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

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5564/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Atlas Iron Limited**

1.3. Property details

Property: Mining Lease 45/351
Mining Lease 45/381
Mining Lease 45/923
Local Government Area: Town of Port Hedland
Colloquial name: Wodgina DSO Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 27 June 2013

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 for the whole of Western Australia. One Beard vegetation association has been mapped within the application area (GIS Database):

626: Hummock grasslands, shrub-steppe; kanji over soft spinifex & *Triodia brizioides*.

Outback Ecology (2009) and Woodman Environmental (2012) have conducted flora surveys over the application area. Woodman Environmental (2013) has merged the data from both surveys and identified the following six vegetation communities as occuring within the application area:

1. Tall to mid sparse shrubland or isolated clumps of shrubs of *Acacia inaequilatera* and *Grevillea wickhamii* over mid to low open shrubland to isolated clumps of shrubs of *Acacia acradenia* over mid to low mixed closed hummock grassland to open hummock grassland of mixed species of *Triodia* dominated by *Triodia epactia* on red or brown clay loam, sandy loam, loam or sand with ironstone, quartz, or granite fragments on plains to hillocks.

2. Low closed hummock grassland to open hummock grassland of *Triodia wiseana* often with *Triodia* aff. *basedowii* with tall to low isolated clumps of shrubs of mixed *Acacia* species dominated by *Acacia acradenia* and *Acacia inaequilatera* on brown sandy loam with granite or or calcrete fragments on lower to upperslopes.

3. Low isolated clumps of trees of mixed species (*Terminalia supranitifolia* (P3), *Eucalyptus leucophloia* and *Ficus brachypoda*) over tall to low open shrubland to isolated clumps of shrubs of *Acacia acradenia* and *Grevillea wickhamii* over low isolated clumps of shrubs of *Indigofera monophylla* over low open hummock grassland of *Triodia wiseana* and *Triodia epactia* on red loam with ironstone course fragments on midslopes to crests.

4. Mid to low closed hummock grassland to open hummock grassland of *Triodia wiseana* with tall to low isolated clumps of shrubs of mixed *Acacia* species (*Acacia acradenia, Acaica inaequifolia* and *Acaica pyrifolia* var. *pyrifolia)* on brown sandy loam or red loam with granite or ironstone coarse fragments on very steep to precipitous upperslopes and hillocks.

5. Low open woodland to isolated clumps of trees of *Corymbia hamersleyana* and/or *Eucalyptus victrix* over tall open shrubland to isolated clumps of shrubs of mixed *Acacia* species dominated by *Acacia tumida* var. *pilbarensis* over mid to low open shrubland to isolated clumps of shrubs of *Indigofera monophylla*, *Cajanus cinereus*, *Phyllanthus maderaspatensis* and *Notoleptopus decaisnei* over mid isolated clumps of tussock grasses of *Cymbopogon ambiguus* over mid to low hummock grassland to isolated clumps of hummock grasses of mixed *Triodia* species dominated by *Triodia epactia* on red or brown loam, clay loam or sandy loam on major drainage lines.

6. Tall shrubland to isolated clumps of shrubs of *Acacia ancistrocarpa* and *Acacia tumida* var. *pilbarensis* over

mid to low hummock grassland to isolated clumps of hummock grasses of mixed *Triodia* species dominated by *Triodia epactia* with low isolated clumps of trees of *Corymbia hamersleyana* on brown sandy loam on minor drainage lines and plains.

Clearing Description Atlas Iron Limited has applied to clear up to 173 hectares of native vegetation, within an application area of approximately 221 hectares. The purpose of the proposed clearing is for the construction and operation of the Wodgina DSO Project – Stage 3. This includes mine pits, a waste rock dump, roads, topsoil storage and water storage.

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

Comment The application area is located in the Pilbara region of Western Australia and is situated approximately 95 kilometres South of Port Hedland.

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 at variance to this Principle

The application area is located within the Chichester subregion of the Pilbara Interim Biogeographic Regionalisation for Australia IBRA bioregion (GIS Database). At a broad scale, the vegetation can be described as shrub steppe characterised by *Acacia inaequilatera* over *Triodia wiseana* hummock grasslands on plains, while *Eucalyptus leucophloia* tree steppes occur on ranges (CALM, 2002).

One Priority flora species, *Terminalia supranitifolia* (Priority 3), has been recorded within the application area (Eco logical, 2013). A total of 439 individuals from 216 locations have been recorded within the application area (Eco Logical, 2013). A further 490 individuals from 171 locations have been recorded in areas adjacent to the application area (Eco Logical, 2013). This species is known from 35 locations on Florabase (Western Australian Herbarium, 2013) from Karratha to south of Pannawanica. While this is a considerable range extension to the east, it is likely that this species would occur between Karratha and the application area. While the proposed clearing may have some impact to local populations, it is considered unlikely to impact on the conservation of this species.

