

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3458/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Edna May Operations Pty 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: 2.34 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

Beard Vegetation Associations have been mapped at a 1:250,000 scale for the whole of Western Australia and are useful to look at vegetation extent in a regional context. The following Beard Vegetation Association is located within the proposed clearing area (GIS Database):

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 (Outback Ecology, 2009):

- 1. Mixed Eucalypt Low Forest; and
- 2. Gimlet Low Forest.

Clearing Description

Edna May Operations has applied to clear up to 2.34 hectares for the purpose of widening roads and installing powerlines at the Edna May Gold Mine located approximately 1 kilometre north of Westonia (GIS Database).

The proposal includes the widening of the haul road, installation of power lines, construction of an access track, and modification to the noise bund and change to the Run of Mine ramp access (Outback Ecology, 2009). Clearing will be by mechanical means.

Vegetation Condition

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

to

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).

Comment

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

A number of weed species have been recorded within the application area (Outback Ecology, 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 (Outback Ecology, 2009). The condition of these vegetation types ranged from 'completely degraded' to 'excellent' (Outback Ecology, 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 (Outback

Ecology, 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*) (Outback Ecology, 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 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 (Outback Ecology, 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 (Outback Ecology, 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) McLellan (2007) Outback Ecology (2009) GIS Database

- Cadastre

- IBRA WA (Regions - Sub Regions)

(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 Mining Lease 77/88 and Mining Lease 77/124 between 28 – 30 October 2002 by Western Wildlife (Outback Ecology, 2009). This included a desktop review and a site visit to confirm fauna habitats present within the survey area (Outback Ecology, 2009). An avian fauna survey was also conducted over waste rock dumps and within remnant vegetation on Mining Lease 77/88 and Mining Lease 77/124 during Autumn 2001 and 2002 (Outback Ecology, 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' (Outback Ecology, 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*) (Outback Ecology, 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., 2002; 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 'completely degraded' to 'excellent' (Outback Ecology, 2009). Large parts of the application area has suffered previous disturbance, especially the understorey (Outback Ecology, 2009). Given this, the vegetation within the application area may not be as significant as surrounding vegetation within the remnant. However, during a site visit of adjoining clearing permit CPS 3282/1 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)

Johnstone and Storr (2004)

McLellan (2007)

Outback Ecology (2009)

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

The Declared Rare Flora (DRF) *Eremophila resinosa* is known to occur on Mining Leases 77/88 and 77/124 (Outback Ecology, 2009). There has been one individual of *Eremophila resinosa* recorded within the application area (Outback Ecology, 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 (Outback Ecology, 2009). Its branches are covered in short, white woolly hairs and sprinkled with resinous wart like projections (Outback Ecology, 2009). The flowers are blue or purple and are spotted inside (Outback

Ecology, 2009). This species is confined to the central eastern wheatbelt and favours open mallee woodland with mixed *Acacia* scrub understorey (Outback Ecology, 2009).

Species associated with *Eremophila resinosa* include *Eucalyptus salubris*, *Eucalyptus salmonophloia*, *Eucalyptus longicornis* and *Acacia hemiteles* which have all been recorded within the application area (Outback Ecology, 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 (Outback Ecology, 2009). The removal of the single *Eremophila resinosa* was approved under an application for clearing permit CPS 3282/1. The advice from Species and Communities Branch at DEC indicated 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 (Outback Ecology, 2009). The program was established in 2004 and the original translocation site has seen the establishment of over 500 plants (Outback Ecology, 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 has observed these populations and notes 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 (Outback Ecology, 2009). All sites have been fenced off to prevent grazing.

Methodology DEC (2009c)

Outback Ecology (2009)

(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 (Outback Ecology, 2009).

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

Methodology Outback Ecology (2009)

GIS Database

- Threatened Ecological Boundaries
- Threatened Ecological Sites
- Threatened Ecological Sites Buffered

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments Proposal 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 (2.34 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)

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

>50% pre-European extent exists and subject to little or no degradation over a Least concern

majority of this area

Methodology Department of Natural Resources and Environment (2002)

McLellan (2007) Shepherd et al. (2001) Shepherd (2007) **GIS** Database

- IBRA WA (Regions - Sub Regions)

- Merredin Westonia 1.4M Orthomosaic - Landgate 1999 (Image)

- Pre-European Vegetation

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 may be at variance to this Principle

According to available databases, the application area contains a minor non-perennial watercourse in the eastern most section (magazine access track) (GIS Database). The vegetation survey did not identify any vegetation types associated with a watercourse within the application area (Outback Ecology, 2009). The assessing officer has observed this drainage line during a site visit of the adjoining magazine area in CPS 3282/1. This watercourse is only likely to flow following intense rainfall events (Outback Ecology, 2009). The assessing officer saw no indication that this watercourse had flowed recently. The magazine access track will be constructed to include culverts to ensure that surface water flow will not be interrupted.

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

Methodology Outback Ecology (2009)

GIS Database

- Hydrography, linear

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. There

^{**} Department of Natural Resources and Environment (2002)

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 range from 28 – 40 metres below the surface and this could fall even lower following mine dewatering (Outback Ecology, 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)

Outback Ecology (2009) Schoknecht (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 unnamed 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) (Outback Ecology, 2009). This is considered to be saline. Given the small scale of the clearing (2.34 hectares) and the depth of the water table (28 – 40 metres below ground level) the proposed clearing is not likely to cause the groundwater quality to deteriorate any further (Outback Ecology, 2009).

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

Methodology

BoM (2009)

McLellan (2007)

Outback Ecology (2009)

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 conditions (McLellan, 2007). The application area receives an average annual 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 (Outback Ecology, 2009). Within the immediate vicinity of the application area, any sheet flow is likely to be limited by the bunding surrounding the mine site itself, aside from the magazine access road which will likely become inundated during large rainfall events (Outback Ecology, 2009). The proposed clearing is not likely to increase the incidence or intensity of flooding within this area.

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

Methodology BoM (2009)

McLellan (2007)

Outback Ecology (2009)

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. One submission was received. This submission objected to the clearing and requested photographs of the area applied to be cleared. The Department sent the requested photos on 5 January 2010.

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 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*.

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 Principle (c), may be at variance to Principles (a), (b), (e) and (f), 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, 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.

International Union for the Conservation of Nature and Natural Resources - commonly known as the World **IUCN**

Conservation Union

RIWI Rights in Water and Irrigation Act 1914, Western Australia.

Section 17 of the Environment Protection Act 1986, Western Australia. s.17

TECs Threatened Ecological Communities.

Definitions:

P2

{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.

> 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.

Declared Rare Flora - Extant taxa (= Threatened Flora = Endangered + Vulnerable): taxa which have been R

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}:-

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.

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.

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.