



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5682/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Minjar Gold Pty Ltd

1.3. Property details

Property: Mining Lease 59/406
Mining Lease 59/457
Mining Lease 59/591
Mining Lease 59/732
Miscellaneous Licence 59/121
Miscellaneous Licence 59/122
Local Government Area: Shire of Yalgoo
Colloquial name: Minjar Gold Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
57.32		Mechanical Removal	Mineral Production and Associated Activities

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 12 September 2013

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 and are useful to look at vegetation in a regional context. The following Beard vegetation associations are located within the application area (GIS Database):

202: Shrublands; mulga and *Acacia quadrimarginea* scrub;
352: Medium woodland; York gum; and
420: Shrublands; bowgada and jam scrub.

The application area comprises two separate areas or prospects known as Austin and Riley together with proposed haul roads for both prospects.

AUSTIN

Several flora and vegetation surveys have previously been conducted over the Austin prospect and Minjar Gold tenements. Vegetation mapping for the Austin prospect has been sourced from a flora and vegetation survey undertaken by Mattiske Consulting Pty Ltd (Mattiske) from 16 to 20 November 2009 (Mattiske, 2009a). Animal Plant Mineral (APM) reviewed this survey and conducted a targeted Threatened Flora and Priority Flora survey of the Austin prospect (approximately 54 hectares) and several other areas from 7 to 18 November 2011 (APM, 2011). This survey included field verification of the vegetation mapping undertaken by Mattiske in 2009. For the proposed haul road, a flora and vegetation survey was undertaken by APM. This survey included several other areas and was undertaken from 29 August to 5 September 2012, 13 to 24 September 2012 and 4 to 14 October 2012 (APM, 2012b). According to Minjar (2013), the following 20 vegetation communities occur within the Austin application area.

Austin Prospect and northern most portion of the proposed haul road (sourced from Mattiske, 2009a)

Callitris Woodlands

1. C3: Low Open Woodland of *Callitris columellaris* over *Acacia ayersiana* and *Acacia ramulosa* var. *ramulosa* over *Ptilotus* spp., *Olearia* spp. and mixed low shrubs over *Goodenia* spp. on orange-red sandy-loam flats.

Acacia Shrublands

2. A1: Tall Open Scrub of *Acacia ramulosa* var. *ramulosa* with *Acacia sibina* over *Eremophila forrestii* and mixed low shrubs over annuals on orange sandy loams on lower slopes and flats.

3. A6: Tall Open Scrub of *Acacia ramulosa* var. *ramulosa* with *Acacia burkittii*, *Acacia tetragonophylla* and *Grevillea obliquistigma* subsp. *obliquistigma* over *Philothea brucei* subsp. *brucei* and *Scaevola spinescens* over annuals on orange brown sandy loam with rock cover on flats.

4. A17: Tall Open Shrubland of *Acacia ramulosa* var. *ramulosa* with *Acacia tetragonophylla* and *Acacia exocarpoides* over *Eremophila clarkei* and *Philotheca brucei* subsp. *brucei* over mixed low shrubs and annuals with occasional emergent *Eucalyptus horistes* on rocky orange-brown clayey-loam flats.

5. A18: Tall Open Shrubland of *Acacia ramulosa* var. *ramulosa* and *Acacia effusifolia* over *Philotheca brucei* subsp. *brucei*, *Grevillea obliquistigma* subsp. *obliquistigma* and *Aluta aspera* subsp. *hesperia* over mixed low shrubs over annuals, with emergent *Acacia aneura* var. *aneura* on orange-brown rocky slopes with occasional ironstone pebbles.

Shrublands

6. S8: Open Shrubland of *Thryptomene costata* with occasional emergent *Acacia* spp., *Thryptomene decussata* and *Philotheca brucei* subsp. *brucei* over *Ptilotus schwartzii* and mixed low shrubs over annuals on red-brown slightly rocky clay flats with quartz and occasional ironstone pebbles.

Proposed Haul Road (sourced from APM, 2012b)

Acacia Thicket

7. arT1: *Acacia ramulosa* var. *ramulosa* (*Acacia incurvaneura* ms) thicket, over *Eremophila georgei*, *Philotheca brucei* subsp. *brucei* open shrubland.

8. aeT2: *Acacia effusifolia* (*Acacia incurvaneura* ms) thicket, over mixed *Eremophila latrobei* subsp. *latrobei*, *Leucopogon* sp. Clyde Hill, *Aluta aspera* subsp. *hesperia*, *Eremophila forrestii* subsp. *forrestii* shrubland.

9. aeT3: *Acacia effusifolia* thicket.

10. avT4: *Acacia victoriae* subsp. *victoriae* thicket, over seasonal mixed herbs.

11. avS5: *Acacia victoriae* subsp. *victoriae* scrub, over seasonal mixed herbs.

12. aeT5: *Acacia effusifolia* (*Acacia incurvaneura* ms) thicket, over mixed *Eremophila latrobei* subsp. *latrobei*, *Aluta aspera* subsp. *hesperia*, *Philotheca brucei* subsp. *brucei* mixed open shrubland.

Acacia Scrub

13. asS1: *Acacia sibina* and *Acacia ramulosa* var. *ramulosa* scrub, over *Acacia tetragonophylla* scattered shrubs.

14. aeS3: *Acacia effusifolia* (*Acacia caesaneura* ms) scrub, over *Ptilotus obovatus* var. *obovatus* scattered low shrubs.

15. aeS4: *Acacia effusifolia* scrub.

16. aeS4a: *Acacia effusifolia* and *Acacia sibina* scrub.

Acacia Open Scrub

17. aeOS1: *Acacia effusifolia*, *Acacia assimilis* subsp. *assimilis* open scrub, over mixed *Thryptomene costata*, *Thryptomene decussata* and *Philotheca sericea* open shrubland.

18. aeOS2: *Acacia assimilis* subsp. *assimilis*, *Acacia effusifolia* (*Acacia exocarpoides*) mixed open scrub, over *Eremophila georgei*, *Eremophila latrobei* subsp. *latrobei*, *Philotheca sericea* shrubland.

