



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4337/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: BHP Billiton Iron Ore Pty Ltd

1.3. Property details

Property: Iron Ore (Mount Goldsworthy) Agreement Act 1964, Mineral Lease 281SA (AML 70/281)
Local Government Area: Shire of East Pilbara
Colloquial name: REG Central Camp Project

1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
|--------------------|-----------|--------------------|-----------------------------------------|
| 70 | | Mechanical Removal | Mine Camp and associated infrastructure |

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 2 June 2011

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 scale of 1:250,000 for the whole of Western Australia. Two Beard Vegetation Associations are located within the application area (GIS Database):

Beard Vegetation Association 18: low woodland; Mulga (*Acacia aneura*); and

Beard Vegetation Association 82: hummock grasslands, low tree steppe; Snappy Gum over *Triodia wiseana*.

Two flora and vegetation surveys have been conducted that cover the application area. Woodman Environmental Consulting conducted a flora and vegetation assessment from April to June 2008 that covered the northern section of the application area whilst ENV Australia conducted a flora, vegetation and fauna assessment in November and December 2009 that covered a 2,300 hectare area and included the southern section of the application area. ENV Australia (2009) identified the following two vegetation units within the southern portion of the application area:

- **Acacia High Open Shrubland**
High open shrubland of *Acacia aneura* var. *aneura*, *Acacia aneura* var. *pilbarana* and *Acacia pruinocarpa* with very open tussock grassland of *Aristida holathera* var. *holathera*, *Themeda triandra* and *Aristida contorta* on red-brown loam on plains.
- **Triodia Open Hummock Grassland**
Open hummock grassland of *Triodia wiseana*, *Triodia pungens* and *Triodia epactia* with open shrubland of *Acacia pruinocarpa*, *Acacia aneura* var. *conifera* and *Acacia maitlandii* with scattered low trees of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia deserticola* subsp. *deserticola* on red-brown loam on rocky hillslopes.

Woodman Environmental Consulting (2009) identified the following five vegetation communities within the northern portion of the application area:

- Open low woodland of *Eucalyptus leucophloia*, with occasional *Eucalyptus gamophylla* over open low scrub to scrub of mixed species including *Hakea chordophylla*, *Acacia* spp. and *Senna* spp. over a hummock grassland of *Triodia* spp. on red-orange loam from plains to hill crests.
- Open low woodland of *Eucalyptus leucophloia* and *Corymbia hamersleyana* over *Eriachne* spp. and/or *Cymbopogon* spp. and *Triodia* spp. on the sides of gullies, hill slopes and hill crests.
- Open low woodland of *Eucalyptus leucophloia* and *Corymbia hamersleyana* over open dwarf scrub of *Dodonaea* spp. over *Themeda* sp. Mt Barricade and/or *Eriachne mucronata*, *Triodia wiseana* or *Triodia epactia* on red-orange or red-brown clay loam in gorges and mid to upper slopes.
- Open tree Mallee of *Eucalyptus socialis*, *Eucalyptus xerothermica* and/or *Eucalyptus trivalvis* over scrub of mixed *Acacia* spp. over *Triodia pungens* and mixed grass species on red-orange clay loam on lower slope

to creeklines.

- Thicket to open scrub of *Acacia aneura* with *Acacia pachyacra* or *Acacia pruinocarpa* over mixed grass species of *Aristida* spp. and *Themeda* spp. and herbs on flood plains to lower slopes.

Clearing Description

BHP Billiton Iron Ore Pty Ltd (BHPBIO) proposes to clear up to 70 hectares of native vegetation, within an area totalling approximately 292 hectares (BHPBIO, 2011). The application area is located approximately 100 kilometres north-west of Newman (GIS Database).

The purpose of the proposed clearing is to construct a Resource Evaluation Group central camp and associated infrastructure (BHPBIO, 2011). Vegetation will be cleared by dozer / excavator and vegetation and topsoil will be stockpiled for rehabilitation purposes.

