegetation will be cleared for the open pits, waste rock dumps, internal haul roads, access tracks, ore and topsoil stockpiles and supporting infrastructure (Regis, 2017). The Anchor mine site has previously been mined with

open pit and waste rock stockpiles present and all areas including Dogbolter-Coopers, Tooheys Well and Baneygo have been subject to exploration activities (Regis, 2017).

Under the proposed amendment, an additional 1008 hectares is proposed within an increased clearing permit boundary of approximately 2,255 hectares. The proposed amendment will result in the clearing of up to 3,767 hectares, over three separate project areas (Gloster Gold Mine Project, Greater Duketon Gold Project and Banyego Gold Mine Project) within a total clearing permit boundary of 13,702 hectares.

The amendment area is located within the East Murchison subregion of the Murchison Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The East Murchison subregion is characterised by internal drainage, extensive areas of elevated red desert sandplains with minimal dune development, salt lake systems associated with the occluded paleodrainage system, broad plains of red-brown soils and breakaway complexes, as well as red sandplains (CALM, 2002). Vegetation is dominated by Mulga woodlands which are often rich in ephemerals; hummock grasslands, saltbush shrublands and *Halosarcia* shrublands (CALM, 2002).

The condition of the vegetation within the amendment area varies from 'Completely Degraded' to 'Pristine' (Mattiske, 2016a, 2016b, 2017a, 2017b; Regis, 2017). Areas of 'Completely Degraded' to 'Degraded' vegetation occur as a result of historical mining activities and pastoral use (Regis, 2017). Based on aerial imagery and survey data, the majority of the vegetation within the amendment area is considered to be in an 'Excellent' condition or better and shows little to no signs of disturbance. Despite the lack of disturbance, the health of plants was regarded to be very poor at the time of survey, with little to no fertile material available (lacking flowers and fruits). This is likely a result of water stress (Regis, 2017).

Level 2 flora and vegetation surveys were conducted by Mattiske Consulting Pty Ltd over the majority of the amendment area and included Tooheys Well, Dogbolter-Coopers and Anchor proposed disturbance areas (Regis, 2017). A reconnaissance survey was completed for the Baneygo to Rosemont haul road (Regis, 2017).

No Threatened flora species were recorded within the amendment area, although several Priority flora species were identified. These included *Phyllanthus baeckeoides* (P3), *Calytrix praecipua* (P3), *Gunniopsis propinqua* (P3) and *Eremophila pungens* (P4). Priority flora species were recorded at Anchor, Dogbolter-Cooper and the Tooheys Well areas, but were not recorded within areas proposed for clearing within the Baneygo haul road disturbance area (Mattiske, 2016a, 2016b, 2017a, 2017b; Regis, 2017).

Phyllanthus baeckeoides was recorded from a single location on the wetter areas of the slopes within the A7 vegetation community at the Anchor deposit, with only 11-25 individuals being recorded (Mattiske 2017a). However, this species was also recorded during previous survey work conducted in the vicinity (Mattiske, 2017a). *Phyllanthus baeckeoides* is known from a variety of habitats, including banded ironstone formations, ridges, sandstone, skeletal soil, red sandy clay loam on long unburnt areas and red-orange sandy loam surface crust over lateritic gravels (Western Australian Herbarium, 1998-).

Eremophila pungens occurred broadly across multiple areas throughout the application area, on both flats and in creeklines, and does not appear restricted to a specific vegetation community. This species was recorded previously on other Regis Resources lease areas suggesting that this species is poorly known rather than threatened (Mattiske, 2016a, 2016b, 2017a).

Calytrix praecipua was recorded from four locations in low numbers with one location supporting one plant and the other three locations supporting between 5 to 10 plants. *Calytrix praecipua* was recorded previously in low numbers on other Regis Resources lease areas, which suggests that this species is poorly known rather than threatened. This species has been recorded growing in association with vegetation community SA6 and SA7, which is not considered to be a unique or restricted habitat (Mattiske 2016a, 2016b, 2017a and 2017b; Regis, 2017).

Gunniopsis propinqua was associated with vegetation community CH1 and was only recorded at one location (at Tooheys Well), with only one plant being recorded. This species is known across four IBRA regions and has been recorded on stony sandy loam, lateritic outcrops, winter-wet sites and claypans (Western Australian Herbarium, 1998-).