According to available databases there are no Threatened or Priority Ecological Communities within the application area (GIS Database).

Flora surveys over the application area have identified five weed species, *Aerva javanica, Cenchrus ciliaris, Flaveria trinervia, Passiflora foetida* and *Trianthema portulacastrum* (Eco Logical, 2013). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A fauna impact assessment of the application area was conducted by Outback Ecology (2013) based on numerous fauna surveys over the application area and the broader project area. This assessment identified six habitats within the application area with two, Rocky Ridge and Gorge (26 hectares) and Drainage Line (21 hectares) being of high significance for conservation significant fauna species (Outback Ecology, 2013).

As the application area contains a large proportion of habitat considered to be of high conservation significance, it is considered likely that it contains a high level of faunal diversity compared to other parts of the Pilbara Bioregion.

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

Methodology

CALM (2002)
Eco Logical (2013)
Ouback Ecology (2013)
Western Australian Herbarium (2013)
GIS Database:
- IBRA WA (regions – subregions)
- Threatened Ecological Sites Buffered

(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 at variance to this Principle

A fauna impact assessment of the application area was conducted by Outback Ecology (2013) based on numerous fauna surveys over the application area and the broader project area. This assessment identified six habitats within the application area (Outback Ecology, 2013):

- Ironstone Ridge Top;

- Rocky Ridge and Gorge;
- Stony Plain;
- Scree Slope;
- Drainage Line; and
- Rocky Foothills.

The Rocky Ridge and Gorge, and Drainage Line habitats are considered significant (Eco Logical, 2013). Of particular significance are the microhabitat features such as rocky outcroppings, caves, crevices and overhangs present within the Rocky Ridge and Gorge habitat, and waterpools, riparian vegetation and large trees present within the Drainage Line habitat (Eco Logical, 2013).

Approximately 21 and 26 hectares of the Drainage Line, and Rocky Ridge and Gorge habitats, respectively, occur within the application area (Eco Logical, 2013). Both the Drainage Line, and Rocky Ridge and Gorge habitats types have been identified outside of the application area with 92 and 91 hectares, respectively, surveyed (Outback Ecology, 2013), however the quality of the Rocky Ridge and Gorge habitat is considered to be of lower quality outside of the application area (Outback Ecology, 2013). Connectivity will be retained to allow the continuation of access between habitats within and outside of the site, and it is likely that individuals will migrate to adjacent habitats (Eco Logical, 2013).

The following five conservation significant fauna species have been identified within the application area with a further 15 considered possible or likely to occur (Outback Ecology, 2013):

- Northern Quoll (*Dasyurus hallucatus*) listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and Schedule 1 under the *Wildlife Conservation Act 1950* (WC Act). This species was recorded at three location within the application area and is known from the Rocky Ridge Gorge habitat which occupies approximately 26 hectares of the application area. A further seven records of this species are known in the vicinity of the application area and multiple locations are known at nearby Wodgina. The Department of Environment and Conservation (DEC) has advised that the occurrence of this species is not significant within the local area as many other populations have been recorded nearby and suitable habitat is common;

- Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*) listed as Vulnerable under the EP Act and Schedule 1 under the WC Act. Five night-time feeding roost caves have been recorded within the application area. While these caves have the potential to be utilised as day-time roost caves, numerous surveys have not identified these caves as being used for this purpose. A further ten cave locations for this species have been identified outside of the application area. While the proposed clearing will impact on significant feeding habitat for this species, no significant day-time roost will be disturbed;

- Ghost Bat (*Macroderma gigas*) listed as Priority 4 by DEC. Recorded at eight night-time feeding roost habitats within the application area. While these locations have the potential to be utilised as day-time roosts, no records have been obtained to show that they are being used for this purpose. A further two locations of this species have been recorded within the vicinity of the application area and numerous records are known at nearby Wodgina;

- Western Pebble-mound Mouse (*Pseudomys chapmani*) listed as Priority 4 by DEC. This species has been identified as occurring directly adjacent to the application area and 28 hectares of suitable habitat for this species has been recorded within the application area. This species is considered widespread and suitable habitat is well represented outside of the application area (DEC, 2013). It is therefore considered that the significance of this occurrence is low; and

- Rainbow Bee-eater (*Merops ornatus*) listed as Migratory under the EPBC Act and Schedule 1 under the WC Act. This species is common and widespread locally and regionally. The proposed clearing is considered unlikely to impact on the conservation status of this species.

