



1. Application details

1.1. Permit application details

Permit application No.: 2961/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Crescent Gold Limited

1.3. Property details

Property: Miscellaneous Licence 38/53
Local Government Area: Shire of Laverton
Colloquial name: Mt Weld Haul Road Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
20		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	Clearing Description	Vegetation Condition	Comment
Beard Vegetation Associations have been mapped at a 1:250,000 scale for the whole of Western Australia. One Beard Vegetation Association has been mapped within the application area (GIS Database; Shepherd et al., 2001). 18: Low woodland; mulga (<i>Acacia aneura</i>)	Crescent Gold Limited has applied to clear up to 20 hectares of native vegetation within a boundary of approximately 53 hectares for the purposes of upgrading an existing haul road and haul road construction (Western Botanical, 2007).	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).	The vegetation condition was derived from a vegetation survey conducted by Western Botanical (2007).

The application area was surveyed by Western Botanical staff in July 2007 (Western Botanical, 2007). The following vegetation types were identified within the application area:

1. Calciphytic Pearl Bluebush Shrublands (CPBS): *Acacia aneura*, *Hakea preissii*, *Eremophila oldfieldii* subsp. *angustifolia* scattered tall shrubs over *Maireana sedifolia*, *M. pyramidata* low chenopod shrubland over scattered grasses.

2. Stony Ironstone Mulga Shrublands (SIMS): *Acacia aneura*, *Acacia ramulosa* var. *ramulosa*, *Acacia* spp. aff. *quadrimarginea* scrub over *Eremophila forrestii* subsp. *forrestii*, *Scaevola spinescens* (narrow leaf form), *Senna artemisioides* subsp. *helmsii*, *Senna artemisioides* subsp. *filifolia* low scrub.

3. Lateritic Hardpan Mulga Shrubland (LHMS): *Acacia aneura*, *Acacia ramulosa* var. *ramulosa* scrub over *Ptilotus obovatus*, *Ptilotus schwartzii* var. *schwartzii*, *Solanum lasiophyllum* open dwarf scrub over *Eragrostis eriopoda* open grass.

4. Drainage Tract Mulga Shrubland (DRMS): Vegetation composition is highly variable and is largely composed of species common to surrounding vegetation units. Dominated by *Acacia aneura* low forest over highly variable understorey, reflecting species present in adjacent habitats, consisting of shrubs, grasses and herbs.

The application area is located within the Craiggimore deposit, which has been subject to historical mining activities. Currently the Craiggimore Project consists of an existing pit, three waste rock stockpiles and a haul road (MBS Environmental, 2008).

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 occurs within the East Murchison Interim Biogeographic Regionalisation of Australia (IBRA) sub-region (GIS Database). This sub-region is characterised by internal drainage, and extensive areas of elevated red desert sandplains with minimal dune development (CALM, 2002). It contains salt-lake systems associated with the occluded Paleodrainage system (CALM, 2002). This sub-region has broad plains of red-brown soils and breakaway complexes as well as red sandplains (CALM, 2002). The vegetation is dominated by *Mulga* woodlands often rich in ephemerals, hummock grasslands, saltbush shrublands and *Halosarcia* shrublands (CALM, 2002). The vegetation described within the application area (Western Botanical, 2007) is typical of the bioregion.

A vegetation survey of the application area and surrounding vegetation identified 109 species of native flora belonging to 53 genera from 33 families (MBS Environmental, 2008). This is considered to be biologically diverse. Mimosaceae (15), Chenopodiaceae (14) and Myoporaceae (13) families were the most diverse within the survey area (Western Botanical, 2007). This is typical of the floristics of the Murchison IBRA Region.

Three alien weed species were recorded within the vegetation survey area (Western Botanical, 2007). These were Peppercorn Tree (*Schinus molle*), Wild Melon (*Citrullus lanatus*) and Prickly Paddy Melon (*Cucumis myriocarpus*) (Western Botanical, 2007). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This in turn can lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. These species are not listed as a 'Declared Plant' species under the *Agriculture and Related Resources Protection Act 1976* by the Department of Agriculture and Food (DAFWA). Should the permit be granted, it is recommended that appropriate conditions be imposed on the permit for the purpose of weed management.

An area search of the Western Australian Museum's Faunabase conducted by the assessing officer suggests that the application area is diverse in reptile species, particularly Skinks (28) (Western Australian Museum, 2009). The database search found 77 reptile species from 7 families as potentially occurring within the application area, or within a 50 kilometre radius of the application area.

