



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 1868/2
Permit type: Purpose Permit

1.2. Proponent details

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

1.3. Property details

Property: Mining Lease 39/138
Mining Lease 39/139
Miscellaneous Licence 39/124
Local Government Area: Shire of Menzies
Colloquial name: Fish Project

1.4. Application

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

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
<p>Beard vegetation associations have been mapped at 1:250000 scale for the whole of WA, and are a useful tool to examine the vegetation extent in a regional context. Two Beard vegetation associations are located within the area proposed to be cleared (GIS Database):</p> <p>1. Beard Vegetation Association 18 - Low woodlands; Mulga (<i>Acacia aneura</i>); and</p> <p>2. Beard Vegetation Association 1239 - Hummock grasslands, open medium tree & Mallee steppe; Marble Gum & Mallee (<i>E. youngiana</i>) over hard spinifex <i>Triodia basedowii</i> on sandplain).</p> <p>A flora survey was conducted by MBS Environmental between 8th and 9th of March 2006. As a result of the flora survey three vegetation units were identified within the project area:</p> <p>1. OLW - Open Low Woodland of <i>Casuarina pauper</i> and <i>Acacia</i> species over Mixed Shrubland on low ironstone hill;</p> <p>2. HGE - Hummock Grassland of <i>Triodia basedowii</i> with scattered <i>Eucalyptus</i> and <i>Acacia</i> trees and groves on red sand plain.; and</p> <p>3. MWS - <i>Acacia aneura</i> (Mulga) Groves/Woodland over Mixed Tall Shrublands, seasonal Open Grasslands and herbs on red brown loam and clay loam flats.</p>	<p>Crescent Gold Limited have applied to clear up to 78 hectares within an application area of 550 hectares for the purpose of Mineral Production. This will involve constructing an open pit, waste rock dump, laydown area, topsoil stockpile, low grade stockpile, campsite and haul road which is approximately 5.5km in length (MBS Environmental, 2007).</p>	<p>Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)</p>	<p>The vegetation and landscape units are well represented throughout the region (MBS Environmental, 2007). There is evidence of disturbance within the project site mainly within the proposed pit area, which has been subject to focused exploration activities (MBS Environmental, 2007). No weeds were identified within the proposed clearing area as a result of the vegetation survey (MBS Environmental, 2007).</p> <p>Crescent Gold Limited received a clearing permit (CPS 1868/1) on 16 August 2007 to clear up to 78 hectares of native vegetation for the establishment of a gold mining project (colloquially termed the Fish Project). Crescent Gold Limited are yet to undertake any native vegetation clearing pursuant to CPS 1868/1 and are seeking to extend the duration of the permit by a further five years.</p>

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 clearing permit application is located within the Great Victoria Desert Shield IBRA (Interim Biogeographic Regionalisation of Australia) subregion (GIS Database). The areas of outstanding biodiversity in the subregion are mostly associated with Queen Victoria Springs National Park, which is located approximately 120 kilometres to the south of the application area (Barton & Cowan, 2001). Mining activities are the major land use within this region, while pastoral leases also make up a small portion (Barton & Cowan, 2001). The project area is not located within a pastoral lease (GIS Database).

Common vegetation types of the Great Victoria Desert Shield Subregion include Spinifex (*Triodia spp*) and mallee over hummock grassland, scattered Marble Gum (*E. Gongylocarpa*) and native pine on deeper sands of sandplains, and Mulga and *Acacia* woodlands on colluvial and residual soils (Barton & Cowan, 2007). The vegetation types mentioned above were identified within the Project Area during the flora survey conducted by MBS Environmental (2007). These vegetation types are also well represented in surrounding bioregions such as the Murchison and Great Victoria Desert (MBS Environmental, 2007).

A total of 82 taxa (including subspecies and varieties) from 44 genera and 26 families were recorded from the Fish Project Area during the flora and fauna assessment (MBS Environmental, 2007). This indicates it is not an area of high species diversity. No Declared Rare Flora (DRF) or Priority species or significant fauna habitats were identified within the Project Area. The fauna habitats that were present within the Fish Project area are widespread and common both locally and regionally (MBS Environmental, 2007).

MBS Environmental (2007) have stated that the hill area where the open pit will be constructed shows signs of exploration disturbance in the form of pads, drilling, and tracks on the top and eastern slopes. There are also numerous vehicle tracks within and around the Project Area which have already fragmented the landscape (MBS Environmental, 2007). Such disturbance is likely to have diminished the biodiversity value of the local area. Therefore it is not likely that the area proposed to be cleared represents areas with outstanding biological diversity, or areas that have a higher diversity of fauna or flora than other regions.

