Government of Western Australia
Department of Mines and Petroleum

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3565/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Crescent Gold Limited**

1.3. Property details

Property: Miscellaneous Licence 38/164
Local Government Area: Laverton
Colloquial name: Fish to Burtville Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
23		Mechanical Removal	Road construction and maintenance

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 at a scale of 1:250,000 for the whole of Western Australia. One Beard Vegetation Association is located within the application area (Shepherd, 2007):

- Beard Vegetation Association 18: low woodland; mulga (*Acacia aneura*).

Goldfields Landcare Services conducted a flora and vegetation survey of the application area in August and September 2009. Seven vegetation units were identified within the survey area (Goldfield Landcare Services, 2009):

Drainage Tract Mulga Shrublands (DRMS)
Sparse mulga scrub (10 – 30% Projected Foliage Cover (PFC) >2 metres) with *Acacia craspedocarpa* and *Eremophila oldfieldii* subsp. *angustifolia* over mid dense heath (30% - 70% PFC 1 – 2 metres) of *Acacia tetragonophylla*, *Senna* spp., *Eremophila scoparia* and *Scaevola spinescens* over very sparse open dwarf scrub (2 – 10% PFC <1 metre) of *Eremophila glutinosa*, *Maireana* spp., *Ptilotus obovatus* and *Sclerolaena bicornis* on orange sandy loam.

Degraded Drainage Tract Mulga Shrublands (Degraded DRMS)
Scattered tall shrubs of *Acacia aneura* and *Acacia craspedocarpa* (<2% PFC >2 metres) over scattered shrubs (<2% PFC 1 – 2 metres) of *Eremophila scoparia* and *Senna artemisioides* over very sparse open dwarf scrub (2 – 10% PFC <1 metre) of *Ptilotus obovatus*, *Maireana* spp. *Atriplex* spp., *Frankenia interioris* var. *interioris* and *Sclerolaena* spp. on pink sandy soil.

Frankenia low shrublands (FRAN)
Sparse low scrub (10 – 30% PFC 1 – 2 metres)of *Cratystylus subspinescens* over very sparse open dwarf scrub (2 – 10% PFC <1 metre) of *Maireana pyramidata*, *Maireana glomerata*, *Atriplex quinii* and *Frankenia interioris* var. *interioris* on pink sandy loam covered in quartz pebbles and cobbles.

Granite Hill Mixed Shrublands (GRHS)
Mid dense thicket (30 – 70% PFC >2 metres) of *Acacia stowardii*, *Acacia aneura* var. *major*, *Acacia ramulosa* var. *ramulosa* and *Eremophila oldfieldii* subsp. *angustifolia* over sparse low scrub(10 – 30% PFC 1 – 2 metres) of *Eremophila scoparia*, *Dodonaea rigida*, *Scaevola spinescens* and *Senna* spp. over mid dense low heath (30 – 70% PFC <1 metre) of *Ptilotus obovatus*, *Maireana georgei* and *Senna* spp. on a mix of granite, ironstone and quartz rocks.

Sandplain Mulga – Spinifex Shrublands (SAMU)
Mid dense mulga thicket (30 – 70% PFC >2 metres) with occasional emergent *Eucalytpus youngii* over mid dense heath (30 – 70% PFC 1 – 2 metres) of *Acacia aneura*, *Acacia craspedocarpa*, *Eremophila latrobei* subsp. *filiformis* and *Eremophila forrestii* subsp. *forestii* over mid dense hummock grassland of *Triodia basedowii* on orange sand.

Stony Bluebush Mixed Shrublands (SBMS)
Scattered shrubs (<2% PFC 1 – 2 metres) of *Maireana sedifolia*, *Maireana pyramidata* and *Senna artemisioides* subsp. x *sturtii* with occasional *Eremophila oldfieldii* subsp. *angustifolia* over sparse dwarf scrub (10 – 30 % PFC <1 metre) of *Frankenia interioris* var. *interioris* and *Maireana georgei* on sandy loam covered in quartz rubble.