Recorded occurrences *of Ptilotus schwartzii* var. *georgei* and *Sporobolus actinocladus* within the amendment area represented a range extension, however these species are not considered to be of conservation significance (Mattiske, 2016a; Mattiske, 2016b; Mattiske, 2017a; Regis, 2017). The extension of these species range is largely a result of reduced survey effort in the region where few collections of the specimens have been made (Mattiske, 2016a; Mattiske, 2016b; Mattiske, 2017a).

There were a number of limitations noted within the flora survey, such as below average rainfall in the lead up to the survey and signs of vegetation stress which inhibited the confirmation of some taxa to species level. Many specimens of annual and ephemeral species were unable to be identified past genus or confirmed to species level due to lack of fertile material.

Despite survey limitations, based on available survey data and records, large scale impacts to flora species of conservation significance (including Priority flora species) are considered unlikely, therefore it is not anticipated that the proposed clearing will adversely impact on Priority flora species at a population or species level. To reduce potential adverse impacts to Priority flora species, the proponent will implement a number of management

procedures. These management measures are outlined within the Regis (2017) Native Vegetation Clearing Permit Application Supporting Document and include such activities as implementing clearance and disturbance protocols, ensuring personnel have an awareness of conservation significant flora known or recorded in the area, minimising clearing, undertaking progressive rehabilitation and delineating recorded occurrences of Priority flora.

Twenty seven vegetation communities were identified during flora surveys, all of which are considered to be well represented outside the amendment area (Mattiske 2016a, 2016b, 2017a and 2017b). No Threatened or Priority Ecological Communities are known to occur within the amendment area and none were recorded during flora surveys. The closest community (a Priority Ecological Community) is located more than 30 kilometres south (GIS Database).

The fauna habitats present within the amendment area are common and widespread in the landscape and bioregion, with vast tracts of similar habitat in adjacent areas (Terrestrial Ecosystems, 2016a; 2016b; 2017). The vegetation within the amendment area is not considered to be providing, or contributing to, important ecological linkages or fauna movement corridors (Terrestrial Ecosystems, 2016a; 2016b; 2017).

Several introduced (weed) species have been recorded within the amendment area (Regis, 2017). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the continued implementation of a weed management condition.

Based on previous assessments (CPS 6657/1, CPS 6657/2, CPS 6657/3 and CPS 6657/4) and the above information, the proposed clearing is not likely to be at variance to this Principle. It is recommended that the existing weed management condition remains.

Methodology

CALM (2002)
Mattiske (2016a)
Mattiske (2016b)
Mattiske (2017a)
Mattiske (2017b)
Regis (2017)
Terrestrial Ecosystems (2016a)
Terrestrial Ecosystems (2016b)
Terrestrial Ecosystems (2017)
Western Australian Herbarium (1998-)

GIS Database:
- IBRA Australia
- Imagery
- Pre-European vegetation
- Threatened Ecological Sites Buffered

(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 is not likely to be at variance to this Principle

Level 1 fauna surveys have been conducted over the amendment area and surrounds. Terrestrial Ecosystems (2012, 2016a, 2016b and 2017) identified nine broad fauna habitats:

- Open mulga woodland over sparse mixed scattered shrubs (located within the Anchor project area);
- Flat open mulga woodland over scattered shrubs on a stony sandyclay substrate (located within the Tooheys Well project area);
- Open mulga woodland over scattered shrubs on a sandy-clay substrate with larger surface stones. This area is often undulating and creates a low ridgeline (located within the Tooheys Well project area);
- Open plain with occasional chenopods or shrubland over grasses (located within the Tooheys Well project area);
- Flat open mulga woodland over scattered shrubs on a sandy-clay substrate with and without stones or pebbles. Some areas have also been disturbed by previous exploration areas, but are the same habitat types (located within the Dogbolter-Coopers Project area);
- Flat open chenopod shurbland on a sandy-clay or stony sandy-clay substrate (located within the Baneygo project area);
- Floodway and minor drainage line with trees and shrubs on a clay substrate(located within the Baneygo project area);
- Flat open mulga woodland over scattered shrubs on a stony sandy-clay substrate (located within the Baneygo project area).