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

Methodology

CALM (2002)
MBS Environmental (2008)
Western Australian Museum (2009)
Western Botanical (2007)
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

The assessing officer has conducted a search of the Western Australian Museum's online fauna database between the co-ordinates 123.0003°E, 28.1632°S and 121.8779°E, 29.1171°S, representing a 50 kilometre radius around the application area.

This search identified 6 Amphibian, 13 Avian, 20 Mammalian and 77 Reptilian species that may occur within the application area (Western Australian Museum, 2009). Of these, the following species of conservation significance have previously been recorded within the search area: Numbat (*Myrmecobius fasciatus*), Bilby (*Macrotis lagotis*), Crested Bellbird (*Oreoica gutturalis*) and the Princess Parrot (*Polytelis alexandrae*) (Western Australian Museum, 2009).

Coffey Environments (2008) conducted a fauna survey of the application area in May 2008. MBS Environmental (2008) conducted a desktop search of the Department of Environment and Conservation (DEC) threatened fauna database to identify species of conservation significance that had been recorded within the area specified. The co-ordinates used were similar to those used by the assessing officer above. In addition to those species listed above, the following fauna species of conservation significance were identified through this database search: Peregrine Falcon (*Falco peregrinus*), Slender-billed Thornbill (*Acanthiza iredalei iredalei*), Australian Bustard (*Ardeotis australis*), Rainbow Bee-eater (*Merops ornatus*), Great Egret (*Ardea alba*), Oriental Plover (*Charadrius veredus*), Mulgara (*Dasyercus cristicauda*), and the Great Desert Skink (*Egernia kintorei*).

Based on habitat requirements, the following species are most likely to occur within the application area:

The Giant Desert Skink (Schedule 1 - Fauna that is rare or likely to become extinct, *Wildlife Conservation (Specially Protected Fauna) Notice, 2008*) is a burrowing species of skink, found in a variety of desert habitats, on sandy, clay and loamy soils (DEC, 2007). Its preferred habitat is sand flats and clay-based or loamy soils vegetated with spinifex (Coffey Environments, 2008). There have been previous records of the Giant Desert

Skink in Laverton in 1967 so it is possible that the vegetation within the application area provides suitable habitat for this species. Given that the vegetation types are well represented throughout the bioregion and the small area proposed to clear (20 hectares) in relation to the size of the sub-region (7,847,996 hectares) it is unlikely that the application area contains significant habitat for this species.

The Peregrine Falcon (Schedule 4 - Other Specially Protected Fauna, *Wildlife Conservation (Specially Protected Fauna) Notice, 2006*), is a wide ranging bird that has little habitat specificity apart from an affinity with cliffs, tall trees for nesting, and water (Pizzey and Knight, 1997). The application area may contain vegetation that provides suitable habitat for this species, however given that this species does not have a restricted range and the vegetation types that comprise its habitat are well represented throughout the bioregion, and the small area proposed to clear (20 hectares) in relation to the size of the sub-region (7,847,996 hectares) it is unlikely that the application area contains significant habitat for this species.

The Australian Bustard (P4 - DEC Priority Fauna List) The Australian Bustard prefers tussock grassland, *Triodia* hummock grassland, grassy woodland and low shrublands (Garnett and Crowley, 2000). This species has previously been recorded within the bioregion and so it is likely that the application area contains suitable habitat for this species. Given that the vegetation types are well represented throughout the bioregion and the small area proposed to clear (20 hectares) in relation to the size of the sub-region (7,847,996 hectares) it is unlikely that the application area contains significant habitat for this species.

The Crested Bellbird (P4 - DEC Priority Fauna List) favours the shrub-layer of *Eucalypt* woodland, mallee, *Acacia* shrubland, *Triodia* hummock grassland, saltbush and heath (Garnett and Crowley, 2000). The Crested Bellbird is relatively widespread over most of inland Australia (Garnett and Crowley, 2000). The vegetation within the application area provides suitable habitat for this species, however given that the vegetation types are well represented throughout the bioregion and the small area proposed to clear (20 hectares) in relation to the size of the sub-region (7,847,996 hectares) it is unlikely that the application area contains significant habitat for this species.

The Rainbow Bee-Eater (migratory - JAMBA International Agreement) occurs mainly in open forests, woodlands and shrublands but also occurs in inland and coastal sand dune systems and mangroves in Northern Australia (Western Australian Museum, 2009). This species is an opportunist and is known to inhabit a wide range of habitats (Pizzey and Knight, 1997). This species is likely to occur within the application area, however given that this species does not have a restricted range and the vegetation types that comprise its habitat are well represented throughout the bioregion it is unlikely that the application area contains significant habitat for this species.