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

Methodology

Barton & Cowan (2001).

MBS Environmental (2007).

GIS Databases:

Interim Biogeographic Regionalisation of Australia - EA 18/10/00

Interim Biogeographic Regionalisation of Australia (subregions) - EA 18/10/00

(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

No Threatened Fauna have been recorded in the Project Area or within a 50 kilometre radius (GIS Database).

MBS Environmental (2007) undertook a level 1 Reconnaissance Fauna Survey within the Fish Project Area. This involved a database search to determine if any fauna of conservation significance had been recorded in the area, and a site visit to determine if there was any significant fauna habitat within the Project Area (MBS Environmental, 2007).

The Department of Environment and Conservation (DEC) and the Department of Environment and Heritage databases were searched in order to identify fauna species of conservation significance for the project area. As a result of this search nine species of conservation significance were identified as potentially occurring within the application area (MBS Environmental, 2007). These are: Peregrine Falcon (*Falco peregrinus*), Australian Bustard (*Ardeotis australis*), Slender-Billed Thornbill (western)(*Acanthiza iredalei iredalei*), Malleefowl (*Leipoa ocellata*), Princess Parrot (*Polytelis alexandrae*), Mulgara (*Dasyercus cristicauda*), Great Desert Skink (*Egernia kintorei*), Oriental Dotterel (*Charadrius veredus*), Rainbow Bee-eater (*Merops ornatus*).

During a site visit conducted by MBS Environmental (2007) none of the species mentioned above were observed within the application area. Three primary fauna habitats were identified at a landscape level within the Project Area:

1. Hummock grassland with occasional *Eucalyptus* trees and groves, and shrubs on sand plain;
2. Mulga dominated flats on loam or clay loam soils; and
3. Low ironstone hill with rocky surface supporting *Casuarina* and *Acacia*, open low woodland over assorted mid storey shrubs.

A granite slab outcropping with rock pool areas was observed outside the survey area to the north east (MBS Environmental, 2007). This was a significant habitat in the local area, but is not located within the areas which are to be cleared.

DEC advice was received from the chief ecologist at the DEC Kalgoorlie regional office. The information indicated that Hummock grasslands of spinifex with scattered *Eucalyptus* growing on red sands approximately 100 kilometres south east of Laverton, are potentially suitable habitat for a number of threatened and priority taxa. These include Mulgara, Great Desert Skink, Australian Bustard, Malleefowl and the Long-tailed Dunnart. Based on this information, the assessing officer considered it necessary for Crescent Gold to conduct a Fauna Assessment and Targeted Mulgara Search within the Project Area. This survey was conducted by Bamford Consulting Ecologists on the 20th and 21st of June 2007 (Bamford Consulting Ecologists, 2007) .

The Mulgara (Vulnerable - Taxa that are rare or likely to become extinct) is found in the deserts of Central and Western Australia (Strahan, 1995). It requires areas that have clayey sand and sandy loam soils with hummock grasses under the influence of paleodrainage or surface drainage systems (Burbidge, 2004). This type of habitat was widespread within vegetation association HGE, which covers approximately 60% of the project area. Therefore it is considered that the likelihood of Mulgara being found within the application area is high. However the Fauna Assessment and Targeted Mulgara Search did not locate any evidence of Mulgara or its distinctive burrows within the Project Area (Bamford Consulting Ecologists, 2007). Therefore it is unlikely that the proposal will significantly impact the conservation of the Mulgara.

The Great Desert Skink (Vulnerable - Taxa that are rare or likely to become extinct) is endemic to the arid zone where its current distribution is limited to the Gibson Desert, Great Sandy Desert and Tanami Desert (Department of the Environment and Water Resources (DEWR), 2007). Its habitat is predominantly Spinifex (*Triodia* species) sandplain areas with scattered shrubs and occasional trees from the genera *Acacia*, *Eremophila*, *Grevillea*, *Hakea* and occasionally *Eucalyptus* (DEWR, 2007). Vegetation type HGE identified by MBS Environmental may be suitable habitat for the Great Desert Skink. However the soils of the proposed clearing area are not conducive to burrowing as they are lateritic and loamy in nature, and therefore the application area is unlikely to support Great Desert Skink populations (MBS Environmental, 2007). In addition, the fauna assessment and targeted Mulgara search did not yield any evidence of the Great Desert Skink in the application area (Bamford Consulting Ecologists, 2007).