The amendment area also includes a poorly rehabilitated waste dump and highly degraded mining pits and associated earth works and adjacent exploration areas, which may offer limited habitat potential for local fauna species. Parts of the amendment area have been grazed by cattle and possibly goats over many years (Regis, 2017)

No fauna species of conservation significance were recorded within the amendment area during fauna surveys (Terrestrial Ecosystems 2012, 2016a, 2016b and 2017), however a number of species were identified as having the potential to persist or occur within the amendment area and surrounds. Following further analysis of these species and the habitat on offer, Terrestrial Ecosystems (2012, 2016a, 2016b and 2017) considered that the proposed clearing (and previous clearing activities) is unlikely to impact on any species of conservation significance. Conservation significant species identified as potentially occurring in the vicinity are either migratory, able to relocate easily into neighbouring areas, or preferred habitat is not present (Terrestrial Ecosystems 2012, 2016a, 2016b and 2017). It is possible that some local fauna species (mostly small vertebrates) may be adversely impacted by proposed clearing activities. To reduce potential adverse impacts to local fauna species, the proponent will implement fauna management procedures. These management measures are outlined within the Regis (2017) Native Vegetation Clearing Permit Application Supporting Document.

The amendment area currently does not provide any important ecological linkage or fauna movement corridor (Regis, 2017; GIS Database). There are station and exploration tracks that dissect the project area but most of these are relatively narrow and unlikely to provide a barrier that would inhibit the movement of fauna within the general area (Regis, 2017).

Based on previous assessments (CPS 6657/1, CPS 6657/2, CPS 6657/3 and CPS 6657/4) and the above information, and provided that fauna management measures are implemented, the proposed clearing is not likely to be at variance to this Principle.

Methodology

Terrestrial Ecosystems (2012)
Terrestrial Ecosystems (2016a)
Terrestrial Ecosystems (2016b)
Terrestrial Ecosystems (2017).
Regis (2017)

GIS Database
- Imagery

(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

According to available databases, there are no Threatened flora species known to occur within the amendment area (DPaW, 2017; GIS Database). No Threatened flora species have been previously recorded near the amendment area and none were recorded during Level 2 flora and vegetation surveys of the amendment area (Mattiske, 2016a; Mattiske, 2016b; Mattiske, 2017a; Mattiske, 2017b; Regis, 2017).

Based on previous assessments (CPS 6657/1, CPS 6657/2, CPS 6657/3 and CPS 6657/4) and the above information, the proposed clearing is not likely to be at variance to this Principle.

Methodology

DPaW (2017)
Mattiske (2016a)
Mattiske (2016b)
Mattiske (2017a)
Mattiske (2017b)
Regis (2017)

GIS Database
- Threatened and Priority Flora List

(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

According to available datasets, there are no known Threatened Ecological Communities (TECs) within the amendment area (GIS Database). Level 2 flora and vegetation surveys of the amendment area did not reveal the presence of any TECs (Mattiske, 2016a; Mattiske, 2016b; Mattiske, 2017a; Mattiske, 2017b; Regis, 2017).

Based on previous assessments (CPS 6657/1, CPS 6657/2, CPS 6657/3 and CPS 6657/4) and the above information, the proposed clearing is not likely to be at variance to this Principle.

Methodology

Mattiske (2016a)
Mattiske (2016b)
Mattiske (2017a)
Mattiske (2017b)
Regis (2017)

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

(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 amendment area falls within the Murchison IBRA bioregion (GIS Database) in which approximately 99% of pre-European vegetation remains (see table) (Government of Western Australia, 2016; GIS Database). This gives it a conservation status of 'Least Concern' according to the Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment, 2002).

One Beard vegetation association has been mapped within the amendment area (GIS Database). As the below table illustrates, Beard vegetation association 18 is well represented, retaining at least 99% of pre-European vegetation within the state and bioregion (Government of Western Australia, 2015). Given the amount of vegetation remaining in the local area and bioregion, the vegetation proposed to be cleared is not considered to represent a remnant within an extensively cleared area, nor is the amendment area considered to be providing, or contributing to, important ecological linkages or fauna movement corridors (Regis, 2017; Terrestrial Ecosystems, 2012, 2016a, 2016b and 2017; GIS Database).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DPaW Managed Lands
IBRA Bioregion - Murchison	28,120,586	28,044,823	~ 99	Least Concern	~ 7.8
Beard veg assoc. - State					
18	19,892,304	19,843,727	~ 99	Least Concern	~ 6.3
Beard veg assoc. - Bioregion					
18	12,403,172	12,363,252	~ 99	Least Concern	~ 5

* Government of Western Australia (2016)
** Department of Natural Resources and Environment (2002)

Based on previous assessments (CPS 6657/1, CPS 6657/2, CPS 6657/3 and CPS 6657/4) and the above information, the proposed clearing is not at variance to this principle.

