Government of **Western Australia**
Department of **Mines and Petroleum**

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3282/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: **Catalpa Resources Ltd**

1.3. Property details

Property: Mining Lease 77/88
Mining Lease 77/124
Local Government Area: Shire of Westonia
Colloquial name: Edna May Gold Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1.67		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
Vegetation within the application area has been mapped at a 1:250,000 scale as the following Beard Vegetation Association (GIS Database, Shepherd, 2007):

536: Medium woodland; morel & rough fruited mallee (*Eucalyptus corrugata*).

A flora and vegetation survey of the application area was undertaken by Armstrong and Osborne in October 2002. The following two vegetation communities were identified within the application area (Jeanes, 2009).

1. Mixed Eucalypt Low Forest

2. Gimlet Low Forest

Clearing Description
Catalpa Resources has applied to clear 1.67 hectares. The proposal is for the construction and widening of roads and the construction of an explosives magazine (Jeanes, 2009). Clearing will be by mechanical means.

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

to

Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

Comment
The clearing application area is located approximately 2 kilometres north of Westonia (GIS Database).

The vegetation condition is derived from information provided by Jeanes (2009).

A number of weed species have been identified within the application area (Jeanes, 2009).

3. Assessment of application against clearing principles

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

Comments

Proposal may be at variance to this Principle
The application area occurs within the Ancient Drainage subregion of the Avon Wheatbelt Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). At a broad scale vegetation can be described as proteaceous scrub-heaths, rich in endemics on residual lateritic uplands and derived sandplains; mixed eucalypt, *Allocasuarina huegeliana* and Jam-York Gum woodlands on quaternary alluvials and eluvials (CALM, 2002).

A flora and vegetation survey was undertaken within the application area by Armstrong and Osborne in October 2002. This survey identified two vegetation communities within the application area (Jeanes, 2009). The condition of these vegetation types ranged from 'degraded' to 'excellent' (Jeanes, 2009). During a site visit of the application area, the assessing officer observed that the vegetation had been subject to previous disturbance from adjacent mining activities, in particular the understorey.

The flora survey of the entire mine site recorded a total of 60 flora species (Armstrong and Osborne, 2003). One species of Declared Rare Flora, *Eremophila resinosa* was recorded within the application area (Jeanes, 2009). The presence of this rare flora increases the biodiversity value of the application area. There has been a number of weed species recorded within the application area, most notably Wild Oates (*Avena spp*), Brome

Grass (*Bromus spp*), Maltese Cockspur (*Centaurea melitensis*) and Wards Weed (*Carrichtera annua*) (Jeanes, 2009). This is not unusual given the remnants size, history of land use and proximity to farmland. During a site visit the assessing officer noted many weeds within the application area. The presence of these introduced weed species lowers the biodiversity value of the area proposed to be cleared. Should a permit be granted, it is recommended that a condition be imposed on the permit for the purpose of weed management.

The application area is located within the Westonia Town Common (Crown Reserve 14983) (GIS Database). The Westonia Town Common is a remnant of vegetation covering approximately 4,000 hectares, and is surrounded by cleared agricultural land (Jeanes, 2009). WWF Australia has identified this remnant as being significant due to it being one of the largest 'reserved' areas of Red Morrel (*Eucalyptus longicornis*) woodlands in the intensive land use zone (McLellan, 2007). Red Morrel has been identified within the application area (Jeanes, 2009).

Several species of native mammals have become regionally extinct within the bioregion (CALM, 2002). Mammals are threatened by feral predators, vegetation clearing and fragmentation (CALM, 2002). Based on this the application area could potentially provide significant habitat for mammals along with other native fauna in the local area.

The application area is certainly more diverse than nearby neighbouring agricultural land. However, given it is situated adjacent to disturbed areas and has been degraded itself, it is not likely to be more diverse than other less disturbed areas of the remnant.

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

Methodology

Armstrong and Osborne (2003)
CALM (2002)
Jeanes (2009)
McLellan (2007)
GIS Database
- Cadastre
- Interim Biogeographic Regionalisation of Australia (subregions)

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments

Proposal may be at variance to this Principle

A Level One vertebrate fauna survey was conducted over M77/88 and M77/124 between 28 – 30 October 2002 by Western Wildlife (Jeanes, 2009). This included a desktop review and a site visit to confirm fauna habitats present within the survey area (Jeanes, 2009). An avian fauna survey was also conducted over waste rock dumps and within remnant vegetation on M77/88 and M77/124 during Autumn 2001 and 2002 (Jeanes, 2009). On 15 – 16 September 2007 a 24 hour biological survey of the Westonia Town Common (which the application area lies within) was organised by WWF Australia as part of the 'Westonia BioBlitz' (Jeanes, 2009).