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

Methodology Coffey Environments (2008)
DEC (2007)
Garnett and Crowley (2000)
Pizzey and Knight (1997)
Western Australian Museum (2009)

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

Comments Proposal may be at variance to this Principle

According to available databases, no Declared Rare Flora (DRF) or Priority flora species occur within the application area (GIS Database).

A flora survey was conducted over the application area by Western Botanical staff during the period of 21-23 July 2007 (Western Botanical, 2007). This survey involved on foot traverses of the Craiggimore prospect whilst the haul road was surveyed via a vehicle being driven at a slow pace with frequent stops (Western Botanical, 2007). Different vegetation groups encountered during the survey were described and the vegetation associations were examined for the presence or absence of any DRF and Priority Flora species (Western Botanical, 2007). No DRF were recorded and two Priority flora were recorded during the flora survey, namely *Phyllanthus baeckeoides* (P1) and *Baeckea* sp. Melita Station (H. Pringle 2738) (P3) (Western Botanical, 2007).

Relatively low rainfall in the months prior to the survey meant that most annuals were absent during the survey period. However, a desktop database search of the Department of Environment and Conservation (DEC) known DRF, Priority-Listed Flora and Threatened Ecological Communities (TEC's) indicated that four known annuals of conservation significance may occur within the application area. Namely, these are: *Vittadinia cervicalaris* var. *oldfieldii* (P1), *Goodenia lyrata* (P1), *Gunniopsis propinqua* (P3) and *Gunniopsis rubra* (P3) (Western Botanical, 2007).

Phyllanthus baeckeoides (P1) is an upright shrub 1.5 metres tall with small, cream coloured pendulous flowers (Western Botanical, 2007). This species is found in shallow soils, typically associated with ironstone and quartzite outcrops (Western Botanical, 2007). This species has previously been recorded 21 times, with population sizes varying from isolated plants to in excess of 1000 (Western Australian Herbarium, 2009).

Vittadinia cervicalis var. *oldfieldii* (P1) is an annual herb, growing 0.1 - 0.3 metres high (Western Australian Herbarium, 2009). Two populations of this species have previously been recorded from Laverton and Merredin (Western Australian Herbarium, 2009).

Goodenia lyrata (P1) is a prostrate herb with lyrate leaves and is associated with red sandy loam and near claypans (Western Australian Herbarium, 2009). Previous records indicate that this 6 populations of this species have been identified with infrequent abundance (Western Australian Herbarium, 2009).

Baeckea sp. Melita Station (H. Pringle 2738) (P3) is an upright shrub, 2.2 - 2.5 metres high. It is found on dark red rocky soil over ironstone and is associated with mulga shrubland (Western Australian Herbarium, 2009). Fifty populations of *B. sp. Melita Station* have previously been recorded, some with 1000+ individuals (Western Australian Herbarium, 2009).

Gunniopsis propinqua (P3) is a prostrate annual herb, 0.03 - 0.1 metres tall with white and pink flowers (Western Australian Herbarium, 2009). This species is associated with stony sandy loam and lateritic outcrops (Western Australian Herbarium, 2009). Records indicate that 15 populations *G. propinqua* have previously been recorded, and is considered to be common in frequency (Western Australian Herbarium, 2009).

Gunniopsis rubra (P3) is a prostrate annual herb, 0.01 - 0.03 metres high (Western Australian Herbarium, 2009). This species has previously been recorded 23 times, with population sizes varying from isolated plants to in common (Western Australian Herbarium, 2009).

The Assessing Officer carried out a search for *Phyllanthus baeckeoides* on FloraBase on 23 March 2009 which noted that the conservation status of this species has been altered from Priority 1 to Priority 3 (Western Australian Herbarium, 2009).

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

Methodology Western Botanical (2007)
Western Australian Herbarium (2009)
GIS Database
- Declared Rare and Priority Flora List

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

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

A search of available databases reveals that there are no Threatened Ecological Communities (TECs) within the application area (GIS Database). There are no TEC's located within the East Murchison IBRA sub-region (CALM, 2002). MBS Environmental (2008) reported that no TEC's were identified during the flora survey of the application area.

