



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 4353/2  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: **Hamersley Iron Pty Ltd**

### 1.3. Property details

Property: *Iron Ore (Hamersley Range) Agreement Act 1963*, Special Lease for Mining Operations  
3116/4984 (I 195323 L), Lot 13 on Deposited Plan 47815  
Miscellaneous Licence 47/47  
Local Government Area: Shire of Roebourne  
Colloquial name: Ibis-Koala Rail Siding

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
33		Mechanical Removal	Geotechnical Investigations, Rail Sidings and Associated Activities

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 16 February 2012

## 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 and are useful to look at vegetation in a regional context. The following Beard vegetation associations have been mapped within the application area (GIS Database):

607: Hummock grasslands, low tree steppe; snappygum & bloodwood over soft spinifex and *Triodia wiseana*; and  
646: Hummock grasslands, shrub steppe; snakewood over *Triodia basedowii*.

A flora and vegetation survey of the application area was conducted by Biota Environmental Sciences between 12 and 19 May 2010. The following 20 vegetation types were mapped within the application area (Biota Environmental Sciences, 2010):

#### Vegetation of Stony Hills and Plains

- EIAbTa:** *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia bivenosa* scattered shrubs over *Triodia angusta* hummock grassland;
- ChAaAtrTe:** *Corymbia hamersleyana* scattered low trees over *Acacia ancistrocarpa*, *A. trachycarpa* tall open shrubland over *Triodia epactia* hummock grassland;
- ChAaAtrTeCE:** *Corymbia hamersleyana* scattered low trees over *Acacia ancistrocarpa*, *A. trachycarpa* tall open shrubland over *Triodia epactia* open hummock grassland with *\*Cenchrus ciliaris*, *\*C. setiger* open tussock grassland;
- ChAaAbTw:** *Corymbia hamersleyana* low open woodland over *Acacia ancistrocarpa*, *A. bivenosa* shrubland over *Triodia wiseana* hummock grassland;
- ChAaAatTw:** *Corymbia hamersleyana* scattered low trees over *Acacia ancistrocarpa*, *A. atkinsiana* tall shrubland over *Triodia wiseana* hummock grassland;
- Tw:** *Triodia wiseana* hummock grassland;
- AxTw:** *Acacia xiphophylla* tall shrubland over *Triodia wiseana* very open hummock grassland;
- AxTe:** *Acacia xiphophylla* tall shrubland over *Triodia epactia* very open hummock grassland;

#### Vegetation of Clayey Plains

- ERAx:** *Eragrostis xerophila* open tussock grassland;

10. **PANdICsARI:** *Panicum decompositum*, *Dichanthium sericeum* subsp. *sericeum*, *Aristida latifolia* tussock grassland;

#### Vegetation of Drainage Areas

11. **EvMgG:** *Eucalyptus victrix* woodland over *Melaleuca glomerata* tall open shrubland over mixed closed tussock grassland;

12. **EvG:** *Eucalyptus victrix* low open woodland over mixed closed tussock grassland;

13. **EvAiEUa:** *Eucalyptus victrix* woodland over *Acacia inaequilatera* open shrubland over *Eulalia aurea* tussock grassland;

14. **ChAtuTeCE:** *Corymbia hamersleyana* low open woodland over *Acacia tumida* var. *pilbarensis* tall shrubland over *Triodia epactia* very open hummock grassland and \**Cenchrus ciliaris*, \**C. setiger* tussock grassland;

15. **ChAtuGwTeTHt:** *Corymbia hamersleyana* low open woodland over *Acacia tumida* var. *pilbarensis*, *Grevillea wickhamii* tall open scrub over *Triodia epactia* open hummock grassland and *Themeda triandra* very open tussock grassland;

16. **ChAmoGwPITe:** *Corymbia hamersleyana* scattered low trees over *Acacia monticola*, *Grevillea wickhamii*, *Petalostylis labicheoides* tall closed scrub over *Triodia epactia* very open hummock grassland;

17. **ChAtuGwTe:** *Corymbia hamersleyana* scattered low trees over *Acacia tumida* var. *pilbarensis*, *Grevillea wickhamii* tall open scrub over *Triodia epactia* open hummock grassland;

18. **AtuGwTe:** *Acacia tumida* var. *pilbarensis* (*Grevillea wickhamii*) tall closed scrub over *Triodia epactia* open hummock grassland;

19. **AciAaApyTHt:** *Acacia citrinoviridis* tall open scrub over *A. ancistrocarpa*, *A. pyrifolia* var. *morrisonii* open shrubland over *Themeda triandra* open tussock grassland; and

20. **ExAtuTe:** *Eucalyptus xerothematica* low open woodland over *Acacia tumida* var. *pilbarensis* tall open scrub over *Triodia epactia* hummock grassland.