These surveys have identified a number of fauna species of conservation significance that have the potential to occur within the application area. The vegetation within the application area may also be significant for fauna that are not formally protected or listed (McLellan, 2007). Vertebrate fauna species that have been identified as likely to inhabit the application area include the South-west Capet Python (*Morelia spilota imbricata*), Peregrine Falcon (*Falco peregrinus*), Reticulated Velvet Gecko (*Oedura reticulata*)(referred to as Salmon Gum Gecko by Wilcox et al., 2002) and Little Long-tailed Dunnart (*Sminthopsis dolichura*) (Jeanes, 2009).

The South-west Carpet Python (Schedule 4 – Other specially protected fauna, *Wildlife Conservation (Specially Protected Fauna) Notice, 2008*) utilises a wide range of habitats. This species has been recorded from Banksia woodland, Eucalypt woodlands and grasslands (DEC, 2009a). It is possible that the python occurs within the application area and Wilcox et al. (2002) identifies the rocky piles surrounding the old mining areas as suitable habitat. Remnants such as Crown Reserve 14983, where the application area is located, are often important habitat for the species. Whilst the loss of habitat from the proposed clearing will not impact upon the overall conservation of this species, the clearing could have an impact at a local scale.

The Peregrine Falcon Schedule 4 – Other specially protected fauna, *Wildlife Conservation (Specially Protected Fauna) Notice, 2008*) was recorded within the Westonia Town Common during the 'Westonia BioBlitz' (McLellan, 2007). This species has a wide distribution over most of the state and utilise tall trees for nesting, sometimes using old Wedge-tailed Eagle (*Aquila audax*) nests in the wheat belt (Wilcox et al., 2007; Johnstone and Storr, 2004). Individuals are wide ranging and the application area would represent a small fraction of their range (Wilcox et al., 2002). Therefore, the proposed clearing is not likely to significantly impact this species. However, if the Peregrine Falcon was found to be nesting within the application area, the vegetation would be highly significant for this species (Wilcox et al., 2002). No nests have been recorded within the application area.

The Reticulated Velvet Gecko whilst not gazetted as rare or priority listed by the DEC, is known to be a habitat specialist, and exposed to severe habitat fragmentation in the Western Australian wheatbelt (Sarre, 1995). This species occurs mainly in smooth barked eucalyptus remnants (Sarre, 1995). The number of adults of breeding age is small in most populations, suggesting that they may be susceptible to stochastic extinction

pressures (Sarre, 1995). The poor dispersal ability of this species between remnants means that the possibility of recolonisation of a remnant following an extinction event is unlikely (Sarre, 1995). Wilcox et al. (2002) suggests that the species is almost definitely present within the application area and therefore the proposed clearing may impact on the conservation of this species on a local scale.

The Little Long-tailed Dunnart is also not gazetted as rare or priority listed by the DEC. However, this species is believed to have been rendered locally extinct in many patches of remnants throughout sections of the intensive land use zone (McLellan, 2007). This species was recorded within the Westonia Town Common during the 'Westonia BioBlitz' (McLellan, 2007). Whilst this species may be numerous elsewhere in the state, the proposed clearing may have an impact on this species at a local level.

There are two invertebrate species of conservation significance that have been recorded within 10 kilometres of the application area; Tree-stem Trapdoor Spider (*Aganippe castellum*) and Shield-backed Trapdoor Spider (*Idiosoma nigrum*) (GIS Database; DEC, 2009b). Both these species have been recorded at higher densities on the mid to upper slopes of certain banded ironstone formations (Bamford Consulting Ecologists, 2008; 2009). The record of the Shield-backed Trapdoor Spider (Schedule 1 - fauna that is rare or likely to become extinct, *Wildlife Conservation (Specially Protected Fauna) Notice, 2008*) is from a remnant of vegetation separated from the application area by approximately 5 kilometres of agricultural land (GIS Database). Therefore, there is a low probability that this species would utilise the application area. The Tree-stem trapdoor Spider (Schedule 1 - fauna that is rare or likely to become extinct, *Wildlife Conservation (Specially Protected Fauna) Notice, 2008*) was recorded approximately 5.5 kilometres west of the application area within the Westonia Town Common (GIS Database; McLellan, 2007). This species has not been recorded within the application area. However, given it has been recorded within the same remnant as the application area it would not be unexpected for it to be found within the proposed clearing area. Whilst neither species have been recorded within the application area the proposed clearing may result in the loss of some potential habitat for the Tree-stem Trapdoor Spider.