19. *Acacia effusifolia* open scrub, over *Eremophila oppositifolia* subsp. *angustifolia*, *Eremophila georgei* and *Scaevola spinescens* open low shrubland.

20. aeOS4: *Acacia effusifolia* open scrub, over *Ptilotus obovatus* var. *obovatus* low open shrubland.

RILEY

APM conducted a flora and vegetation survey over the Riley prospect and several other prospects from 29 August to 5 September 2012, 13 to 24 September 2012 and 4 to 14 October 2012 (APM, 2012b). This included two proposed haul road options with one located to the north of the prospect and one located to the south of the prospect. The northern option was selected, therefore, the southern option has been excluded from the application area. A small portion (approximately 8 hectares) at the western end of the haul road was not covered by the APM (2012b) survey. However, the area to the immediate north was mapped by Mattiske during the Eastern Creek flora and vegetation survey conducted from 6 to 10 July 2009 (Mattiske, 2009b). Vegetation mapping from this survey is therefore likely to extend into the unmapped portion. This area appears to have been covered by the targeted Threatened Flora and Priority Flora survey conducted by Animal Plant Mineral (APM) from 7 to 18 November 2011 (APM, 2011). According to APM (2012b), the following 21 vegetation communities occur within the surveyed area at Riley.

Acacia Thicket

1. arT1a: *Acacia ramulosa* var. *ramulosa* (*Acacia incurvaneura* ms) thicket, over *Philotheca sericea*, *Mirbelia rhagodioides*, *Eremophila latrobei* subsp. *latrobei*, *Drummondita fulva* (P3) and *Pluchea dentex* low shrubland, over scattered seasonal hermland.

2. arT7: *Acacia ramulosa* var. *ramulosa* (*Acacia caesaneura* ms) thicket, over *Ptilotus obovatus* open low shrubland, over very open seasonal hermland.

3. abS3: *Acacia burkittii* scrub, over *Ptilotus obovatus* and Chenopod low shrubland.

4. aqs4: *Acacia quadrimarginea* (*Acacia ramulosa*), *Acacia kochii* (*Dodonaea inaequifolia*) scrub, over *Ptilotus obovatus* low shrubland, over very open tussock grasses and scattered seasonal herbs.

5. arS6: *Acacia ramulosa* var. *ramulosa*, *Acacia effusifolia* scrub, over *Monachather paradoxus* very open tussock grassland / scattered seasonal herbs.

6. arS7: *Acacia ramulosa* var. *ramulosa* (*Acacia burkittii*) scrub, over mixed *Eremophila georgei*, *Scaevola spinescens* and *Ptilotus obovatus* open low shrubland, over open tussock/seasonal herbland.

7. arS7a: *Acacia ramulosa* var. *ramulosa* (*Acacia burkittii*) scrub, over mixed chenopodae low shrubland over scattered seasonal herbs.

8. arS8: *Acacia ramulosa* var. *ramulosa* and *Thryptomene decussata* scrub, over mixed open low shrubland.

9. aeS9: *Acacia effusifolia* (*Melaleuca leiocarpa*) scrub, over *Eremophila forrestii* subsp. *forrestii*, *Eremophila forrestii* and *Aluta aspera* subsp. *hesperia* heath, over *Monocantha paradoxa* open tussock grassland/open mixed seasonal herbland.

10. aeS9a: *Acacia effusifolia* scrub, over *Eremophila forrestii* subsp. *forrestii*, *Eremophila forrestii* and *Aluta aspera* subsp. *hesperia* heath, over *Monocantha paradoxa* open tussock grassland / open mixed seasonal herbland.

11. arOS7: *Acacia ramulosa* var. *ramulosa* open scrub, over *Ptilotus obovatus* low open shrubland.

12. arOS8: *Acacia ramulosa* var. *ramulosa* open scrub, over *Thryptomene costata* heath, over *Austrostipa scabra* open tussock grassland/mixed open seasonal herbland.

13. aaOS11: *Acacia aulacophylla* (*Micromyrtus trudgenii* P3) open scrub, over *Stylidium longibracteatum* scattered herbs.

14. arOS12: *Acacia ramulosa* var. *ramulosa* open scrub, over *Eremophila georgei* open low shrubland, over scattered seasonal herbland.

Melaleuca Open Scrub

15. mhOS1: *Melaleuca hamata* and *Micromyrtus trudgenii* (P3) open scrub, over *Ptilotus obovatus* open low shrubland, over scattered seasonal herbland.

16. mlOS2: *Melaleuca lateriflora* open scrub.

Eucalyptus Open Woodland

17. elsOW3: *Eucalyptus loxophleba* subsp. *supralaevis* open woodland, over *Acacia tetragonophylla* tall scrub, over mixed Chenopod low shrubland, over open *Mesembryanthemum nodiflorum* herbland and scattered grasses.

18. elsOW5: *Eucalyptus loxophleba* subsp. *supralaevis* open woodland, over *Ptilotus obovatus* and *Solanum lasiophyllum* shrubland, over mixed Chenopod low shrubland, over scattered seasonal herbs.

Eucalyptus Open Forest

19. elaOLW1: *Eucalyptus leptopoda* subsp. *arctata* open woodland, over *Acacia effusifolia* (*Acacia sibina*) open scrub, over *Eremophila forrestii* subsp. *forrestii*, *Eremophila forrestii* and *Aluta aspera* subsp. *hesperia* low shrubland.

Mulga Low Woodland

20. aiMLW1: *Acacia incurvaneura* ms low woodland, over *Grevillea obliquistigma* subsp. *Forrestii* subsp. *forrestii* and *Eremophila latrobei* subsp. *latrobei* low shrubland.

Mulga Open Low Woodland

21. aiMOLW1: *Acacia incurvaneura* ms open low woodland, over *Calycopeplus paucifolius* and *Thryptomene decussata* tall open shrubland, over *Aluta aspera* subsp. *hesperia* open heath.