Stony Ironstone Mulga Shrublands (SIMS)

Sparse mulga scrub (10 – 30% PFC >2 metres) with *Acacia craspedocarpa* and *Acacia ramulosa* over sparse low scrub (10 – 30% PFC 1 – 2 metres) of *Acacia tetragonophylla*, *Scaevola spinescens*, *Eremophila latrobei* subsp. *latrobei*, *Eremophila margarethae* and *Sida calyxhymenia* over very sparse dwarf scrub (2 – 10% PFC <1 metre) of *Eremophila forrestii* subsp. *forrestii*, *Ptilotus obovatus* and *Maireana georgei* on orange loam covered with ironstone pebbles and quartz pebbles and cobbles.

Clearing Description

Crescent Gold (2010) proposes to clear up to 23 hectares of native vegetation, within a larger area totalling approximately 141 hectares. The application area is located approximately 35 kilometres south-east of Laverton (GIS Database).

The purpose of the proposed clearing is for the construction and maintenance of part of the proposed Fish to Burtville haul road (Crescent Gold, 2010). This section of haul road will be approximately 7.1kilometres long by 14 metres wide (Crescent Gold, 2010). Vegetation will be cleared by bulldozer or other heavy plant material and vegetation and topsoil will be stockpiled for rehabilitation purposes (Crescent Gold, 2010).

Vegetation Condition

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).

To

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

Comment

The vegetation condition rating is derived from information provided by Goldfields Landcare Services (2009). Crescent Gold (2010) reports that the vegetation has been impacted by pastoral activity, the proximity of the application area to the historical Burtville town with its associated human and mining activity, road borrow pits and old mining operations. Furthermore, fire history has played an important part in shaping the vegetation patterns, particularly on the spinifex dominated sandplains (Crescent Gold, 2010).

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 application area is located within the Eastern Murchison subregion of the Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregion and the Shield subregion of the Great Victoria Desert IBRA bioregion (GIS Database).

The Eastern Murchison subregion is described by CALM (2002) as being rich and diverse in both its flora and fauna. CALM (2002) reports that most species are wide ranging and usually occur in at least one, and often several, adjoining subregions.

CALM (2002) reports that the Shield subregion contains yellow sandplain communities with very diverse mammalian and reptile fauna and distinctive plant communities. Threats to these communities are in the form of mining, extensive summer wildfires and feral predators (CALM, 2002). In addition, CALM (2002) reports that hummock grasslands, open low tree steppe (mulga over *Triodia scariosa*) are confined entirely to this subregion.

Goldfields Landcare Services conducted a flora and vegetation survey of the application area in August to September 2009. A total of 139 plant taxa representing 34 families and 63 genera were recorded within a 142 hectare survey area (Goldfields Landcare Service, 2009). Goldfields Landcare Services (2009) reports the following families as representing the majority of the flora; *Chenopodiaceae* (27), *Mimosaceae* (13) and *Myoporaceae* (13). Goldfields Landcare Services (2009) has concluded that these results represent fairly typical flora diversity for this region.

One weed species has been reported as occurring within the application area; *Portulaca oleracea* (Goldfields Landcare Services, 2009). The presence of introduced weed species lowers the biodiversity value of the proposed clearing area. Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. The risk of spreading weed species can be mitigated by imposing a condition for the purpose of weed management.

MBS Environmental conducted a fauna survey of an area that included Miscellaneous Licence 38/164 in September 2009. This survey identified 39 bird species, six native mammal species and 11 reptile species within the search area, however, 177 bird species, 36 native and seven introduced mammal species, 87 reptile species and nine frog species have the potential to occur within the survey area based on previous surveys and Western Australian Museum collections of fauna species (MBS Environmental, 2009). It is expected that more reptile and bird species would frequent the search area than were recorded during the fauna survey. MBS Environmental (2009) reports that the small number of reptiles observed during the survey may be attributed to the cool weather conditions experienced during the mornings and nights of the fauna survey.