The 'Westonia BioBlitz' recorded a total of 51 avian fauna species within the Westonia Town Common (McLellan, 2007). Of these 51 species 32 were identified as 'declining' or 'remnant dependant' within the wheatbelt (McLellan, 2007). This suggests that the remnant which the application area is located within may be significant for fauna in the local area. However, the majority of the application area is situated adjacent to previous mining activities and the condition of the vegetation has been classified as ranging from 'degraded' to 'excellent' (Jeanes, 2009). During a site visit of the application area the assessing officer noted that the majority of the application area had suffered previous disturbance, especially the understorey. Given this, the vegetation within the application area may not be as significant as surrounding vegetation within the remnant. However, during the site visit the assessing officer observed a dragon species, two bobtails (*Tiliqua rugosa*) and numerous birds. This indicates that even though the vegetation has been degraded by previous mining activities it still has some habitat value for local fauna.

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

Methodology

Bamford Consulting Ecologists (2008)
Bamford Consulting Ecologists (2009)
DEC (2009a)
DEC (2009b)
Jeanes (2009)
Johnstone and Storr (2004)
McLellan (2007)
Sarre (1995)
Wilcox et al. (2002)
GIS Database
- Merredin Westonia 1.4M Orthomosaic – Landgate 1999 (Image)
- Threatened Fauna (DECLIST)

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

Comments

Proposal is at variance to this Principle

A targeted flora survey of the application area by Armstrong and Associates in 2002 and Outback Ecology Services in 2006, 2007, 2008 and 2009 has recorded 11 individuals of the Declared Rare Flora (DRF) *Eremophila resinosa* (Jeanes, 2009).

Given the application area includes the DRF *Eremophila resinosa,* the proposed clearing is at variance with this Principle.

Eremophila resinosa is a small spreading shrub growing to 0.4 to 0.8 metres with a diameter of 0.6 to 1 metre (Jeanes, 2009). Its branches are covered in short, white woolly hairs and sprinkled with resinous wart like projections (Jeanes, 2009). The flowers are blue or purple and are spotted inside (Jeanes, 2009). This species is confined to the central eastern wheatbelt and favours open mallee woodland with mixed *Acacia* scrub understorey (Jeanes, 2009).

Eremophila resinosa is known by DEC from 23 populations of which thirteen populations and five sub-

populations are located within 20 kilometres of the Westonia town site (Jeanes, 2009). The largest known population is adjacent to the existing Edna May Gold Mine. The latest targeted survey in March 2009 recorded a total of 778 individuals in areas surrounding the Edna May Gold Mine (Jeanes, 2009). The removal of 11 individuals of *Eremophila resinosa* from the application area is not likely to have a significant impact on the continued existence of this species (DEC, 2009c).

Species associated with *Eremophila resinosa* include *Eucalyptus salubris, Eucalyptus salmonophloia, Eucalyptus longicornis* and *Acacia hemiteles* which have all been recorded within the application area (Jeanes, 2009). However, the majority of the vegetation of the application area is adjacent to existing disturbed areas and has been subject to some disturbance itself (Jeanes, 2009). Advice from Species and Communities Branch at DEC indicates that given the application area is semi disturbed and there is nearby undisturbed bushland, the vegetation within the application area is not considered necessary for the continued existence of *Eremophila resinosa* (DEC, 2009c).

Working with the Botanic Gardens and Parks Authority, Catalpa Resources have set up an *Eremophila resinosa* translocation program (Jeanes, 2009). The program was established in 2004 and the original translocation site has seen the establishment of over 500 plants (Jeanes, 2009). This population has now become self sustaining. In 2009 there was the planting of two other populations trialling different propagation methods. The assessing officer observed these populations and noted that there were many seedlings present. The two new populations have the potential to recruit over 900 new plants (Outback Ecology pers comm. 20 October 2009). The three sites are situated at different locations around the town to reduce the risk of fire or disease harming all plants at once (Jeanes, 2009). All sites have been fenced off to prevent grazing.