The following vegetation communities mapped along the southern boundary of the Mattiske survey are likely to extend into the unmapped portion (Mattiske, 2009b):

Callitris Woodlands

22. C1: Low Open Woodland of *Callitris columellaris* over *Acacia ramulosa* var. *ramulosa* and *Melaleuca lateriflora* subsp. *acutifolia* with *Acacia sibina* and *Grevillea obliquistigma* subsp. *obliquistigma* over *Hibbertia arcuata*, *Eremophila clarkei* and *Aluta aspera* subsp. *hesperia* over mixed low shrubs and annuals on deep orange brown sandy loams on flats.

Acacia Shrublands

23. A1: Tall Open Scrub of *Acacia ramulosa* var. *ramulosa* with *Acacia sibina* over *Eremophila forrestii* and mixed low shrubs over *Cheilanthes adiantoides* and annuals on orange sandy loams on lower slopes and flats.

24. A2: Tall Shrubland of *Acacia ramulosa* var. *ramulosa* with *Acacia ayersiana* and *Acacia sibina* over *Eremophila forrestii* and *Philotheca deserti* subsp. *deserti* with *Aluta aspera* subsp. *hesperia* over *Cheilanthes adiantoides*, *Monachather paradoxus*, low shrubs and annuals on orange brown sandy loam on flats.

25. A3: Tall Shrubland of *Acacia ramulosa* var. *ramulosa* with *Hakea recurva* subsp. *recurva*, *Acacia sibina*, *Acacia ayersiana* and *Acacia tetragonophylla* over mixed low shrubs and annuals on orange brown sandy loam on flats.

Clearing Description

Minjar Gold Project. Minjar Gold Pty Ltd (Minjar) proposes to clear 57.32 hectares of native vegetation within a boundary of approximately 155 hectares (GIS Database) for the purpose of mineral production and associated activities. The project area is located within the Shire of Yalgoo and approximately 55 kilometres south, south east of Yalgoo (GIS Database).

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 application area consists of two separate areas, comprising Austin and Riley (approximately 12 kilometres apart) and a proposed haul road associated with each. The purpose of the application is to develop the Austin and Riley pits and associated infrastructure. These pits will form part of the larger Minjar Gold Project which involves development of new and expansion of previous mining operations. The project will comprise a chain of pits along a 50 kilometre strike line (Minjar, 2013). Ore will be hauled from the pits to the existing processing facility. According to Minjar (2013), there is approximately 276.86 hectares of existing disturbance over the larger Minjar Gold Project. Minjar anticipate a further 374.02 hectares of clearing will be required (Minjar, 2013).

Development of the Austin and Riley prospects will involve clearing for pit development, waste rock dumps, temporary run of mine (ROM) pads, haul and access roads and abandonment bunds (Minjar, 2013). The proposed haul roads will link Austin and Riley to an existing haul road. The proposed haul roads follow the route of established tracks and construction will include widening of the present tracks (APM, 2012b; APM, 2013). The proposed clearing is for approximately 26 hectares at Austin and approximately 31.32 hectares at Riley. Clearing will be by mechanical means. Vegetation and topsoil will be stockpiled for use in rehabilitation and will be utilised progressively as required (Minjar, 2013).

Vegetation condition rating was determined by Mattiske (2009a, 2009b) and APM (2012b) using various vegetation condition scales. These ratings were converted to the Keighery (1994) scale.

The flora and vegetation survey undertaken by APM in 2012 (Riley and haul road for Austin) was conducted at the end of below average winter rainfall in 2012, hence conditions for field survey were not ideal and the below average rainfall appeared to affect the emergence of many spring herbs (APM, 2012b). The rainfall also appeared to have been patchy across the tenements as the diversity and abundance of spring herbs differed greatly between habitats of similar soil, land form and vegetation composition (APM, 2012b). However, many plants were in flower during the field survey (APM, 2012b). The surveys conducted over the Austin prospect (Mattiske, 2009a and APM, 2011) were considered adequate as they were undertaken following heavy or above average rainfall.

3. Assessment of application against clearing principles

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

Comments **Proposal may be at variance to this Principle**

Vegetation communities at Austin comprised thickets, scrubs, woodlands and shrublands (APM, 2012b). The majority of the vegetation was found to be in a 'good' condition and has been fragmented by roads or exploration drilling gridlines. Evidence of grazing by goats and rabbits was also observed (APM, 2012b). Approximately 0.3 hectares has been previously cleared (Minjar, 2013). Vegetation communities at Riley comprised thickets, scrubs, woodlands and forest (APM, 2012b). The majority of the vegetation was found to be in a 'good' condition and has been impacted from grazing by goats and rabbits (APM, 2012b). Approximately 4.16 hectares has been previously cleared (Minjar, 2013).

No Threatened Ecological Communities have been recorded within the application area (GIS Database; Minjar, 2013). The application area is located within the Priority 1 Minjar vegetation complexes (banded ironstone formation (BIF)) Priority Ecological Community (PEC). This PEC consists of vegetation units associated with BIF and BIF outwash geology of the BIF range and often includes endemic vegetation units (DEC, 2012). According to APM (2012b), no known PECs or BIF outcropping were detected during the flora and vegetation surveys of Riley and the Austin haul road. For the Austin prospect, Mattiske (2009a) states that although vegetation communities A18 and S8 contained ironstone pebbles, this PEC is unlikely to occur within this survey area, as the PEC occurs on banded ironstone hills and areas of ironstone outcropping.

A total of 85 flora species and taxa from 30 families and 51 genera were recorded during the survey of the Austin prospect (Mattiske, 2009a). No weed species were recorded. A total of 104 flora species and taxa from 34 families and 69 genera were recorded during the survey of the Austin haul road (31 hectare survey area) (APM, 2012b). Ten introduced species were recorded. A total of 240 flora species and taxa from 44 families and 124 genera were recorded over the Riley prospect and northern and southern haul road options (225 hectare survey area) (APM, 2012b). Eighteen introduced species were recorded. According to Minjar (2013), previous surveys of the Minjar tenements have identified 27 invasive weed species in low numbers. Potential impacts from weeds as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

No Threatened Flora have been recorded within the application area (GIS Database; Minjar, 2013). Seven Priority Flora species were recorded within the application area during the most recent Threatened and Priority Flora surveys (APM, 2011; APM 2012b). These were detected within the Austin prospect (three species) and the Riley prospect and haul road (seven species). These Priority Flora species include the following:

- *Drummondita fulva* (Priority 3) – Population estimated at 400+ plants at Austin and 1,613 plants at Riley (Minjar, 2013). Found to comprise a patchy but major part of the understory in vegetation communities of rocky rises and skeletal soils of low slopes (Minjar, 2013). Appears to be locally abundant, particularly on rocky rises, most often in conjunction with *Micromyrtus trudgenii* (Priority 3). Also recorded at the Monaco, Bugeye, Keronima, Windinne Well and Blackdog areas (APM, 2012b). Proposed clearing could impact 200+ plants at

Austin and 1,258 plants at Riley (Minjar, 2013).