There was also approximately a quarter of the application area that was mapped as 'Disturbed'. This area included previous clearing for the rail line, access roads and disturbance from the railway construction.

**Clearing Description** Hamersley Iron has applied to clear up to 33 hectares within an application area of approximately 1,047 hectares (GIS Database). The application area is located approximately 85 kilometres south of Roebourne (GIS Database).

The proposed clearing is for geotechnical investigations for the construction of a rail siding. This will include laydown areas, borrow pits and associated rail infrastructure.

**Vegetation Condition** Pristine: No obvious signs of disturbance (Keighery, 1994);

to

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).

**Comment** The vegetation condition was assessed by botanists from Biota Environmental Sciences (2010).

The vegetation condition was described using a scale based on Trudgen (1988) and has been converted to the corresponding condition from the Keighery (1994) scale.

Clearing permit CPS 4353/1 was granted by the Department of Mines and Petroleum on 23 June 2011 and was valid from 16 July 2011 to 31 July 2016. The clearing permit authorised the clearing of 33 hectares of native vegetation. Hamersley Iron has requested an increase in the size of the clearing permit boundary by 7 hectares. The increase in the clearing permit boundary is not likely to have significant environmental impacts.

### 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 flora and vegetation survey of the application area recorded 20 different vegetation types (Biota Environmental Sciences, 2010). The application area spans over 30 kilometres and it is common for long narrow corridors to intersect a large number of landforms and consequently vegetation types (Biota Environmental Sciences, 2010).

There has been no Threatened Ecological Communities recorded within the application area (GIS Database). The application area does lie within the buffer area of the 'Five plant assemblages of the Wona Land System' Priority Ecological Community (PEC) (GIS Database). As the application area is not within the Wona land system, it is not likely that the proposed clearing will impact this PEC.

The flora survey of the application area and other rail sidings in the area recorded a total of 223 native flora taxa from 111 genera and 42 families (Biota Environmental Sciences, 2010). There was one individual of the

Priority 3 flora species *Themeda* sp. Hamersley Station recorded within the application area (Biota Environmental Sciences, 2010). The removal of one individual is not likely to have any impacts on the survival of this species. There was also several individuals recorded that appear to be the Priority 4 species *Goodenia nuda* (Biota Environmental Sciences, 2010). This species is widespread throughout the Pilbara bioregion and the potential removal of a few individuals is not likely to have a significant impact on this species.

The fauna habitats recorded within the application area are all common and widespread throughout the Pilbara bioregion (Biota Environmental Sciences, 2010). Given this, the application area would not be expected to contain a higher level of faunal diversity than surrounding areas.

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

**Methodology** Biota Environmental Sciences (2010)  
GIS Database:  
- 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 not likely to be at variance to this Principle**

A desktop review of the potential fauna species occurring within the application area was conducted by Biota Environmental Sciences. This also included a site visit component. From this site visit the following four broad habitat types were identified (Biota Environmental Sciences, 2010):

1. *Acacia* sp. open shrubland over Spinifex (*Triodia* sp.) hummock grassland on loamy plains;
2. Mulga (*Acacia aneura*) woodland over tussock grassland on plains;
3. Open mixed tussock grassland adjacent to creek line on cracking clay; and
4. Sparse Bloodwood (*Corymbia* sp.) over scattered *Grevillea* sp. shrubland over Spinifex (*Triodia* sp.) hummock grassland on stones/cobbles.

These habitats are common and widespread within the Pilbara bioregion (Biota Environmental Sciences, 2010). However, the vegetation associated with sections of major creeklines (EvMgG and Evg) are likely to contain a greater abundance of microhabitats such as logs, hollows, leaf litter and soil suitable for burrowing. They may also have value as an ecological link enabling the movement of fauna across the landscape. These only make up a small portion of the application area and Hamersley Iron (2011) has indicated that these vegetation communities would not be impacted during the proposed clearing.

There is the potential for a number of conservation significant fauna species to occur within the application area, however, given the wide distribution of the habitat and potential conservation significant species occurring, the application area is not likely to represent significant habitat for local fauna species (Biota Environmental Sciences, 2010).

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

**Methodology** Biota Environmental Sciences (2010)  
Hamersley Iron (2011)

**(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 records of Declared Rare Flora (DRF) within the application area (GIS Database). A flora survey covering the application area was conducted by Biota Environmental Sciences in May 2010. This flora survey did not record any DRF (Biota Environmental Sciences, 2010).