Methodology Jeanes (2009)
DEC (2009c)

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

Comments

Proposal is not likely to be at variance to this Principle

According to available databases, there are no Threatened Ecological Communities (TEC's) within the application area (GIS Database). No vegetation communities described as a TEC were recorded during the vegetation survey of the application area (Jeanes, 2009).

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

Methodology Jeanes (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 may be at variance to this Principle

The application area falls within the Avon Wheatbelt Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 15.17% of the Pre-European vegetation remains (see table) (GIS Database; Shepherd, 2007).

The vegetation of the application area has been mapped as Beard Vegetation Association 536: Medium woodland; morel and rough fruited mallee (*Eucalyptus corrugata*) (Shepherd, 2007).

According to Shepherd (2007) approximately 43.36% of this Beard Vegetation Association remains at a state level and 35.32% remains at a bioregional level. The threshold below which species loss appears to accelerate exponentially at an ecosystem level is 30% (Shepherd et al., 2001), which this Vegetation Association is above.

The application area lies within the Shire of Westonia which has approximately 35.2% of Pre-European vegetation remaining (Shepherd, 2007). Whilst the Shire of Westonia remains above the 30% threshold the Avon Wheatbelt Bioregion and Ancient Drainage subregion are both below 20% and have been extensively cleared. Aerial imagery indicates that the application area is within a remnant of vegetation in an area that has been extensively cleared (GIS Database). Crown Reserve 14983, within which the application area is located, has been identified as being regionally significant as it contains one of the largest 'reserved' red morrel woodlands within the intensive land use zone (McLellan, 2007).

Based on the above, the proposed clearing may be at variance to this Principle. However, the application area is adjacent to disturbed areas and has suffered disturbance itself. Given this, it is not likely to be as significant as other areas of the remnant. The proposed clearing is also relatively small (1.67 hectares) compared to the remaining remnant (approximately 4,000 hectares) and remaining extent of Beard Vegetation Association 536 within the subregion (3,945 hectares).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	% of Pre-European area in IUCN Class I-IV Reserves (and current %)
IBRA Bioregion – Avon Wheatbelt	9,517,109	1,443,690	15.17	Vulnerable	1.75 (7.76)
IBRA Subregion – Ancient Drainage	6,524,190	1,168,614	17.91	Vulnerable	1.82 (6.93)
Local Government – Westonia	331,941	116,841	35.2	Depleted	8.1 (22.37)
Beard veg assoc. – State					
536	13,178	5,714	43.36	Depleted	9.82 (22.59)
Beard veg assoc. – Bioregion					
536	11,170	3,945	35.32	Depleted	11.58 (32.72)
Beard veg assoc. – Subregion					
536	11,170	3,945	35.32	Depleted	11.58 (32.72)

* Shepherd (2007)
** Department of Natural Resources and Environment (2002)

Options to select from: Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment 2002)

Presumed extinct	Probably no longer present in the bioregion
Endangered	<10% of pre-European extent remains
Vulnerable	10-30% of pre-European extent exists
Depleted	>30% and up to 50% of pre-European extent exists
Least concern	>50% pre-European extent exists and subject to little or no degradation over a majority of this area

Methodology
Department of Natural Resources and Environment (2002)
McLellan (2007)
Shepherd et al. (2001)
Shepherd (2007)
GIS Database
- Interim Biogeographic Regionalisation of Australia
- Merredin Westonia 1.4M Orthomosaic – Landgate 1999 (Image)
- Pre-European Vegetation

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments

Proposal is at variance to this Principle

According to available databases, the application area contains a minor non-perennial watercourse in the eastern most section (magazine area) (GIS Database). During a site visit of the application area the assessing officer observed a drainage line within the magazine area. The vegetation survey did not identify any vegetation types associated with a watercourse within the application area (Jeanes, 2009).

Given the application area includes a minor non-perennial watercourse, the proposed clearing is at variance with this Principle.

This watercourse is only likely to flow following intense rainfall events. The assessing officer saw no indication that this watercourse had flowed recently. None of the vegetation within the application area has been identified as being riparian (Jeanes, 2009). Given this, the proposed clearing is not likely to have a significant impact on vegetation growing along this watercourse.