- *Grevillea globosa* (Priority 3) - Population estimated at 32 plants at Austin and 19 plants at Riley (APM, 2011; Minjar, 2013). Tended to occur on flat plains in a range of clay and loam soil types at Riley (APM, 2012b). Has been recorded in multiple locations from scattered isolated small groups to a major understory component (Minjar, 2013). Also recorded at the Eastern Creek, Monaco and Silverstone areas (APM, 2012b). Proposed clearing could impact 9 plants at Austin and 13 plants at Riley (Minjar, 2013).

- *Micromyrtus trudgenii* (Priority 3) - Population estimated at 110+ plants at Austin and 2,193 plants at Riley (Minjar, 2013). Recorded numerous times at numerous sites, commonly in conjunction with *Drummondita fulva* and often comprising a major community component, but restricted to the rocky rises common to the area (Minjar, 2013). Also recorded at the Monaco, Bugeye, Keronima, Windinne Well, Mugs Luck and Blackdog areas (APM, 2012b). Proposed clearing could impact 519 plants at Riley (Minjar, 2013).

- *Persoonia pentasticha* (Priority 3) - Population estimated at 93 plants at Riley (Minjar, 2013). Generally occurs as scattered individuals, and although occurring in low densities throughout the Minjar tenements, the species is widespread, occupying a number of soil types and microhabitats (Minjar, 2013). Also recorded at the Bugeye, Silverstone, Bobby McGee, Beryl West, Keronima, Promises, Monaco, main haul road, Mugs Luck and Blackdog areas (Minjar, 2013). Proposed clearing could impact 30 plants (Minjar, 2013).

- *Gunniopsis propinqua* (Priority 3) - Population estimated at 100 plants at Riley (Minjar, 2013). Recorded on ultramafic skeletal soil, within the MLOS2 vegetation community (Minjar, 2013). According to the Western Australian Herbarium (2013), this species has been recorded in the Golden Grove area from approximately four kilometres east of Austin. APM (2012b) notes that due to the ephemeral nature of this species it is probable that it occurs in other suitable habitats within the Yalgoo region. This population will be cleared for the proposed haul road.

- *Rhodanthe collina* (Priority 1) - Population estimated at 300 plants at Riley (Minjar, 2013). These were recorded at four locations, with two recorded outside the application area and two recorded inside the application area but outside the proposed disturbance footprint. This species has also been recorded during a flora and vegetation survey of the Highland Chief and Monaco prospects in spring 2003. It was also recorded at Mugs Luck during the APM 2012 survey. No impacts are expected (Minjar, 2013).

- *Calytrix uncinata* (Priority 3) - Population estimated at 20 plants at Riley (Minjar, 2013). This species was recorded at one location in the south west corner of the Riley prospect (APM, 2012b). No impacts are expected (Minjar, 2013).

The above Priority Flora species have been recorded during previous surveys of the Minjar and/or Karara areas. Although the application area contains some regionally restricted Priority Flora species, it is unlikely to represent significant habitat for these species and the proposed clearing is unlikely to have a significant impact on their conservation status. The Department of Parks and Wildlife (DPaW) (2013) recommends that impacts to Priority Flora are minimised where possible. Priority Flora species *Rhodanthe collina* has an elevated conservation status (i.e. Priority 1) compared to the other Priority Flora species recorded (i.e. Priority 3). Although no impacts are anticipated for this species a flora management condition will minimise the risk to this species.

Priority 3 Flora species *Grevillea scabrada*, *Austrostipa blackii* and *Psammomoya implexa* were also recorded at Riley, however, these species were detected on the proposed southern haul road option. A comparison of Priority Flora species impacts between the northern and southern haul road options revealed the northern option will have the lower overall impact. As a result the northern option was selected and the southern option excluded from the application area. Other Priority Flora species were also recorded at Austin by Mattiske (2009a) (*Calytrix uncinata* (Priority 3) and *Gunniopsis rubra* (Priority 3)), however, these records are outside the application area.

A desktop survey undertaken by APM as part of a fauna assessment over the application area and several other prospects identified 28 mammal, 132 bird, five amphibian and 71 reptile species that could potentially occur within the larger survey area (APM, 2012a). This indicates the application area is located within an area that has high faunal biodiversity. APM (2012a) identified seven habitat types within the application area and considered these to be well represented in the local area.

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

Methodology

APM (2011)
APM (2012a)
APM (2012b)
DEC (2012)
DPaW (2013)
Mattiske (2009a)
Minjar (2013)
Western Australian Herbarium (2013)
GIS Database:
- Threatened and Priority Flora
- 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 may be at variance to this Principle

A fauna assessment designed to meet a Level 1 survey was conducted by APM over the Austin, Blackdog, Bobby McGee, Bugeye, Camp, Highland Chief, Keronima, M1, Monaco, Mugs Luck, Riley, Silverstone, Trench and Windinne Well areas. The field surveys were undertaken over five periods including 7 to 18 November 2011, 29 August to 5 September 2012, 13 to 24 September 2012, 4 to 14 October 2012 and 26 October 2012 (APM, 2012a). Surveys were designed to assess the presence of Malleefowl (*Leipoa ocellata*) (Vulnerable; Schedule 1) and Western Spiny-tailed Skink (*Egernia stokesii badia*) (Vulnerable; Schedule 1) with opportunistic observations of other species recorded (APM, 2012a). The survey areas were traversed on foot by a zoologist for approximately one full day per site with transects covering the length of the survey areas and spaced 30 metres apart (APM, 2012a). All Malleefowl mounds and suitable Western Spiny-tailed Skink habitat were recorded. Where suitable Western Spiny-tailed Skink habitat was found the zoologist would examine the diameter and depths of the hollows or rock crevices and search for the presence of a latrine (APM, 2012a). Trapping for the skink was also conducted in several areas of suitable habitat including Bugeye, Mugs Luck, and Windinne Well in 2011 and Camp and Blackdog in 2012 (APM, 2012a).