Methodology

Department of Natural Resources and Environment (2002)
Government of Western Australia (2016)
Terrestrial Ecosystems (2012)
Terrestrial Ecosystems (2016a)
Terrestrial Ecosystems (2016b)
Terrestrial Ecosystems (2017)

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

Several non-perennial watercourses have been mapped within the amendment area (GIS Database) and a number of the vegetation communities identified within the amendment area are considered to be growing in association with minor drainage lines (Mattiske, 2016a; Mattiske, 2016b; Mattiske, 2017a; Mattiske 2017b; Regis, 2017).

Given that the amendment area is located in an area of low rainfall, where watercourses only flow after heavy rainfall events (BoM, 2017; Regis, 2017); significant impacts to vegetation growing in association with a watercourse are unlikely. However, these drainage lines are known to generally support *Acacia* species which are particularly susceptible to changes in surface hydrology (Regis, 2017).

The proponent has committed to implementing management procedures to mitigate potential impacts to watercourses and associated vegetation. These management measures are outlined within the Regis (2017) Native Vegetation Clearing Permit Application Supporting Document. Potential impacts to vegetation growing in

association with a watercourse or wetland as a result of the proposed clearing may also be minimised by the continued implementation of a watercourse management condition.

Based on previous assessments (CPS 6657/1, CPS 6657/2, CPS 6657/3 and CPS 6657/4) and the above information, the proposed clearing is at variance to this principle.

Methodology

BoM (2017)
Mattiske (2016a)
Mattiske (2016b)
Mattiske (2017a)
Mattiske (2017b)
Regis (2017)

GIS Database:
- Hydrography, linear

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

Comments

Proposal may be at variance to this Principle

Four land systems have been mapped within the amendment area; Hootanui, Steer, Brooking, Bevon and Violet (GIS Database). The Hootanui land system is susceptible to water erosion in areas where perennial shrub cover is substantially reduced or the soil surface is disturbed (Pringle *et al.* 1994). The Steer, Bevon and Brooking land systems are generally not prone to erosion as stone mantles provide effective protection (Pringle *et al.* 1994), although the proposed clearing has the potential to cause soil erosion by breaking protective stony mantles and exposing underlying soils that may be susceptible to erosion (Pringle *et al.* 1994). The Violet land system is also protected by abundant mantles over most areas, except where the soil surface is disturbed. Following disturbance, the soil becomes moderately susceptible to water erosion (Pringle *et al.* 1994).

The proponent has committed to implementing management procedures to mitigate potential land degradation issues. These management measures are outlined within the Regis (2017) Native Vegetation Clearing Permit Application Supporting Document. Potential land degradation as a result of the proposed clearing may be further minimised by the continued implementation of a staged clearing condition. It is also expected that rehabilitation activities will be undertaken as per Mining Act approvals, conditions and requirements. Completed rehabilitation activities will reduce the likelihood of any long-term impacts that may arise from the clearing of up to 1008 hectares of native vegetation.

Based on previous assessments (CPS 6657/1, CPS 6657/2, CPS 6657/3 and CPS 6657/4) and the above information, the proposed clearing may be at variance to this Principle.

Methodology

Pringle *et al.* (1994)
Regis (2017)

GIS Database:
- Landsystems 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

The amendment area is not located within or adjacent to any conservation areas (GIS Database). The closest conservation area (De La Poer Range Nature Reserve) is situated approximately 25 kilometres north-north east of the northern most section of the application area (the Anchor project area) (GIS Database).

Given that the local area is well vegetated, with large amounts of intact native vegetation remaining (Regis, 2017; GIS Database), the proposed clearing is unlikely to impact on the environmental values of adjacent or nearby conservation areas.

Based on previous assessments (CPS 6657/1, CPS 6657/2, CPS 6657/3 and CPS 6657/4) and the above information, the proposed clearing is not likely to be at variance to this Principle.

Methodology

Regis (2017)

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

The amendment area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The amendment area is located within an arid environment with an average annual rainfall of approximately 236 millimetres and experiences mean annual evaporation of approximately 3,400 millimetres (BoM, 2017; CALM, 2002). Although there are a number of minor ephemeral watercourses located in the amendment area, it is likely these drainage lines would only flow for short periods following significant rainfall events (Regis, 2017). Considering there are no permanent watercourses within the amendment area, the proposed clearing is unlikely to impact on surface water quality.

Groundwater quality within the amendment area ranges from marginal to brackish (500 – 3000 TDS mg/L) (GIS Database). The local area and region is well vegetated and the proposed clearing of hectares of native vegetation is unlikely to significantly impact on the quality of underground water. While clearing activities may be unlikely to result in impacts, mining activities do have the potential to impact on groundwater quality.