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

Methodology CALM (2002)
MBS Environmental (2008)
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 IBRA Murchison Bioregion. Shepherd et al. (2001) report that approximately 100% of the pre-European vegetation still exists in this Bioregion. The vegetation in the application area is recorded as Beard Vegetation Association 18: Low woodland; mulga (*Acacia aneura*) (GIS Database; Shepherd et al., 2001). According to Shepherd et al., (2001) there is approximately 100% of this vegetation type remaining (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**	% of Pre-European area in IUCN Class I-IV Reserves
IBRA Bioregion – Murchison	28,120,558	28,120,558	~100.0	Least Concern	~1.1
Beard veg assoc. – State					
18	19,892,437	19,890,348	~100.0	Least Concern	~2.1
Beard veg assoc. – Bioregion					
18	12,406,248	12,403,248	~100.0	Least Concern	~0.4

* Shepherd et al. (2001) updated 2005

** 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 et al. (2001)
GIS Database
- Pre-European Vegetation
- Interim Biogeographic Regionalisation for 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

There are no permanent watercourses or wetlands within the application area (GIS Database). The nearest permanent watercourse is Lake Carey located approximately 24.5 kilometres south-west of the application area, however, considering the distance separating the application area from any major watercourses or wetlands the proposed clearing is unlikely to have a significant impact on these areas (GIS Database).

There are several minor non-perennial watercourses that intersect the application area, however, these are widespread across the landscape and are unlikely to be impacted on by the proposed clearing (GIS Database). To minimise the impact to surface water regimes and ensure the nature surface water flow is maintained it is recommended that culverts and floodways be installed where haul roads intersect drainage lines. Crescent Gold Ltd have liaised with Department of Water (DoW) to determine the best course of action regarding alteration to nature surface water regimes.

The application area experiences rainfall of approximately 232.2 millimetres/year according to the nearest recording station at Laverton (Bureau of Meteorology, 2009). The application area also experiences a pan evaporation rate of approximately 3,200 millimetres/year (Luke et al., 1987).

Vegetation mapping of the application area by Western Botanical (2007) indicates that the native vegetation proposed to be cleared is not riparian vegetation.

Based on the above, the proposed clearing is at variance to this Principle. However, as the minor watercourses located within the application area are only likely to flow following significant rainfall, the proposed clearing is unlikely to result in any significant impact to any watercourse or wetland provided the haul road is correctly engineered.

Methodology Bureau of Meteorology (2009)
Luke et al. (1987)
Western Botanical (2007)
GIS Database
- Hydrography - Linear
- Geodata - Lakes

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

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

The application area has been surveyed by the Department of Agriculture and Food (Van Vreeswyk et al., 2004). The application area is composed of the following land systems (GIS Database);

- Brooking Land System;

- Jundee Land System;
- Nubev Land System; and
- Violet Land System (Western Botanical, 2007)

The Brooking Land System is described as prominent ridges of banded iron formation, supporting mulga shrublands; occasional minor halophytic communities in the south-east (Van Vreeswyk et al., 2004). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'stony plains' land unit of the Brooking Land System. The stone mantle of this land unit provides effective protection against soil erosion but the disturbance or removal of stone mantles may initiate soil erosion (Van Vreeswyk et al., 1994). The vegetation described by Van Vreeswyk et al. (1994) accurately reflects the vegetation types described in the vegetation surveys conducted over the area (Western Botanical, 2007).

The Jundee Land System is described as hardstone plains with ironstone gravel mantles, supporting mulga shrublands (Van Vreeswyk et al., 2004). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'stony plains' and 'drainage tracts' land units of the Jundee Land System. The stone mantle and hardpan earth of these land units provide effective protection against soil erosion (Van Vreeswyk et al., 1994). The vegetation described by Van Vreeswyk et al. (1994) accurately reflects the vegetation types described in the vegetation surveys conducted over the area (Western Botanical, 2007).

The Nubev Land System is described as gently undulating plains, minor limonitic low rises and drainage floors, supporting mulga and halophytic shrublands (Van Vreeswyk et al., 2004). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'lateritic plains' land unit of the Nubev Land System. The shallow red earth on greenstone of this land unit provides effective protection against soil erosion (Van Vreeswyk et al., 1994). The vegetation described by Van Vreeswyk et al. (1994) accurately reflects the vegetation types described in the vegetation surveys conducted over the area (Western Botanical, 2007).