The main habitat types identified by APM (2013) within the application area include:

- Shrubland on Loam Flats - tall open shrubland dominated by *Acacia ramulosa* over mixed low shrubs on loam flats.
- Shrubland on Rocky Loam Flats - an open shrubland over low scrub dominated by several *Acacia* species on loam flats with surface rocks and gravel. This habitat type was only identified at Austin.
- Shrubland on Sandy Loam Flats - tall open shrubland dominated by *Acacia ramulosa* over a mix of low shrubs on sandy loam flats and low slopes.
- Callitris and Allocasuarina Woodland - low open woodland of *Callitris columellaris* or *Allocasuarina acutivalvis* over low mixed shrubs on deep orange sandy loam flats. This habitat type was only identified on the Riley haul road.
- Chenopod Shrubland - Mixed chenopodae low shrubland over scattered seasonal herbs and grasses, with occasional emergent *Eucalyptus loxophleba* and *Acacia* species. This habitat type was only identified on the Riley haul road.
- Low Shrubland on Rocky Slopes and Hilltops - A low shrubland of predominantly *Acacia* and *Melaleuca* species on rocky slopes and hilltops with occasional shale and granite outcroppings. This habitat type was only identified at the Riley prospect.
- Lateritic Breakaway - *Acacia ramulosa* shrubs over *Ptilotus obovatus* open low shrubland, over very open seasonal herbland. A small area of this habitat type was identified at the Riley prospect.

According to APM (2012a), these fauna habitats are common features of eight of the nine land systems occurring in the project area and are considered well represented in the local area. The rocky hilltops and breakaway habitats are expected to support a few fauna species considered to be habitat specialists or dependent upon certain habitat for breeding. APM (2012a) notes this habitat is relatively rare within the prospects, which are mainly situated on the flat plains, but is more common throughout the local area. According to APM (2012a), the few areas of rocky hilltops that exist within the project area might support minor populations of these specialists, but these would be small compared to surrounding populations.

Opportunistic recordings made during the fauna survey identified a total of 85 bird, 22 reptile and 7 mammal (four native, three introduced) species (APM, 2012a). Seven conservation significant species were recorded within the survey area including the Malleefowl, Rainbow Bee-eater (*Merops ornatus*) (Marine; Migratory under EPBC Act; Schedule 3), Peregrine Falcon (*Falco peregrines*) (Schedule 4), Major Mitchell's Cockatoo (*Cacatua leadbeateri*) (Schedule 4), Australian Bustard (*Ardeotis australis*) (Priority 4), White-browed Babbler (potentially *Pomatostomus superciliosus ashbyi* which is listed as Priority 4) and Crested Bellbird (potentially *Oreoica gutturalis gutturalis* which is listed as Priority 4) (APM, 2012a).

The Malleefowl occurs in semi-arid and arid zones of temperate Australia, where it occupies shrublands and low woodlands that are dominated by mallee vegetation (DSEWPAC, 2013). According to Minjar (2013), Malleefowl habitat is widespread throughout the Minjar tenements. A total of 62 Malleefowl mounds were recorded within the Minjar Gold Project area. Two of the mounds were active, while 22 were classified as inactive (between 1-20 years old) and 38 as historic (20-100+ years old) (Minjar, 2013). The active mounds were recorded at Blackdog and north of the Monaco prospect. Several Malleefowl sightings were also made with a lone Malleefowl sighted at Riley and the remainder at Blackdog/Camp (APM, 2012a). Inactive mounds (1 to 20 years old) can be reused as they still retain structural integrity whereas historic mounds are considered severely weathered and unable to be reused due to loss of structural integrity (APM, 2012a). The Malleefowl mounds occurred throughout the tenements and did not appear to follow any specific landscape features (APM, 2012a).

Seven mounds were recorded at Austin (three inactive and four historic) with five occurring within the application area (APM, 2013). Twenty two mounds were recorded at Riley (11 inactive and 11 historic) with 13 occurring within the application area. Out of the ten project areas surveyed Riley had the highest density of mounds (0.08 mounds per hectare) and Austin the third highest (0.08 mounds per hectare) (APM, 2012a). The proposed clearing will impact on up to ten inactive mounds (two at Austin and eight at Riley) and up to 13 historic mounds (four at Austin and nine at Riley) (Minjar, 2013). Estimated impacts from the overall Minjar Gold Project include clearing of up to 12 inactive mounds and up to 18 historic mounds (Minjar, 2013). The

larger Minjar Gold Project was referred to the Department of Sustainability, Environment, Water, Population and Communities (DSEWPAC). A Referral Decision of 'not a controlled action if undertaken in a particular manner' was published on 3 April 2013. The manner in which the project must be undertaken is set out in the notification of referral decision document published on DSEWPAC's website. This relates to the Malleefowl and includes the Malleefowl mounds that will be cleared and those that will be retained (as described above). The decision document also states that for those mounds being retained construction activities must not be undertaken within the Malleefowl mound buffer zones (250 metres for active mounds and 50 metres for inactive mounds). Given Minjar is required to comply with the referral decision document and the presence of suitable habitat and mounds outside the application area, the proposed clearing is considered unlikely to have a significant impact on this species.