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 rating is derived from flora and vegetation surveys conducted by ENV Australia (2009) and Woodman Environmental Consulting (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 is not likely to be at variance to this Principle

The application area is located within the Hamersley subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Hamersley subregion is described by CALM (2002) as being rich in *Acacia*, *Triodia*, *Ptilotus* and *Sida* species.

Two flora and vegetation surveys have been conducted that cover the application area. Woodman Environmental Consulting conducted a flora and vegetation assessment from April to June 2008 that covered the northern section of the application area, whilst ENV Australia conducted a flora, vegetation and fauna assessment from November to December 2009 that covered a 2,300 hectare area, including the southern section of the application area. These surveys identified a total of 222 taxa, comprising of 36 families and 95 genera (BHPBIO, 2011). The most common families within the survey area were *Fabaceae* (52 taxa), *Poaceae* (34 taxa) and *Malvaceae* (27 taxa) (BHPBIO, 2011).

BHPBIO (2011) has reported that a total of two weed species have been recorded within the application area; Buffel Grass (*Cenchrus ciliaris*) and Spiked Malvastrum (*Malvastrum americanum*). The presence of weed species lowers the biodiversity value of the proposed clearing area. It is important to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. The risk of spreading weed species can be mitigated by imposing a condition for the purpose of weed management.

The vegetation and landforms within the application area are well represented within the Pilbara bioregion (ENV Australia, 2009; Woodman Environmental Consulting, 2009). No Declared Rare Flora, Threatened Ecological Communities or Priority Ecological Communities were recorded within the application area during the flora and vegetation assessments (ENV Australia, 2009; Woodman Environmental Consulting, 2009). Sections of the application area were classified as being completely degraded (ENV Australia, 2009; Woodman Environmental Consulting, 2009).

One Priority 3 flora species was recorded within the application area; *Rhagodia* sp. Hamersley (BHPBIO, 2011). This species was recorded at five locations in proximity to the proposed camp location; one plant was recorded in the central area of the proposed camp and four were recorded immediately to the east and south of the proposed camp (BHPBIO, 2011). All four of these plants fall outside of the design footprint and BHPBIO (2011) states that the locations of these plants will be flagged in conjunction with conservation flora avoidance and awareness training implemented in site inductions. There are numerous records of this species throughout the Pilbara and BHPBIO (2011) report is as being quite locally abundant in some areas.

ENV Australia (2009) conducted a fauna assessment of a 2,300 hectare area in November and December 2009. The survey area included the application area and consisted of a desktop study and a site reconnaissance (ENV Australia, 2009). ENV Australia (2009) identified a total of 44 vertebrate fauna species during the site reconnaissance, whilst the desktop study identified a total of 291 vertebrate fauna species that could potentially occur within the survey area. Given the size of the survey area (2,300 hectares) compared to the size of the application area (292 hectares), the area under application is expected to have a much lower faunal diversity than indicated above.

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

Methodology BHPBIO (2011)

CALM (2002)
ENV Australia (2009)
Woodman Environmental Consulting (2009)
GIS Database
- IBRA WA (Regions - 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 is not likely to be at variance to this Principle

ENV Australia (2009) conducted a fauna assessment of a 2,300 hectare area in November and December 2009. The survey area included the application area and consisted of a desktop study and a site reconnaissance (ENV Australia, 2009). ENV Australia (2009) mapped the following two habitat types as occurring within the application area (BHPBIO, 2011):

Alluvial Plain

The vegetation is of higher complexity consisting of a sparse to moderate woodland canopy of Mulga (*Acacia* sp.) and Mallee (*Eucalyptus* sp.) ranging from 5 – 7 metres in height. There was also a sparse to thick groundcover up to 1 metre in height consisting of Spinifex (*Triodia*), or in more disturbed area, Buffel Grass (*Cenchrus ciliaris*). The build up of vegetation debris provides further suitable microhabitats such as fallen timber and leaf litter that can be utilised by terrestrial and arboreal fauna. There was a scattered cover of small surface rocks, and very little other rock formations in this habitat type. This therefore provides a different array of niches for fauna species to exploit. Conservation significant fauna species likely to utilise this habitat type are the Australian Bustard (*Ardeotis australis*) and Bush Stone-curlew (*Burhinus grallarius*), and to a lesser extent the Grey Falcon (*Falco hypoleucos*) and the Peregrine Falcon (*Falco peregrinus*) as part of a larger home range. This habitat is of moderate value (BHPBIO, 2011).