The Australian Bustard (DEC Priority 4) is found in tussock grasslands, *Triodia* hummock grassland, grassy woodland and low shrublands (Garnett & Crowley, 2000). Its habitat is limited to the arid areas of Northern and Central Australia (Garnett & Crowley, 2000). Bamford Consulting Ecologists (2007) have indicated the habitat within the disturbance area is likely to support this nomadic species as it is common in grassland areas. Vegetation association HGE which is made up of Hummock Grasslands covers 60% of the project area (MBS Environmental, 2007). However it is highly unlikely that a disturbance of this nature would significantly impact the conservation of this species given that vegetation association HGE is well represented on a local and regional scale (MBS Environmental, 2007).

The Long-tailed Dunnart (DEC Priority 4) occurs in rocky, rugged habitat from the Pilbara and upper Gascoyne region in the West to the North-Eastern Goldfields (DEC, 2007). According to Strahan (1995) the species has recently been recorded from plateaus near breakaways, and scree and rocky outcrops in the Goldfields region. DEC (2007) have stated that it is possible that the Long-tailed Dunnart may be found on the low ironstone hill in the application area. However this area is composed of a stony mantle of ironstone rather than a rocky outcrop habitat which is more likely to support Long-tailed Dunnarts (MBS Environmental, 2007). Bamford Consulting Ecologists (2007) did not find any evidence of the Long-tailed Dunnart in the disturbance footprint during their fauna assessment.

Malleefowl (Vulnerable - Taxa that are rare or likely to become extinct) are large ground dwelling birds that were once widespread throughout Southern Australia (DEC, 2007). Malleefowl typically inhabit arid-semi arid woodland that is dominated by Mallee Eucalypts on sandy soils, but are also found in Mulga associations (DEC, 2007). It is known to occur in the Laverton area, recorded from Leonora in 1998 (Bamford Consulting Ecologists, 2007). Based on this information it is possible that Malleefowl may be found in vegetation association MWS. Vegetation association MWS may provide habitat for Malleefowl however the fauna assessment by Bamford Consulting Ecologists (2007) did not identify any evidence of Malleefowl in the Project Area.

During the Fauna Assessment and Targeted Mulgara Search two species of mygalomorph spiders were recorded from six locations in the Project Area, namely *Aganippe occidentalis* and *Aganippe rhapsiduca*. Both of these species are thought to be short-range endemic invertebrates (Bamford Consulting Ecologists, 2007). However Bamford Ecologists (2007) have indicated that both species of spider are considered to be widespread throughout the region, therefore there will be little impact to either species as a result of the clearing.

Both MBS Environmental (2007), and Bamford Consulting Ecologists (2007), have stated that the fauna habitats that were observed were of low diversity, and were widespread and common both regionally and locally. No significant habitats such as ranges, ridges or caves were recorded within the Project Area. It also should be noted that up to 32.7ha of vegetation within the application area has been disturbed from exploration activities and vehicle tracks. Therefore it is considered unlikely that the proposed clearing will result in the loss of significant fauna habitat.

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

Methodology Bamford Consulting Ecologists (2007).
Burbidge (2004).
Department of Environment and Water Resources (2007).
Garnett & Crowley (2000).
MBS Environmental (2007).
Strahan (1995).

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

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

There are no known records of Declared Rare Flora (DRF) within the proposed clearing area or in the general vicinity (GIS Database).

A vegetation and habitat assessment was undertaken by MBS Environmental between 8th and 9th of March, 2006 (MBS Environmental, 2007). The survey involved an on ground assessment of vegetation types, collection of flora for identification and a detailed database search.

No DRF or Threatened (Declared Rare) Flora were identified as a result of the search of DEC's Declared Rare and Priority Flora List (MBS Environmental, 2007). MBS Environmental did not observe any DRF or Priority Flora species during their field survey.

During the ground survey a total of 82 taxa from 44 genera and 26 families were recorded from the survey area (MBS Environmental, 2007). The most common families were *Poaceae*, *Mimosaceae*, *Chenopodiaceae*, *Myoporaceae*, *Amaranthaceae* and *Malvaceae*. MBS Environmental (2007) have stated that the taxa identified in the clearing area are well represented in surrounding regions.

MBS Environmental (2007) have indicated that the vegetation associations found within the application area are common and widespread throughout the North Eastern Goldfields and Great Victoria Desert Natural Region. As a result of the above and the lack of DRF or Priority species found it is unlikely that the proposal will have a significant impact on the flora and vegetation of the region.