The Western Spiny-tailed Skink lives in small family groups and requires hollow trees/logs or rock crevices as habitat (APM, 2012a). Both hollow tree/log and rocky habitat was identified across the Minjar Gold Project area. Rocky habitat was located in the Austin, Windinne Well, M1, Bugeye, Riley and Highland Chief areas (APM, 2012a). The nature of the rock outcrops was variable, comprising slabs of rock in some areas and small scarps with wind and water erosion creating shallow cavities in other areas (APM, 2012a). However, many of the crevices were not sufficiently deep to accommodate the skink, although small pockets of suitable habitat were present along the hills (APM, 2012a). Within the application area, suitable rock outcrops or rock piles were identified at the Riley prospect and on the Austin haul road (APM, 2013). A search of high resolution aerial photography over an area of 1,539 hectares identified approximately four hectares and 17.5 hectares of suitable rocky habitat at Austin and Riley, respectively (APM, 2013). Of this, approximately 0.8 hectares or 3.7% occurs within the application area. One rocky outcrop (0.2 hectares) occurs on the Austin haul road and 0.6 hectares occurs in the Riley prospect (APM, 2013).

Eucalypt tree and branches occur across the project area, however, the quality of the habitat for the skink varied extensively from marginal to good habitat (APM, 2012a). A search of high resolution aerial photography over an area of 1,539 hectares identified approximately 10.8 hectares of suitable habitat at Riley (APM, 2013). Of this, approximately 1.9 hectares or 17.6% occurs within the application area and comprises Eucalyptus groves with suitable hollow logs (APM, 2013). Two small Eucalyptus groves occur on the Riley haul road (1.4 hectares) and two Eucalypt trees (0.5 hectares) occur at the Riley prospect. The two trees at the Riley prospect were located along a small drainage line and were considered to have little value due to the lack of connectivity with other suitable habitat (APM, 2013). The groves on the haul road are part of a band of Eucalypts fringing a drainage line, therefore, allowing dispersal of individuals to the north and south (APM, 2013). To minimise impacts to these two groves, Minjar proposes to move any fallen hollow timber to the side of the construction corridor (APM, 2013).

No Western Spiny-tailed Skinks were captured during the trapping program. Secondary evidence of the skink was found at Moonscape (Exploration Licence 59/1023) under a rock overhang and an old latrine was found next to a hollow Eucalypt in the Camp prospect (APM, 2012a; APM, 2013). A motion detection camera placed near this latrine did not record any activity. No skinks or secondary evidence of skinks were observed during transect searches of the application area (APM, 2012a). Given the absence of Western Spiny-tailed Skinks within the application area and the small area of potential habitat, it is unlikely the application area comprises significant habitat for this species.

A search of the online website Naturemap shows six records for the Shield-backed Trapdoor Spider (*Idiosoma nigrum*) (Schedule 1) within 15 kilometres of the approximate centre point between Austin and Riley (DEC, 2013). Nearby surveys from Weld Range, Karara and Shine projects have recorded the spider on upper to lower slopes of ranges and on plains along established drainage lines (APM, 2012a). The closest of these projects is the Shine Iron Ore project which is located in close proximity to the application area between Austin and Riley. This project was assessed by the Environmental Protection Authority (EPA) which considered the clearing of up to 200 hectares as unlikely to significantly impact the species or its regional population (EPA, 2013). A review of topographical contours also shows other ranges or hills in the area which are likely to provide potential habitat and, therefore, support the Shield-backed Trapdoor Spider (GIS Database).

Within the project area the Shield-backed Trapdoor Spider is expected to occur on the slopes of minor ridges, being virtually absent from the flat plains due to an overall lack of established drainage lines (APM, 2012a). By considering habitat preferences found in previous surveys and vegetation communities described for the larger project area APM have identified a total of 102.8 hectares of potential habitat at the Windinne Well, Riley, Bugeye, Silverstone and Mugs Luck areas (APM, 2012a). At Riley approximately 18 hectares of potential habitat was identified on slopes (APM, 2012a). However, the actual amount of suitable habitat is expected to be lower due to the possibility of specific microhabitat requirements of the spider not being met in some areas (APM, 2012a). APM (2013) conducted an analysis of high resolution photography to further refine the amount of potential habitat at Riley. Approximately 897 hectares of aerial photography was searched. No potential habitat was identified on the Riley haul road (APM, 2013). Approximately 4.1 hectares of potential habitat was identified within and surrounding the Riley prospect. Approximately 0.6 hectares or 15% of this occurred within the application area and was located on a south facing breakaway and drainage line association (APM, 2013).

While the object of the fauna survey was to record Malleefowl and Western Spiny-tailed Skink habitat, an opportunistic search for trapdoor spider burrows was also conducted (APM, 2012a). No spider burrows were observed within the application area (APM, 2013). Of the project areas surveyed only two trapdoor spider burrows were identified at Silverstone, however, these were considered unlikely to be the Shield-backed Trapdoor Spider. According to APM (2012a), this indicates a low presence of spiders within the project areas.

Based on the above, potential habitat within the application area is likely to represent a small amount present within the local area. Given this and the lack of trapdoor spider burrows recorded it is unlikely the application area represents significant habitat for this species.

APM (2012a) considered the Rainbow Bee-eater, Major Mitchell's Cockatoo, Australian Bustard, White-browed Babbler and Crested Bellbird to be either occasional visitors or using the area solely as foraging habitat (APM, 2012a). A pair of Peregrine Falcons was recorded using the existing pits in the Bugeye, Windinne Well and Silverstone areas as roosting and breeding habitat. There are no existing pits within the application area. Several other conservation significant species may utilise the application area, however, based on factors such as species mobility, core or preferred habitat requirements and the presence of similar habitat in surrounding areas, these species are unlikely to be significantly impacted by the proposed clearing.

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

Methodology APM (2012a)
APM (2013)
DEC (2013)
DSEWPAC (2013)
EPA (2013)
Minjar (2013)
GIS Database:
- Threatened and Priority Flora
- Topographic Contours, Statewide

(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 records of Threatened Flora within the application area (GIS Database). According to Minjar (2013), no Threatened Flora species have been recorded during flora and vegetation surveys of the application area.

The Threatened Flora species, *Styliidium scintillans*, has been recorded in the surrounding area, with the closest record located approximately 4 kilometres south of the application area (GIS Database). This species is confined to the upper slopes and summits of low rises and breakaways composed of highly weathered granitic basement rock with weathered or colluvial ironstone rock and kaolinitic residue (Wege, 2012). According to APM (2012b), previous surveys have recorded this species once on 12 September 2008 adjacent to the Keronima prospect (over 15 kilometres south of Riley).