The proposed clearing is likely to impact upon Northern Quoll, Pilbara Leaf-nosed Bat and Ghost Bat at a local scale. Atlas Iron Limited has committed to management measures under their Significant Species Management Plan (Coffey, 2012) to mitigate impacts to these species. Continuous monitoring of known populations of these species will be conducted and rehabilitation of significant habitat is to be included in the Mine Closure Plan. While there will be local impacts to these species, the proposed clearing is not likely to impact on the conservation of these species at a regional level.

The project was referred to the Department of Sustainability, Environment, Water, Populations and Communities (DSEWPaC) by Atlas Iron Limited on 15 March 2013. On 19 April 2013 DSEWPaC advised that the proposal is not a controlled action if undertaken in a particular manner. DSEWPaC required a maximum disturbance of 173 hectares within the project area, all activities to be conducted in accordance with the Significant Species Management Plan (Wodgina DSO Project, Atlas Iron Limited & Coffey Environments Pty Ltd, January 2012 (CR 8138_9_v4)) within the Stage 3 Project Area and additional 50 metre buffer zones for three Pilbara Leaf-nosed Bat caves.

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

Methodology DEC (2013)
Outback Ecology (2013)

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

Comments

Proposal is not likely to be at variance to this Principle

According to available databases, there are no Threatened Flora within the application area (GIS Database). Flora and vegetation surveys of the application area have been conducted by Outback Ecology (2009) and Woodman Environmental (2012). These surveys did not identify any Threatened Flora species within the application area (Outback Ecology, 2009; Woodman, 2012).

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

Methodology

Outback Ecology (2009)
Woodman Environmental (2012)
GIS Database:
- Threatened and Priority Flora

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

Comments

Proposal is not likely to be at variance to this Principle

There are no known records of Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest known TEC is located approximately 130 kilometres south west of the application area (GIS Database). At this distance there is little likelihood of any impact to the TEC 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

GIS Database:
- 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 is not at variance to this Principle

The application area is located within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). Approximately 99.58% of the pre-European vegetation remains within the Pilbara (Government of Western Australia, 2013).

The vegetation within the application area has been broadly mapped as Beard vegetation association:

626: Hummock grasslands, shrub-steppe; kanji over soft spinifex & *Triodia brizioides*

Approximately 99.55% of Beard vegetation association 626 remains within the Pilbara bioregion (see table below) (Government of Western Australia, 2013).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Extent in DEC Managed Lands %*
IBRA Bioregion - Pilbara	17,804,427	17,729,352	~99.58	Least Concern	~8.39
Beard vegetation associations - State					
626	117,724	117,198	~99.55	Least Concern	~15.66
Beard vegetation associations - Bioregion					
626	117,724	117,198	~99.55	Least Concern	~15.66

* Government of Western Australia (2013)
** Department of Natural Resources and Environment (2002)

The vegetation within the application area is not considered to be a remnant of vegetation in an area that has been extensively cleared.

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

Methodology Department of Natural Resources and Environment (2002)
Government of Western Australia (2013)
GIS Database:
- IBRA WA (regions – subregions)
- 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 there are no permanent wetlands or watercourses within the application area, however there are several minor non-perennial watercourses (GIS Database).

Flora and vegetation surveys of the application area identified two vegetation communities occurring in association with non-perennial watercourses within the application area (Woodman Environmental, 2013). According to vegetation mapping of the broader project area, these communities are both present and relatively common in areas outside of the application area (Woodman Environmental, 2013). Impact on these communities as a result of the proposed clearing is therefore considered considered unlikely to be significant.

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

Methodology Woodman Environmental (2013)
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**
The application area intersects the Capricorn Land System (GIS Database). The stony nature of this land system confers resistance to erosion (Van Vreeswyk et al., 2004).

In 2012, Outback Ecology (2012) conducted a baseline assessment of soils in the Hercules project area.

Three distinct soil-landform associations, Low Hills, Ridge Top and Rocky Slope, were identified within the application area (Outback Ecology, 2012). The surface soils were generally shallow sands to sandy loams, reflecting some variation in particle size of the soils fraction (Outback Ecology, 2012).

The surface soils generally exhibited a tendency for clay dispersion following disturbance of the <2 millimetre soil fraction (Outback Ecology, 2012). This indicates that these materials may be potentially problematic once disturbed and re-deposited, however the high amount of coarse material present within all soils sampled is likely to mitigate against soil erosion of the soil surface, as it does in the undisturbed environment (Outback Ecology, 2012).