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

Methodology MBS Environmental (2007).
GIS Databases:
Declared Rare and Priority Flora List - CALM 01/07/05

(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

No known Threatened Ecological Communities (TEC's) are found within the application area (GIS Database). There are no TEC's found within the IBRA Subregion Great Victoria Desert Shield (Barton & Cowan, 2001). None of the vegetation types identified by MBS Environmental in the Project Area are ecological communities at risk, as described in the assessment of the biodiversity values of the Great Victoria Desert Shield IBRA Subregion by Barton & Cowan (2001). The flora and fauna assessment of the application area conducted by MBS Environmental did not identify any significant ecological communities within the area proposed to be cleared (MBS Environmental, 2007).

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

Methodology Barton & Cowan (2001).
MBS Environmental (2007).
GIS Database:
Threatened Ecological Communities - CALM

(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 area applied to be cleared is located within the IBRA Great Victoria Desert bioregion (GIS Database). According to Shepherd (2007), there is approximately 100% of pre-European vegetation remaining in this bioregion. The vegetation of the application area is classified as Beard Vegetation Association 18 - Low woodland; mulga (*Acacia aneura*), and Beard Vegetation Association 1239 - Hummock grasslands, open medium tree & mallee steppe; marble gum & mallee (*E. youngiana*) over hard spinifex *Triodia basedowii* on sandplain (GIS Database). Both of these vegetation associations remain at 100% of the Pre-European extent

(Shepherd, 2007). The proposed clearing will not reduce the extent of either of the vegetation associations below current recognised threshold levels. Therefore the area proposed to clear does not represent a significant remnant of vegetation in the wider regional area.

	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	21,784,756	~99.9	Least concern	8.4
Beard veg assoc. – State					
18	19,892,305	19,890,195	~100	Least concern	2.1
1239	2,234,315	2,234,315	~100	Least concern	11.9
Beard veg assoc. Great Victoria Desert bioregion					
18	1,954,625	1,954,625	~100	Least concern	9.2
1239	2,233,685	2,233,685	~100	Least concern	11.8

* 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 Environment (2002)
Shepherd (2007)
GIS Database:
Interim Biogeographic Regionalisation of Australia - EA 18/10/00
Pre-European Vegetation - DA 01/01

(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 not at variance to this Principle

A minor, non perennial drainage line occurs in the North East corner of the Project Area (GIS Database). This drainage line takes runoff from a rocky outcrop before fanning out to the plain below (Department of Agriculture and Food Western Australia (DAFWA), 2007).

A flora and vegetation survey of the mining tenement was undertaken by MBS Environmental in March 2006. It was determined from this survey that there were three vegetation associations within the application area (MBS Environmental, 2007). MBS Environmental (2007), have stated that it is unlikely that any of the vegetation associations identified within the Project Area are restricted to wetland environments or would be classed as riparian vegetation.

Furthermore MBS Environmental (2007) have explained that Crescent Gold have sited their mining infrastructure away from this area such that no clearing of this area is likely to occur.

Therefore it is unlikely that there will be any significant impacts on vegetation associated with watercourses or wetlands as a result of the proposed clearing.

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

Methodology DAFWA (2007).
MBS Environmental (2007).
GIS Databases:
Geodata, Lakes - GA 28/06/02
Hydrography, linear (medium scale, 250k GA)
Hydrography, linear - DOE 1/2/04_1

(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 area is characterised by low rainfall of approximately 200 millimetres, and is likely to experience infrequent but highly intense rainfall periods (BoM, 2007).

Although there are no watercourses within the application area, the proposed mine and related infrastructure is

to be located down gradient of breakaways east/ north-east and north-east of the site (DAFWA, 2007). Under the infrequent but intense rainfall conditions, rainfall is likely to reach the proposed minesite. It is likely that the implementation of the mine will divert surface water flows, and could result in vegetation downstream being starved of these flows (DAFWA, 2007). In order to counter this problem diversion bunds will be installed around mining infrastructure (MBS Environmental, 2007).

The proposed open pit mine is mainly located within an area mapped as Open low woodland of *Casuarina pauper*, *Acacia* species over mixed shrubland on low ironstone hill (MBS Environmental, 2007). It is likely that clearing of vegetation in this area will cause soil erosion and require surface water control measures (DAFWA, 2007). MBS Environmental (2007) have stated that diversion bunds will be constructed where necessary.

The proposed mine access road/haul road is likely to contain Mulga woodland vegetation (DAFWA, 2007). Appreciable slopes (0.4% - 1%) occur at the western and eastern edges of the proposed road. It is possible that the road will disrupt sheet flows, resulting in soil erosion and loss of native vegetation down stream (DAFWA, 2007). MBS Environmental (2007) have stated that they will commit to the management of surface water flows on the sloping sections of the haul road such that sheet flows are not effected.