According to APM (2013), all survey areas underwent targeted searches for Threatened Flora and Priority Flora. The survey areas were roughly divided into transects 15 metres apart and traversed by botanists. An intense targeted search (transects five metres apart) was also conducted in the eastern section of the Keronima tenement where the 2008 record and known *Styliidium scintillans* habitat is located (APM, 2013). Apart from Keronima, potential habitat and sympatric species *Micromyrtus acuta* were not found to be present by the survey team (APM, 2013). According to APM (2013), neither Austin or Riley contain vegetation communities that represent suitable habitat for *Styliidium scintillans*. This species was not recorded by APM during targeted Threatened and Priority Flora surveys (APM, 2011; APM, 2012b). It is therefore unlikely that the vegetation in the application area is necessary for the continued existence of Threatened Flora.

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

Methodology APM (2011)
APM (2012b)
Minjar (2013)
Wege (2012)
GIS Database:
- 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

According to available databases, there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest known TEC is approximately 65 kilometres south west of the application area (GIS Database).

No TECs have been recorded within the application area (Minjar, 2013).

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

Methodology Minjar (2013)

GIS Database:
- Threatened Ecological Sites Buffered

(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 Yalgoo Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 97.4% of the pre-European vegetation remains (see table) (GIS Database, Government of Western Australia, 2013).

The vegetation of the application area has been mapped as the following Beard vegetation associations (GIS Database):

- 202: Shrublands; mulga and *Acacia quadrimarginea* scrub;
- 352: Medium woodland; York gum; and
- 420: Shrublands; bowgada and jam scrub.

With the exception of Beard vegetation association 352, over 95% of these vegetation associations remain at a state and bioregional level (Government of Western Australia, 2013). Only 19.84% of Beard vegetation association 352 remains at a state level, however, only approximately 0.3 hectares occurs within the application area and approximately 99.83% of this association remains at a bioregional level (Government of Western Australia, 2013). Therefore, the area proposed to be cleared does not represent a significant remnant of native vegetation within an area that has been extensively cleared. A review of aerial imagery also shows that vegetation within the application area is not a remnant within the local area (GIS Database).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Extent in DEC Managed Lands %* (and post clearing %)
IBRA bioregion – Yalgoo	5,057,326	4,924,606	~97.38	Least Concern	~31.69 (~32.39)
IBRA Subregion - Talling	3,498,943	3,387,859	~96.83	Least Concern	~24.22 (~24.98)
Local Government – Yalgoo	2,794,952	2,733,274	~97.79	Least Concern	~22.51 (~23.01)
Beard vegetation associations - State					
202	448,529	448,344	~99.96	Least Concern	~21.97 (~21.98)
352	724,273	143,678	~19.84	Vulnerable	~1.76 (~8.66)
420	859,632	830,218	~96.58	Least Concern	~14.17 (~14.67)
Beard vegetation associations - Bioregion					
202	45,096	45,096	~99.81	Least Concern	~40.08 (~40.16)
352	14,281	14,255	~99.82	Least Concern	~1.92 (~1.92)
420	621,396	620,265	~99.82	Least Concern	~16.47 (~16.50)
Beard vegetation associations - Subregion					
202	45,096	45,012	~99.81	Least Concern	~40.08 (~40.16)
352	14,281	14,255	~99.82	Least Concern	~1.92 (~1.92)
420	615,816	614,686	~99.82	Least Concern	~16.62 (~16.65)

* Government of Western Australia (2013)

** 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 (2013)
GIS Database:
- Badja 1.4m Orthomosaic - Landgate 2003
- IBRA WA (Regions – Sub Regions)
- Pre-European Vegetation
- Thundelarra 1.4m Orthomosaic - Landgate 2003

(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 six minor, non-perennial watercourses within the application area (GIS Database). These are located at Riley and predominantly appear as short isolated watercourses that drain into the surrounding landscape. Available databases show these are numerous in the surrounding area (GIS Database). According to Minjar

(2013), watercourses in the area are scarce with surface water flow predominantly occurring as sheet flow.

One vegetation community was identified as growing in association with a drainage line (elsOW5) (Minjar, 2013). This community was mapped at one location on the Riley haul road and two locations outside the application area on the southern haul road option (APM, 2012b). Approximately 0.8 hectares occurs within the application area and approximately 4.95 hectares occurs outside the application area (APM, 2013). The proposed clearing will impact approximately 0.11 hectares or 1.9% of this vegetation association (APM, 2013). Potential impacts to this and other watercourses may be minimised by the implementation of a watercourse management condition.

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

Methodology APM (2012b)
APM (2013)
Minjar (2013)
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

The application area has been mapped as occurring on the following land systems (GIS Database) (Payne et al., 1998):

- The Illaara land system comprises gravelly plains supporting mulga-casuarina shrublands and is generally not susceptible to soil erosion.
- The Moriarty land system comprises low greenstone rises and stony plains supporting halophytic and acacia shrublands with patchy eucalypt overstoreys. Slopes of low rises without protective stone mantles, alluvial plains and narrow drainage tracts are moderately susceptible to water erosion, particularly if perennial shrub cover is substantially reduced or the soil surface is disturbed.
- The Mulline land system comprises greenstone hills supporting acacia shrublands and eucalypt woodlands. Narrow drainage tracts and alluvial plains are moderately susceptible to water erosion, particularly where perennial shrub cover is substantially reduced or the soil surface is disturbed.
- The Tallering land system comprises prominent ridges and hills of banded ironstone, dolerite and sedimentary rocks supporting bowgada and other acacia shrublands. Stone mantles in this system provide effective protection against soil erosion; however, disturbance or removal of stone mantles may initiate erosion.
- The Tealtoo land system comprises level to gently undulating loamy plains with fine ironstone lag gravel supporting dense acacia shrublands and is not generally prone to soil erosion.
- The Watson land system comprises hills, rises and gravelly plains on sedimentary rocks supporting bowgada shrublands with non-halophytic undershrubs. Stone and gravel surface mantles provide effective protection against erosion, however, disturbance or removal of mantles may initiate erosion.