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

Methodology CALM (2002)
Goldfields Landcare Services (2009)
MBS Environmental (2009)
GIS Database
- Interim Biogeographic Regionalisation of Australia

(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

MBS Environmental conducted a fauna survey of the proposed Fish to Burtville Road in 2009. This survey consisted of a desktop analysis of the following sources to identify fauna species that could potentially occur within the search area (MBS Environmental, 2009):

- Previous fauna surveys that have been conducted in the region;
- A review of the Department of Environment and Conservation's (DEC's) online database (NatureMap);
- DEC's Threatened and Priority species database; and
- The Commonwealth Department of Environment, Water, Heritage and the Arts (DEWHA) online database to identify fauna species protected under the Environment Protection and Biodiversity Conservation Act, 1999 that could potentially occur within the area.

In addition a reconnaissance site visit was conducted from 2 to 10 September 2009. During this visit sites were traversed on foot and by vehicle. MBS Environmental (2009) reports that direct observation of fauna encountered, as well as indirect indications of the presence of fauna such as tracks and scats were used to compile a list of vertebrate species occurring in the area. Photographs were taken of the fauna habitats (MBS Environmental, 2009). The fauna habitats that occur within the application area are listed below:

Mulga Wanderie Grassy Shrubland (MUWA)
Acacia aneura canopy (eight to ten metres) over mixed shrubs: *Acacia tetragonophylla* and *Acacia acuminata*, *Ptilotus*, *Sida* and *Eremophila* spp. over orangey loam with fine pebbles. Western Botanical (2007) as cited in MBS Environmental (2009) described the lower stratum of this habitat as being dominated by small grasses. Grasses were noticeably absent during the fauna survey. This is likely due to grazing by camels and European rabbits. Observations included fresh European rabbit middens and fan leaf spider (*Aganippe* sp.) nests. Bird sightings included chestnut-rumped thornbill and inland thornbill.

Sandplain Mulga Spinifex Shrubland (SAMU)
Acacia aneura canopy (> five metres) and occasional mallee (*Eucalyptus youngiana*) over *Acacia* and *Eremophila* spp. shrubs over moribund spinifex on sandy orange loam. Abundant coarse woody debris. Bird sightings included crested bellbird and black-faced cuckooshrike.

Frankenia Shrubland (FRAN)
Frankenia, *Maireana* and *Senna* spp. on hard capped orange sandy loam with minimal pebbles. Bird sightings included rufous whistler and spiny-cheeked honeyeater.

Stony Ironstone Mulga Shrubland (SIMS)
Western Botanical (2007) as cited in MBS Environmental (2009) described two vegetation communities: Stony Ironstone Mulga Shrubland and Stony Plain Mulga Shrubland. With respect to fauna habitats, these two communities represent a single habitat and have been combined. *Acacia aneura* canopy (> five metres) over sparse mixed shrub layer including mixed *Acacia*, *Santalanum*, *Scaevola* and *Eremophila* spp. stony quartz and ironstone open areas on red clay loam soils.

Stony Bluebush Mixed Shrubland (SBMS)
Canopy mostly absent with some *Acacia aneura* (< five metres) although very spread out. Low shrubs including *Atriplex*, *Maireana*, *Acacia* and *Ptilotus* spp. over stony hard orangey brown clay. This area was extensively disturbed. Observations included splendid fairy-wren.

Drainage Mulga (Drainage Tract Mulga and Open Drainage Line)
Open *Acacia aneura* canopy (> five metres) with occasional *Brachychiton gregorii* over highly variable shrub layer including mixed *Acacia*, *Ptilotus* and *Sida* spp. and some grasses. Coarse woody debris and leaf litter was abundant in densely vegetated areas and almost absent in degraded drainages. Where there was a litter layer, termites where very active. Some drainage areas in the survey area have been used as a source of wood. Observations included short-beaked echidna (*Tachyglossus aculeatus*) diggings, hopping mouse tracks (*Notomys* sp.) and *Varanus* sp. burrows. Bird sightings included singing honeyeater. Reptile sightings included *Gehyra variegata*, *Heteronotia binoei* and *Lerista* sp.