The proponent has committed to implementing management procedures to mitigate potential impacts to the quality of surface and groundwater. These management measures are outlined within the Regis (2017) Native Vegetation Clearing Permit Application Supporting Document. It is also expected that rehabilitation activities will be undertaken as per Mining Act approvals, conditions and requirements for the related mining proposal. Completed rehabilitation activities will reduce the likelihood of any long-term impacts that may arise from the clearing of up to 1,008 hectares of native vegetation.

Based on previous assessments (CPS 6657/1, CPS 6657/2, CPS 6657/3 and CPS 6657/4) and the above information, the proposed clearing is not likely to be at variance to this Principle.

Methodology

BoM (2017)
CALM (2002)
Regis (2017)

GIS Database:
- Groundwater Salinity, Satewide
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)
- RIWI Act, Groundwater 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 amendment area is located in the Murchison region, where evaporation far exceeds annual rainfall (BoM, 2017; CALM, 2002) and surface water does not persist for extended periods (Regis, 2017).

Given the climatic conditions of the Murchison region and the large amount of remaining vegetation in the local area, the proposed clearing is unlikely to result in a significant increase in the incidence or intensity of flooding.

Based on previous assessments (CPS 6657/1, CPS 6657/2, CPS 6657/3 and CPS 6657/4) and the above information, the proposed clearing is not likely to be at variance to this Principle.

Methodology

BoM (2017)
CALM (2002)
Regis (2017)

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

All proposed mining activities and operations within the application area permit boundary (13,702 hectares) have either already been approved under the *Mining Act 1978,* or are currently under assessment. Within the approved associated mining proposals, the proponent has committed to implementing management measures to reduce potential environmental impacts. In addition to this, a Mine Closure Plan (MCP) has been developed and continues to be revised to address mine closure issues. Within the MCP, the proponent has committed to conducting rehabilitation activities post mining. It is anticipated that additional areas currently under assessment will include management measures to reduce potential environmental impacts.

There are no native title claims over the previously approved application area (CPS 6657/4) or the amendment area (DPLH, 2016; GIS Database). 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*.

No Sites of Aboriginal Significance are known from the amendment area; however, a number of Sites of Aboriginal Significance are located throughout other areas of the application area (DPLH, 2017; GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal 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.

The amendment application was advertised on 21 August 2017 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received.

Methodology DPLH (2017)

4. References

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Mattiske (2016b) Flora and Vegetation Survey of the Tooheys Well Project Area. Report prepared for Regis Resources Limited, by Mattiske Consulting Pty Ltd, December 2016.

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Terrestrial Ecosystems (2016b) Level 1 Fauna Risk Assessment for the Tooheys Project. Report prepared for Regis Resources Limited, by Terrestrial Ecosystems, December 2016.

Terrestrial Ecosystems (2017) Level 1 Fauna Risk Assessment for the Proposed Haul Road to the Banyego Project. Report prepared for Regis Resources Limited, by Terrestrial Ecosystems, July 2017.

Western Australian Herbarium (1998-) FloraBase—the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. https://florabase.dpaw.wa.gov.au/

5. Glossary

Acronyms:

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)
DBCA	Department of Biodiversity Conservation and Attractions, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DBCA and DWER)
DEE	Department of the Environment and Energy, Australian Government
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)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora
DoE	Department of the Environment, Australian Government (now DEE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DEE)
DWER	Department of Water and Environmental Regulation, Western Australia
EPA	Environmental Protection Authority, Western Australia
EP Act	*Environmental Protection Act 1986*, 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
BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DPaW and DER)
DER	Department of Environment Regulation, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DRF	Declared Rare Flora
DotEE	Department of the Environment and Energy, Australian Government
DoW	Department of Water, Western Australia
DPaW	Department of Parks and Wildlife, Western Australia
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DotE)
EPA	Environmental Protection Authority, Western Australia
EP Act	*Environmental Protection Act 1986*, 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:

{DPaW (2017) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

T **Threatened species:**
Published as Specially Protected under the *Wildlife Conservation Act 1950,* listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).

Threatened fauna is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the Wildlife Conservation Act.

Threatened flora is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the Wildlife Conservation Act.

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. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

EN **Endangered species**
Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

VU **Vulnerable species**
Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

EX **Presumed extinct species**
Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.

IA **Migratory birds protected under an international agreement**
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 the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.

CD **Conservation dependent fauna**
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.

OS **Other specially protected fauna**
Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.

P **Priority species**
Species which are poorly known; or
Species that are adequately known, are rare but not threatened, and 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.