Hill Slope

This habitat type generally has a vegetation structure that is very simple, consisting of sparse shrubs over grasses. The overstorey consists of scattered trees (*Eucalyptus leucophloia*), with an open mid-storey of shrubs (*Acacia* spp.) and a moderate groundcover of Spinifex (*Triodia* spp.) of around 0.5 metres in height. Due to the simple vegetation structure, the number of arboreal lizards and bird species in these habitats is likely to be restricted, as is (to a lesser extent) the number of ground-dwelling reptiles and mammals. The lack of groundcover and the compact nature of the substratum would also limit the number of ground-dwelling and burrowing species of reptiles and mammals likely to be found in this habitat. There were few if any hollow-bearing trees in this habitat. Small and large surface rocks were common in this habitat type and the soil was typically stony. The Western Pebble-mound Mouse (*Pseudomys chapmani*) is the only conservation significant fauna species to depend heavily on this habitat type; however no mounds indicative of this species presence were recorded within the application area. Due to the low diversity of microhabitats, low complexity of vegetation and minimal use by conservation significant species this habitat type is considered to be of low habitat value (BHPBIO, 2011).

Given the above, and that the habitat types present within the application area are well represented within the fauna survey area and the Pilbara regions generally (ENV Australia, 2009), the vegetation of the application area is unlikely to represent significant habitat for any fauna species.

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

Methodology BHPBIO (2011)
ENV Australia (2009)

(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

Two flora and vegetation surveys have been conducted that cover the application area. Woodman Environmental Consulting (2009) conducted a flora and vegetation assessment from April to June 2008 that covered the northern section of the application area whilst ENV Australia (2009) conducted a flora, vegetation and fauna assessment from November to December 2009 that covered a 2,300 hectare area, including the southern section of the application area.

No Declared Rare Flora species were recorded within the survey area during the flora assessments (Woodman Environmental Consulting, 2009; ENV Australia, 2009).

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

Methodology ENV Australia (2009)
Woodman Environmental Consulting (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

There are no known Threatened Ecological Communities (TECs) within the area applied to clear (GIS Database). The nearest known TEC is located approximately 100 kilometres south-east of the application area (GIS Database).

ENV Australia (2009) and Woodman Environmental Consulting (2009) report that no TECs were identified within the application area during the flora and vegetation surveys.

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

Methodology ENV Australia (2009)
Woodman Environmental Consulting (2009)
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 falls within the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). Shepherd (2009) reports that approximately 99.9% of the pre-European vegetation still exists within the Pilbara bioregion (see table below). The vegetation within the application area is recorded as the following Beard Vegetation Associations (Shepherd, 2009):

Beard Vegetation Association 18: low woodland; Mulga (*Acacia aneura*);

Beard Vegetation Association 82: hummock grasslands, low tree steppe, Snappy Gum over *Triodia wiseana*.

According to Shepherd (2009) approximately 100% of these vegetation associations still exist within the bioregion (see table below).