Granite Hill Mixed Shrublands (GRHS)
Diverse low shrublayer including *Acacia quadrimarginea*, *Dodonaea*, *Cassia* and *Eremophila* spp. over tufted perennial grasses, *Isotoma petrea* in rock crevices on shallow, gravelly granitic soils. Typically occurs near granite outcrops (tors and domes). No fauna observations or sightings were recorded in this habitat.

MBS Environmental reports that densely vegetated habitats and habitats supporting hummock grasses

contained the most abundant fauna. MBS Environmental (2009) reports that some of the habitats listed above may be suitable for conservation significant fauna, although there were no conservation significant species recorded during the survey. The proposed clearing may cause fragmentation of fauna habitat, particularly in more densely vegetated areas. Given that the application area has been disturbed by past and present mining and pastoral activities and that larger areas of higher quality vegetation exist in areas adjacent to the application area, it is unlikely that the vegetation within the application area would be considered as significant habitat for fauna.

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

Methodology MBS Environmental (2009)

(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

Goldfields Landcare Services conducted a flora and vegetation survey of the proposed clearing area in August and September 2009. The purpose of the survey was to define and map the plant communities and to search for Rare and Priority flora (Goldfields Landcare Services, 2009). The survey consisted of a desktop survey in addition to field surveys and covered a 142 hectare area (Goldfields Landcare Services, 2009). The flora and vegetation survey identified the following Priority flora species:

- *Phyllanthus baeckeoides* (Priority 3).

The size of the population within and outside of the application area is estimated as consisting of 1200 plants. It is estimated that less than 10% of this population will be removed by the proposed clearing (Goldfields Landcare Services, 2009). The Western Australian Herbarium (1998 – 2010) has numerous records of this species occurring throughout the Murchison and Great Victoria Desert bioregions. In addition, Western Botanical (2008) has discovered a population of *Phyllanthus baeckeoides* near Leinster consisting of approximately 400 plants. Given the number of plants to be impacted by the proposed clearing, in comparison to the size of the population, the proposed clearing is not likely to impact on the conservation status of this species.

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

Methodology Goldfields Landcare Services (2009)
Western Australian Herbarium (1998 - 2010)
Western Botanical (2008)

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Comments

Proposal is not likely to be at variance to this Principle

There are no known Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) within the area applied to clear (GIS Database). The nearest known PEC is located approximately 30 kilometres west of the application area (GIS Database).

Goldfields Landcare Services (2009) reports that no TECs or PECs were identified during the flora and vegetation survey of the application area.

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

Methodology Goldfields Landcare Services (2009)
GIS Database
- Threatened Ecological Communities

(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 Great Victoria Desert and Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregions (GIS Database). Shepherd (2007) reports that approximately 100% of the pre-European vegetation still exists within these bioregions (see table below). The vegetation within the application area is recorded as the following Beard Vegetation Association (Shepherd, 2007):

- **Beard Vegetation Association 18:** Low woodland; mulga (*Acacia aneura*).

According to Shepherd (2007) approximately 100% of this vegetation association remains within the bioregions (see table below).

Therefore, the vegetation within the application area is not a significant remnant of native vegetation within an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Great Victoria Desert	21,794,205	21,784,757	~99.9	Least Concern	~8.5
IBRA Bioregion - Murchison	28,120,590	28,120,590	~100	Least Concern	~1.1
Beard vegetation associations - State					
18	19,892,305	~19,890,195	~100	Least Concern	~2.1
Beard vegetation associations - Bioregion Great Victoria Desert					
18	1,954,625	1,964,625	~100	Least Concern	~9.2
Beard vegetation associations - Bioregion Murchison					
18	12,403,172	12,403,172	~100	Least Concern	~0.4

* Shepherd (2007)
** 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 the Environment (2002)
Shepherd (2007)
GIS Database
- Interim Biogeographic Regionalisation of Australia

(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

According to available databases there are three ephemeral drainage lines that intersect the application area (GIS Database). Goldfields Landcare Services (2009) reports the following two vegetation communities that occur within the application area as being associated with watercourses:

- **Drainage Tract Mulga Shrubland (DRMS)**
  Sparse mulga shrub (10 – 30% Projected Foliage Cover (PFC) >2 metres) with *Acacia craspedocarpa* and *Eremophila oldfieldii* subsp. *angustifolia* over mid dense heath (30 – 70% PFC 1 – 2 metres) of *Acacia tetragonophylla*, *Senna* spp., *Eremophila scoparia* and *Scaevola spinescens* over very sparse open dwarf scrub (2 – 10% PFC <1 metre) of *Eremophila glutinosa*, *Maireana* spp., *Ptilotus obovatus* and *Sclerolaena bicornis* on orange sandy loam.