Methodology
Jeanes (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 is not likely to be at variance to this Principle

According to available databases, the soil type within the application area is described as undulating plains with

some low Gilgai's: chief soils seem to be hard alkaline red soils in intimate and complex associations with calcareous earths (GIS Database). These soil types are said to be slowly permeable and have low wind erodability (Schoknecht, 2002). Therefore, the likelihood of erosion during normal rainfall events is low. During a site visit to the application area the assessing officer did not observe any significant soil erosion at the site. There is a low probability of acid sulphate soils occurring within the application area (CSIRO, 2009).

The application area has an annual evaporation rate of over seven times the average annual rainfall (BoM, 2009; GIS Database). Groundwater levels within the application area are 27 – 35 metres below the surface and this could fall even lower following mine dewatering (Jeanes, 2009). Based on this information, an increase in groundwater levels would be minimal, thereby reducing the likelihood of salinity increasing as a result of the proposed clearing.

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

Methodology
BoM (2009)
CSIRO (2009)
Jeanes (2009)
McLellan (2007)
Schoknect (2002)
GIS Database
- Evaporation Isopleths
- Rainfall, Mean Annual
- Soils, Statewide

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments

Proposal is not likely to be at variance to this Principle

According to available databases, the application area is not located within a conservation area or DEC managed land (GIS Database). The nearest known conservation area is the Sandford Nature Reserve located approximately 6 kilometres north-east of the application area (GIS Database). There is also two other un-named nature reserves within 10 kilometres of the application area (GIS Database).

Aerial imagery shows that the remnant within which the application area lies is linked to these nature reserves, primarily by vegetation within road reserves (GIS Database). The proposed clearing is not going to impact on any linkages with these conservation areas.

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

Methodology
GIS Database
- DEC Tenure
- Merredin Westonia 1.4M Orthomosaic – Landgate 1999 (Image)

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

Comments

Proposal is not likely to be at variance to this Principle

According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database).

Rainfall in the area is largely during the winter months with the majority of rain falling between May and October (BoM, 2009). Some rainfall comes from occasional summer thunderstorms brought about by decaying tropical cyclones from the north of the state (McLellan, 2007). The average annual evaporation rate is approximately 2,400 – 2,600 millimetres and the average annual rainfall is 326 millimetres (BoM, 2009; GIS Database). There is one minor non-perennial watercourse within the application area (GIS Database). During normal rainfall events, the proposed clearing would not likely lead to an increase in sedimentation of watercourses within the application area.

The groundwater salinity within the application area has been measured at 25,000 milligrams per litre of Total Dissolved Solids (TDS) (Jeanes, 2009). This is considered to be saline. Given the small scale of the clearing (1.67 hectares) and the depth of the water table (27 – 35 metres below ground level) the proposed clearing is not likely to cause the groundwater quality to deteriorate any further (Jeanes, 2009).

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

Methodology
BoM (2009)
Jeanes (2009)
McLellan (2007)
GIS Database
- Evaporation Isopleths
- Hydrography, linear

- Public Drinking Water Source Areas (PDWSA's)

(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 experiences a Mediterranean climate, however, due to its location to the border of the Interzone it also displays some semi-arid climatic characteristics (McLellan, 2007). The application area receives an annual average rainfall of approximately 326 millimetres, most of which falls during the winter months (BoM, 2009). The rainfall runoff is likely to occur as broad, shallow sheet flow across the site, although the ground topography is likely to promote some channelling of surface water (Jeanes, 2009). Catalpa Resources plans to divert the non-perennial drainage line that runs through the application area (Jeanes, 2009).

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

Methodology

BoM (2009)
Jeanes (2009)
McLellan (2007)

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

Comments

The clearing permit application was advertised by the Department of Mines and Petroleum, inviting submissions from the public. Two submissions were received. The first submission requested photos of the application area. The Department replied sending the requested photos along with a map of the areas applied to be cleared. The second submission called for no native vegetation to be cleared and questioned how the Department monitors clearing, if rehabilitation was possible in the local environment and if it was possible to prevent any further clearing at the mine site. The Department sent a letter responding to the queries, outlining its compliance and assessment procedures and highlighted that other companies have been able to achieve rehabilitation in similarly harsh environments.

There is one native title claim over the area under application; WC99/029 (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 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 throughout 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.

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 Principles (c) and (f), may be at variance to Principles (a), (b), and (e) and is not likely to be at variance to Principles (d), (g), (h), (i) and (j).

Should the permit be granted it is recommended that conditions be imposed for the purposes of weed management, retention of vegetative material and topsoil, 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.