The vegetation within the application area is not a remnant of native vegetation within an area that has been extensively cleared.

| | Pre-European area (ha)* | Current extent (ha)* | Remaining %* | Conservation Status** | Pre-European % in IUCN Class I-IV Reserves |
|-------------------------------------------|-------------------------|----------------------|--------------|-----------------------|--------------------------------------------|
| IBRA Bioregion - Pilbara | 17,804,193 | 17,785,001 | ~99.9 | Least Concern | ~6.3 |
| Beard vegetation associations - State | | | | | |
| 18 | 19,892,305 | 19,890,275 | ~99.9 | Least Concern | ~2.1 |
| 82 | 2,565,901 | 2,565,901 | ~100 | Least Concern | ~10.2 |
| Beard vegetation associations - Bioregion | | | | | |
| 18 | 676,557 | 676,557 | ~100 | Least Concern | ~11.6 |
| 82 | 2,563,583 | 2,563,583 | ~100 | Least Concern | ~10.3 |

* Shepherd (2009)

** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd (2009)
GIS Database
- IBRA WA (Regions - Subregions)

(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 may be at variance to this Principle

According to available databases there are no permanent watercourses or waterbodies within the application area, however there are several minor ephemeral drainage lines (GIS Database). These watercourses are only likely to flow following significant rainfall.

Woodman Environmental Consulting (2009) reports one vegetation unit associated with watercourses, as occurring within the application area:

- Open tree Mallee of *Eucalyptus socialis*, *Eucalyptus xerothermica* and/or *Eucalyptus trivalvis* over scrub of mixed *Acacia* spp. over *Triodia pungens* and mixed grass species on red-orange clay loam on lower slope to creeklines.

Vegetation mapping indicates that only a very small proportion of this vegetation unit falls within the application area (Woodman Environmental Consulting, 2009). The proposed work is therefore unlikely to have a significant impact upon any vegetation growing in association with a watercourse.

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

Methodology Woodman Environmental Consulting (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

The application area has been mapped as occurring within the Boolgeeda, Newman and Wannamunna land systems (GIS Database).

Van Vreeswyk et al. (2004) states that these land systems are generally not susceptible to soil erosion.

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

Methodology 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 proposed clearing is not located within any conservation areas (GIS Database). The nearest Department of Environment and Conservation managed land is Karijini National Park located approximately 20 kilometres west of the application area (GIS Database).

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

The application area is not located within a Public Drinking Water Source Area (GIS Database).

The application area is located within an arid environment. No permanent waterbodies or watercourses occur within the application area, however there are several ephemeral drainage lines. Surface water runoff is only likely to occur during and immediately following significant rainfall events. The removal of 70 hectares of native vegetation and the shallow ground disturbance related to this clearing is unlikely to cause deterioration in the quality of surface or underground water.

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

Methodology GIS Database
- Hydrographic Catchments - Catchments
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)

(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

According to available databases there are several minor, ephemeral watercourses within the application area (GIS Database).

Natural flood events occur seasonally in the Pilbara region as a result of cyclonic activity and sporadic thunderstorm activity (BHPBIO, 2011). The ephemeral watercourses within the application area could experience natural seasonal flooding from the run off of surface water following significant rainfall events, however the proposed clearing of 70 hectares is unlikely to increase the incidence or intensity of flood events.

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

Methodology BHPBIO (2011)
GIS Database
- Hydrography, linear

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

Comments

There are two Native Title claims (WC96/61 and WC98/62) over the area under application (GIS Database). These claims have been registered with the Native Title Tribunal on behalf of the claimant group. 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 was advertised by the Department of Mines and Petroleum on 9 May 2011, inviting submissions from the public. No submissions were received.

Methodology GIS Database
- Aboriginal Sites of Significance
- Native Title Claims

4. References

- BHP Billiton (2011) Clearing Permit Application Supporting Documentation. BHP Billiton Iron Ore Pty Ltd.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- 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.
- ENV Australia (2009) South Flank NVCP Extension Flora, Vegetation and Fauna Assessment. Unpublished report. ENV Australia Pty Ltd, Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.
- Van Vreeswyk, A.M.E., Payne, A.L., Hennig, P. and Leighton, K.A. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia. Department of Agriculture, Western Australia.
- Woodman Environmental Consulting (2009) Flora and Vegetation Assessment: Area C Mining Operation Environmental Management Plan (Revision 4) A, D, P1 and P3 Deposits. Unpublished Report. Woodman Environmental Consulting Pty Ltd, Western Australia.

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.