- **Degraded DRMS**
  Scattered tall shrubs of *Acacia aneura* and *Acacia craspedocarpa* (<2% PFC >2 metres) over scattered shrubs (<2% PFC 1 – 2 metres) of *Eremophila scoparia* and *Senna artemisioides* over very sparse open dwarf scrub (2 – 10% PFC <1 metre) of *Ptilotus obovatus*, *Maireana* spp., *Atriplex* spp., *Frankenia interioris* var. *interioris* and *Sclerolaena* spp. on pink sandy soil.

These descriptions indicate that the DRMS vegetation unit is in places, highly degraded from previous pastoral activities and photographs supplied by Goldfields Landcare Services (2009) support this. Crescent Gold (2010) have committed to minimising disturbance to vegetation along drainage courses during construction and to avoid channel modifications by implementing the management measures listed below:

- Erosion at drainage line crossings will be minimised by rock paving in watercourses, use of blanket material where required and rock breaching in the sides of the drainage lines particularly upstream;
- The road design will ensure that rainfall will be contained in the V drains and that V drains have the capacity to contain water associated with dust management; and
- Crescent Gold will minimise disturbance to vegetation along drainage courses during construction and avoid channel modifications.

Given the linear nature of the proposed clearing and that the vegetation associations within the application area are well represented in surrounding areas, it is expected that the regional impact of clearing on vegetation associated with watercourses will be minimal.

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

Methodology Crescent Gold (2010)
Goldfields Landcare Services (2009)
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 within three land systems (GIS Database). The following two land systems are the most at risk of land degradation based on land system descriptions by Pringle et al. (1994) and landforms within the application area:

Bevon Land System: Irregular low ironstone hills with stony lower slopes supporting mulga shrublands (Pringle et al., 1994). Minor areas with texture contrast soils on breakaway slopes and narrow drainage tracts are susceptible to soil erosion, particularly if the perennial shrub cover is substantially reduced or the soil surface is disturbed (Pringle et al., 1994). An ephemeral drainage line transects the application area within this land system (GIS Database) and therefore, the clearing of native vegetation may exacerbate soil erosion in this area.

Sherwood Land System: Granite breakaways and extensive stony plains with mulga shrublands and minor halophytic shrublands (Pringle et al., 1994). Lower footslopes, alluvial plains and drainage tracts generally have fragile soils which are highly susceptible to water erosion (Pringle et al., 1994). An ephemeral drainage line transects the application area within this land system (GIS Database). Therefore, the clearing of native vegetation may exacerbate soil erosion in this area.

Soil erosion is likely to be fairly minimal in many sections of the application area due to the low rainfall and gentle topography. The descriptions supplied above indicate that drainage lines have the largest erosion risk. Crescent Gold (2010) have made the following commitments to prevent soil erosion:

- Clearing and topsoil stripping will not be undertaken during periods of heavy rainfall or high winds;
- Erosion at drainage line crossings will be minimised by rock paving in watercourses, use of blanket material where required and rock breaching in the sides of the drainage lines particularly upstream;
- The road design will ensure that rainfall will be contained in the V drains and that V drains have the capacity to contain water associated with dust management; and
- Crescent Gold will minimise disturbance to vegetation along drainage courses during construction and avoid channel modifications.

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

Methodology Crescent Gold (2010)
Pringle et al. (1994)
GIS Database
- Hydrography, linear
- 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 at variance to this Principle**
The proposed clearing is not located within any conservation areas (GIS Database). The nearest Department of Environment and Conservation managed land is the Queen Victoria Spring Nature Reserve located approximately 125 kilometres south of the application area (GIS Database).