The Violet Land System is described as undulating stony and gravelly plains and low rises, supporting mulga shrublands (Van Vreeswyk et al., 2004). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'narrow drainage tracts' and 'stony plains' land units of the Violet Land System. The soils of these land units are not susceptible to erosion due to abundant stony mantles except in the narrow drainage tracts land unit which are mildly susceptible to water erosion (Van Vreeswyk et al., 1994). In circumstances where the mantle is removed or disturbed, the soil can become moderately susceptible to water erosion. The vegetation described by Van Vreeswyk et al. (1994) accurately reflects the vegetation types described in vegetation surveys conducted over the area (Western Botanical, 2007).

Based on the above, the proposed clearing is not likely to be at variance to this Principle. It is recommended that should a permit be granted, a condition be imposed on the permit with regard to stockpiling of all cleared topsoil and vegetation for use in rehabilitation.

Methodology Western Botanical (2007)
Van Vreeswyk et al. (2004)
GIS Database
- 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**
The application area is located approximately 125 kilometres to the south of the De La Poer Nature Reserve (GIS Database). At this distance it is not likely that the vegetation within the application area provides a buffer to the conservation area, or is important as an ecological linkage to the conservation area. The vegetation types within the application area are well replicated in other land systems within the Murchison region. Consequently, their conservation status is under no threat.

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

Methodology GIS Database
- CALM Managed Lands 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 may be at variance to this Principle**
According to available databases, the application area is located within a Public Drinking Water Source Area (PDWSA) (GIS Database).

There are no permanent waterbodies or watercourses within the application area (GIS Database). The application area is located in an arid region, with mainly winter rainfall (CALM, 2002). With an average annual

rainfall of approximately 232.2 millimetres (Bureau of Meteorology, 2009) and an annual pan evaporation rate of 3,200 millimetres (Luke et al., 1987), there is little surface flow during normal seasonal rains. The proposed clearing may exacerbate surface water runoff during heavy seasonal rainfall events.

The application area is located within the Yilgarn Goldfields Groundwater Province (GIS Database). The groundwater salinity within the application area is approximately 1,000 - 3,000 milligrams/Litre Total Dissolved solids (TDS) (GIS Database). Given the size of the area to be cleared (20 hectares) compared to the size of the Yilgarn Goldfields Groundwater Province (29,644,595 hectares) (GIS Database), the proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

There are no known groundwater dependent ecosystems within the application area (GIS Database).

Based on the above, the proposed clearing may be at variance to this Principle. It is recommended that should a permit be granted, a condition be imposed on the permit directing the Permit Holder to not clear native vegetation unless the purpose for which the clearing is authorised is enacted within 1 month of the clearing taking place.

Methodology Bureau of Meteorology (2009)
CALM (2002)
Luke et al. (1987)
GIS Database
- Public Drinking Water Source Area
- Groundwater - Provinces
- Groundwater Salinity
- Potential Groundwater Dependent Ecosystems

(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 drains into the Lake Carey catchment area (GIS Database). The relatively small area to be cleared (20 hectares) in relation to the size of the catchment area (11,378,213 hectares) (GIS Database) is not likely to lead to an increase in flood height or duration.

The application area receives low rainfall (approximately 232.2 millimetres/year), usually experienced during the winter months (CALM, 2002). The water systems located within and in close proximity to the application area are dry for the majority of the year and only flow during and immediately after significant rainfall (MBS Environmental, 2008). It is likely that during times of intense rainfall there may be some localised flooding in adjacent areas.

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

Methodology CALM (2002)
MBS Environmental (2008)
GIS Database
- Hydrographic Catchments - Catchments

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

Comments

There is one native title claim (WC99_001) over the area under application. This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the 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*.

There are no known Aboriginal sites of significance within the application area (GIS Database). The nearest known Aboriginal site of significance (ID_16081) is located approximately 1.2 kilometres north of 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 application area is located within a Public Drinking Water Source Area (PDWSA) (GIS Database).

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.

No public submissions were received in regard to this Permit application.

Methodology GIS Database

- Aboriginal Sites of Significance
- Native Title Claims
- Public Drinking Water Source Areas

4. Assessor's comments

Comment

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

It is recommended that should a permit be granted, conditions be imposed on the permit with regards to weed management, flora management, stockpiling of all cleared topsoil and vegetation for use in rehabilitation, record keeping and permit reporting.

5. References

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- Western Australian Museum (2009) Faunabase - Western Australian Museum, Queensland Museum and Museum and Art Gallery of NT Collections Databases. <http://www.museum.wa.gov.au/faunabase/prod/index.htm> Accessed 26 February 2009. Western Australian Museum
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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
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.