Based on the above there is potential for erosion to occur, particularly where mantles are disturbed or removed. Potential impacts from erosion as a result of the proposed clearing may be minimised by the implementation of a soil erosion management condition.

According to Minjar (2013), groundwater occurs at approximately 20 metres and 69 metres below ground level at Austin and Riley, respectively. Additionally, the average annual evaporation rate is over 11 times the average annual rainfall, so recharge to the groundwater would be expected to be minimal (BoM, 2013; GIS Database). Based on this and the depth to groundwater, there is a low likelihood of raised saline water tables occurring as a result of the proposed clearing.

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

Methodology BoM (2013)
Minjar (2013)
Payne et al. (1998)
GIS Database:
- Evaporation Isopleths
- Rangeland Land System Mapping

(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

According to available databases, the Riley portion of the application area is located within a conservation area (GIS Database). This conservation area is the former Warriedar pastoral lease which has been purchased by the Department of Parks and Wildlife (DPaW) (GIS Database). The proposed clearing will involve approximately 31.32 hectares at Riley.

Advice from DPaW focused on Threatened and Priority Flora, the Malleefowl, Western Spiny-tailed Skink and Shield-backed Trapdoor Spider and recommended impacts to these values are avoided or minimised (DPaW, 2013). An assessment of these values is provided in Principles (a), (b) and (c). Based on the assessment of these values, it is unlikely the proposed clearing will have a significant impact on the former Warriedar pastoral lease. However, the proposed clearing may potentially increase the spread and occurrence of weeds within this conservation area. Potential impacts to this conservation area may be minimised by the implementation of a flora management condition, watercourse management condition, soil erosion management condition and weed management condition.

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

Methodology DPaW (2013)
GIS Database:
- DEC 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

According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). There are no permanent waterbodies or watercourses within the application area, however, there are six minor, non-perennial watercourses within the application area (GIS Database). According to Minjar (2013), watercourses in the area are scarce with surface water flow predominantly occurring as sheet flow.

The annual average rainfall for Yalgoo is 259.8 millimetres and the average annual evaporation rate for the application area is approximately 3,000 millimetres (BoM, 2013; GIS Database). Based on this, surface water is likely to evaporate quickly with surface sheet flow and higher sediment levels generally occurring during larger rainfall events. Therefore, during normal rainfall events, the proposed clearing would not likely lead to an increase in sedimentation of watercourses within the application area.

According to available databases, groundwater salinity within the application area is between 1,000 and 7,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). This is considered brackish to saline. The proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

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

Methodology BoM (2013)
Minjar (2013)
GIS Database:
- Evaporation Isopleths
- Groundwater Salinity, Statewide
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)

(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 application area is located within the YarraMonger catchment area (GIS Database). Given the size of the area to be cleared (57.32 hectares) in relation to the size of the catchment area (4,182,476 hectares) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a local or catchment scale.

With an average annual rainfall of 259.8 millimetres and an average annual evaporation rate of 3,000 millimetres there is likely to be little surface flow during normal seasonal rains (BoM, 2013; GIS Database). Whilst large rainfall events may result in flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding.

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

Methodology BoM (2013)
GIS Database:
- Evaporation Isopleths
- Hydrographic Catchments - Catchments

Planning instrument, Native Title, Previous EPA decision or other matter.

Comments

There are two native title claims over the area under application: WC1996/098 and WC1997/072 (GIS Database). These claims have been registered with the Native Title Tribunal 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*.

According to available databases, there are several registered Aboriginal Sites of Significance within the application area (GIS Database). 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.

The larger Minjar Gold Project was referred to the Environmental Protection Authority (EPA) and the Department of Sustainability, Environment, Water, Population and Communities (DSEWPAC). DSEWPAC published a referral decision of 'not a controlled action if undertaken in a particular manner' on 3 April 2013. The manner in which the project must be undertaken is set out in the notification of referral decision document published on DSEWPAC's website. It is the proponent's responsibility to comply with the notification of referral decision document.

The EPA published a decision of 'Not Assessed – Public Advice Given' on 15 April 2013. Public advice was given on terrestrial fauna, flora and vegetation and rehabilitation and closure factors. The terrestrial fauna and flora and vegetation factors were considered during the assessment of the clearing permit application. Rehabilitation and closure are considered under the *Mining Act 1978* applications.

It is the proponent's responsibility to liaise with the Department of Environment Regulation (formerly the Department of Environment and Conservation) and the Department of Water, 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 clearing permit application was advertised on 22 July 2013 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

Methodology GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims – Registered with the NNTT

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5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), Western Australia
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DoE	Department of Environment (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
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
RIWI Act	Rights in Water and Irrigation Act 1914, Western Australia
s.17	Section 17 of the Environment Protection Act 1986, Western Australia
TEC	Threatened Ecological Community

Definitions:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1** **Priority One - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P2** **Priority Two - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P3** **Priority Three - Poorly Known taxa:** taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
- P4** **Priority Four – Rare taxa:** taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
- R** **Declared Rare Flora – Extant taxa (= Threatened Flora = Endangered + Vulnerable):** taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
- X** **Declared Rare Flora - Presumed Extinct taxa:** taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

- Schedule 1** **Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.

- Schedule 2** **Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3** **Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4** **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). *Priority Codes for Fauna*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1** **Priority One: Taxa with few, poorly known populations on threatened lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2** **Priority Two: Taxa with few, poorly known populations on conservation lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P3** **Priority Three: Taxa with several, poorly known populations, some on conservation lands:** Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4** **Priority Four: Taxa in need of monitoring:** Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
- P5** **Priority Five: Taxa in need of monitoring:** Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (*Environment Protection and Biodiversity Conservation Act 1999*)

- EX** **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.
- EX(W)** **Extinct in the wild:** A native species which:
 (a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
 (b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- CR** **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- EN** **Endangered:** A native species which:
 (a) is not critically endangered; and
 (b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- VU** **Vulnerable:** A native species which:
 (a) is not critically endangered or endangered; and
 (b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- CD** **Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.