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

Methodology Outback Ecology (2012)
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 not located within a conservation area (GIS Database). The nearest conservation area is Mungaroona Nature Reserve, located approximately 50 kilometres west north-west of the application area (GIS Database). At this distance the proposed clearing is considered unlikely to impact on the values of any conservation areas.

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

Methodology GIS Database:
- DEC Tenure

(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**
AECOM (2013) conducted a groundwater hydrological assessment over the Hercules deposit. This survey identified that the groundwater levels in the Wodgina area are inferred to lie between 200 metres Australian

Height Datum (mAHD) to 210mAHD (AECOM, 2013). The elevations of the proposed mining pits range from around 275mAHD to 225mAHD (AECOM, 2013). As the groundwater is at least 15 metres below the proposed base of the pit, the proposed activities are considered unlikely to impact upon the quality of underground water.

According to available databases, there are no permanent wetlands or watercourses within the application area (GIS Database). The average annual rainfall for the application area is approximately 328 millimetres and the average annual evaporation rate is approximately 3,600 millimetres (BoM, 2013; GIS Database). Any surface water pooling is therefore considered likely to be short lived.

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

Methodology

AECOM (2013)
BoM (2013)
GIS Database:
- Evaporation Isopleths
- Hydrography, linear

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

Comments

Proposal is not likely to be at variance to this Principle

The application area experiences a semi-desert tropical climate with summer cyclonic or thunderstorm rainfall, with an annual average rainfall of approximately 328 millimetres per year (CALM, 2002; Eco Logical, 2013; BoM, 2013). Based on an average annual evaporation rate of 3,600 millimetres (GIS Database), there is likely to be little surface flow during normal seasonal rains. Whilst large rainfall events may result in flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding.

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

Methodology

BoM (2013)
CALM (2002)
Eco Logical (2013)
GIS Database:
- Evaporation Isopleths

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

Comments

There is one native title claim over the area under application: WC99/3 (GIS Database). This claim was registered with the NNTT on behalf of the claimant group on 22 April 1999. However, the mining tenure 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 several registered Aboriginal Sites of Significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

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

The clearing permit application was advertised on 18 March 2013 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to this application.

Methodology

GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims - Registered with the NNTT

4. References

AECOM (2013) Wodgina DSO Project Hercules Deposit. Phase 1 Hydrogeological Assessment. Unpublished report prepared for Atlas Iron Limited dated March 2013.

BoM (2013) – Climate Statistics for Australian Locations. A Search for Climate Statistics for Indee, Australian Government Bureau of Meteorology, Viewed 20 May 2013, <http://www.bom.gov.au/climate/data/>.

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management, Western Australia.

DEC (2013) Species and Communities Branch advice received 31 May 2013.

Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.

Eco Logical (2013) Native vegetation Clearing Permit Application. Wodgina DSO Project – Stage III (Hercules Deposit). Unpublished report prepared for Atlas Iron Limited dated March 2013.

Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. WA Department of Environment and Conservation, Perth.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Outback Ecology (2009) Wodgina DSO Project Flora and Vegetation Assessment. Unpublished report prepared for Atlas Iron Limited dated October 2009.

Outback Ecology (2012) Atlas Iron Limited Hercules DSO Project Soil and Waste Characterisation. Unpublished report prepared for Atlas Iron Limited dated August 2012.

Outback Ecology (2013) Atlas Iron Limited Wodgina Expansion Project – Stage III Terrestrial Vertebrate Fauna Impact Assessment. Unpublished report prepared for Atlas Iron Limited dated February 2013.

Van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A. and Hennig, P. (2004) Technical Bulletin - An Inventory and Condition Survey of the Pilbara Region, Western Australia, No. 92. Department of Agriculture, Government of Western Australia, Perth, Western Australia.

Western Australian Herbarium (2013) FloraBase – the Western Australian Flora. Department of Environment and Conservation, Viewed 5 June 2013. http://florabase.dec.wa.gov.au/.

Woodman Environmental (2012) Atlas iron Limited Flora and Vegetation Studies for the Hercules Project. Unpublished report for Atlas Iron Limited dated November 2012.

Woodman Environmental (2013) Atlas Iron Limited Hercules DSO Project Conservation Significant Flora Assessment. Unpublished report for Atlas Iron Limited dated January 2013.

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), 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 (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
EP Act	Environmental Protection Act 1986, Western Australia
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
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 Act	Rights in Water and Irrigation Act 1914, Western Australia
s.17	Section 17 of the Environment Protection Act 1986, Western Australia
TEC	Threatened Ecological Community

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.