It is likely that as a result of this proposal there will be land degradation in the form of soil erosion and loss of native vegetation downstream from disturbed areas (DAFWA, 2007).

Based on the above, the proposed clearing may be at variance to this principle. However, provided surface water control measures are implemented in areas such as at the sloping sections of the road and around the proposed open pit, then land degradation can be managed.

Methodology BoM (2007).
DAFWA (2007).
MBS Environmental (2007).

(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 closest conservation area to the proposal is the Queen Victoria Spring Nature Reserve, which is located approximately 120 kilometres to the south (GIS Database). Although there is unbroken vegetation linkage between the application area and the nature reserve, at this distance, there is little likelihood that there will be fauna movement between the two areas. As a result, the environmental values of the nature reserve mentioned above are unlikely to be impacted by the proposed clearing.

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

Methodology GIS Databases:
CALM Managed Lands and Waters - CALM 1/07/05

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

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

The proposal is not located within a Public Drinking Water Supply Area (GIS Database).

Surface water in the area is likely to be in the form of sheet flow following heavy rainfall events and is likely to be heavy in sediments (DAFWA, 2007). Given that surface water from rainfall events is already of a poor quality it is unlikely that the clearing will significantly reduce water quality.

Surface water quality within the application area will be managed as part of Crescent Gold's environmental management plan. MBS Environmental (2007) have stated that runoff from potentially contaminated areas will be directed to specific collection points, where contaminants will be removed to re-use. Collected surface runoff from potentially contaminated areas will be monitored on an opportunistic basis for key quality parameters prior to re-use and analytical results will be reported in the Annual Environmental Report (AER) submitted to DMP (MBS Environmental, 2007).

Groundwater within the area under application is saline at between 3000 - 7000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). The removal of 78 hectares of vegetation is unlikely to result in a significant increase in salinity, given ground water in the Project Area is already saline.

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

Methodology DAFWA (2007).
GIS Databases:
Groundwater Salinity, Statewide - DOW
Public Drinking Water Source Areas (PDWSAs) - DOW

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

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

The climate of the region is hot dry summers and cool winters, with an average rainfall of 260 millimetres, though there may be considerable variation from year to year (BoM, 2007). The most reliable rains occur in winter from cold fronts arriving from the west, and cloud bands from the northwest. Although rare, decaying tropical cyclones, originating off the northwest coast can also move through the Goldfields, producing heavy rains and sometimes localised flooding (BoM, 2007).

The Project Area will be located down gradient of breakaways to the East North East and North East of the site (DAFWA, 2007). During rainfall periods, water is likely to move from the higher breakaway areas to the lower plains in the form of sheetflow. As a result rainfall is unlikely to collect and flood as it will be moving in sheetflows.

Evaporation in the region is very high. Leonora the closest pastoral centre, has an annual evaporation rate of 3473 mm/yr (Luke et al., 2003). This is 13 times the annual rainfall, therefore during rainfall periods water is unlikely to collect as it will be evaporated very quickly.

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

Methodology BoM (2007).
Luke et al., (2003).
MBS Environmental (2007).
GIS Database:
Hydrography, linear (medium scale, 250k GA)

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

Comments

There are no native title claims in the area under application. The mining tenements have been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There is one registered Site of Aboriginal Significance located one kilometre south of the area applied to clear (Jasper Stone Arrangement, Site ID 1524) (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

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

Crescent Gold Limited received a clearing permit (CPS 1868/1) on 16 August 2007 to clear up to 78 hectares of native vegetation for the establishment of a gold mining project (colloquially termed the Fish Project). Crescent Gold Limited are yet to undertake any native vegetation clearing pursuant to CPS 1868/1 and are seeking to extend the duration of the permit by a further five years.

Methodology GIS Databases:
Aboriginal Sites of Significance - DIA
Native Title Claims - DLI

4. Assessor's comments

Comment

The proposal has been assessed against the Clearing Principles, and the proposed clearing 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), (f) or (h).

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

5. References

- Bamford Consulting Ecologists (2007) Fauna Assessment and Targeted Mulgara Search of the Fish Deposit, Laverton Gold Project. Unpublished report by Bamford Consulting Ecologists prepared for MBS Environmental, Jolimont, Western Australia.
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- Shepherd, D.P. (2007) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.
- Strahan, R. (1995) The Mammals of Australia, Reed Books, New South Wales.

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
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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.