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

Methodology GIS Database
- DEC Managed Land and Waters

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments **Proposal is not likely to be at variance to this Principle**
There are no permanent watercourses or wetlands within the application area although there are several ephemeral drainage lines (GIS Database).

Rainfall within the region is low and the topography of the application area is primarily flat, however, flash flooding is known to occasionally occur within the Laverton region (Crescent Gold, 2010). Under these flooding conditions runoff and sheet flow could exacerbate soil erosion. Crescent Gold (2010) have committed to the

following measures to minimise soil erosion and reduce the impacts of runoff on surface water quality:

- Clearing and topsoil stripping will not be undertaken during periods of heavy or high winds;
- The road design will ensure that rainfall will be contained in the V drains and that V drains have the capacity to contain runoff from water associated with dust management;
- Erosion at drainage line crossings will be minimised by rock paving in watercourses, use of blanket material where required and rock beaching on the sides of the drainage lines particularly upstream;
- Crescent Gold will check that the flow through pipes after a major rainfall event is unrestricted and will remove blockages as necessary; and
- Crescent Gold will minimise disturbance to vegetation along drainage courses during construction and avoid channel modifications.

Crescent Gold (2010) reports that the regional geology of the area is of low permeability. Groundwater occurs in a discontinuous fractured rock aquifer system and the zone of permanent saturation is generally 40 to 50 metres below the ground surface (Crescent Gold, 2010). Given the depth of groundwater, the removal of vegetation, including deep rooted trees and shrubs, is unlikely to impact on groundwater levels or quality.

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

Methodology Crescent Gold (2010)
GIS Database
- Hydrography, linear

(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

According to available databases several ephemeral drainage lines transect the application area (GIS Database). These watercourses are likely to flow during times of high rainfall and flash flooding. Flash flooding is known to occur occasionally in the Laverton area, however, floodwaters rapidly rise and disperse (Crescent Gold, 2010).

A pre-existing track runs parallel to the proposed new road alignment and in addition, many of the vegetation communities within the application area have been degraded by grazing, particularly vegetation associated with drainage lines (Goldfields Landcare Services, 2009). Furthermore, the total area of clearing to occur within vegetation associated with watercourses is fairly minimal. Given the degraded nature of the application area and the minimal amount of clearing to occur in watercourses, it is unlikely that the proposed clearing would cause or exacerbate the incidence or intensity of flooding in the area.

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

Methodology Crescent Gold (2010)
Goldfields Landcare Services (2009)
GIS Database
- Hydrography, linear

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

Comments

There is one Native Title claim (WC99/001) over the area under application (GIS Database). This claim has been registered with the Native Title Tribunal on behalf of the claimant group, however, the mining tenement 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 no 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.

It is the proponent's responsibility to liaise with the Department of 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.

One public submission was received during the advertising period for this proposal regarding heritage issues. The information contained in the submission has been forwarded to Crescent Gold at the request of the submitter.

Methodology GIS Database
- Aboriginal Sites of Significance
- Native Title Claims

4. Assessor's comments

Comment

The proposal has been assessed against the Clearing Principles and the proposed clearing is at variance to Principle (f), may be at variance to Principle (g), is not likely to be at variance to Principles (a), (b), (c), (d), (i) and (j) and is not at variance to Principles (e) and (h).

Should the permit be granted it is recommended that conditions be imposed for the purposes of weed management, rehabilitation, staged clearing, record keeping and permit reporting.

5. References

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6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAFWA	Department of Agriculture and Food, Western Australia.
DA	Department of Agriculture, Western Australia.
DEC	Department of Environment and Conservation
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DoE), 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, Western Australia.
DoIR	Department of Industry and Resources, Western Australia.
DOLA	Department of Land Administration, Western Australia.
DoW	Department of Water
EP Act	Environment Protection Act 1986, Western Australia.
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System.
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	Rights in Water and Irrigation Act 1914, Western Australia.
s.17	Section 17 of the Environment Protection Act 1986, Western Australia.
TECs	Threatened Ecological Communities.

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.