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

**Methodology** Biota Environmental Sciences (2010)  
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**

According to available databases, there are no records of Threatened Ecological Communities (TECs) within the application area (GIS Database). A vegetation survey covering the application area was conducted by Biota Environmental Sciences in May 2010. No vegetation communities were identified as being a TEC (Biota Environmental Sciences, 2010).

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

**Methodology** Biota Environmental Sciences (2010)  
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 Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 99.9% of the Pre-European vegetation remains (see table) (GIS Database; Shepherd, 2009).

The vegetation of the application area has been mapped as the following Beard vegetation associations (GIS Database):

607: Hummock grasslands, low tree steppe; snappygum & bloodwood over soft spinifex and *Triodia wiseana*; and

646: Hummock grasslands, shrub steppe; snakewood over *Triodia basedowii*.

According to Shepherd (2009) approximately 100% of these Beard vegetation associations remains at both a state and bioregional level. Therefore the area proposed to be cleared does not represent a significant 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	17,785,000	~99.9	Least Concern	6.3
Beard veg assoc. – State					
607	120,789	120,789	~100	Least Concern	12.8
646	47,556	47,556	~100	Least Concern	2.1
Beard veg assoc. – Bioregion					
607	120,789	120,789	~100	Least Concern	12.8
646	47,547	47,547	~100	Least Concern	2.1

\* 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 - Sub Regions)  
- 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**

As the application area spans over 30 kilometres, it is intersecting numerous minor non-perennial watercourses (GIS Database). The vegetation survey identified ten vegetation types associated with drainage lines (Biota Environmental Sciences, 2010). The vegetation communities EvMgG, Evg and EvAiEUa were found within major to moderate drainage areas (Biota Environmental Sciences, 2011). Hamersley Iron (2011) has indicated that these vegetation types will not be impacted by the proposed clearing. The application area follows the existing rail line which already has culverts constructed in some areas. New culverts will be constructed if necessary to ensure water flow is not disrupted (Rio Tinto Iron Ore, 2011).

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

**Methodology** Biota Environmental Sciences (2010)  
Hamersley Iron (2011)  
Rio Tinto Iron Ore (2011)  
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 may be at variance to this Principle**

The application area has been mapped as occurring on the following land systems (GIS Database):

- Boolgeeda land system;
- Hooley land system;
- McKay land system;
- Newman land system;
- River land system; and
- Satirist land system.

The Boolgeeda, McKay, Newman and Satirist land systems are all generally not prone to erosion (Van Vreeswyk et al., 2004). The Hooley land system becomes moderately susceptible to erosion in places where there is no stony surface (Van Vreeswyk et al., 2004). Within in the River land system the susceptibility to erosion is high if the vegetation cover is removed (Van Vreeswyk et al., 2004). Within the application area this land system has been disturbed by previous rail activities and the vegetation condition was rated as being in 'good' condition (Biota Environmental Sciences, 2010). Impacts from erosion may be minimised by the implementation of a staged clearing condition.

The average annual evaporation rate is over eight times the average annual rainfall so there is a low probability of the proposed clearing causing increased groundwater recharge resulting in rising saline water tables (GIS Database). The landscape of the application area has a low topographic relief so it is not likely that there will be excessive surface water runoff during seasonal rains and a low risk of water erosion (GIS Database).

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

- Methodology** Biota Environmental Sciences (2010)  
Van Vreeswyk et al. (2004)  
GIS Database:
- Evaporation Isopleths
  - Mean Average Rainfall
  - Rangeland Land System Mapping
  - Topographic Contours, 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**

The application area does not lie within any conservation areas or DEC managed tenure (GIS Database). At its closest point, the northern part of the application area comes within 100 metres of the Millstream-Chichester National Park (GIS Database). The area surrounding Millstream-Chichester National Park remains largely uncleared and the application area is not likely to be a significant ecological link to the National Park. It has been previously identified that the main impact to the National Park from rail activities is the potential to increase the spread and levels of alien weed species (CALM, 2006). Potential impacts from weed species may be mitigated by the successful implementation of a weed management condition.

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

- Methodology** CALM (2006)  
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 lies within a Public Drinking Water Source Area (PDWSA), namely the Millstream Water Reserve (GIS Database). The Millstream Water Reserve is a Priority 1 PDWSA (GIS Database). Advice from the Department of Water states that provided the clearing activities are conducted in accordance with Department of Water guidelines and advice, the proposed clearing is not likely to significantly impact the quality or quantity of groundwater (Department of Water, 2011).

There are numerous minor non-perennial watercourses within the application area (GIS Database). Culverts already exist in some areas and new culverts will be constructed if necessary to ensure water flow is not disrupted (Rio Tinto Iron Ore, 2011). Hamersley Iron (2011) has indicated that vegetation associated with major drainage creeklines (EvMgG and Evg) will not be impacted by the proposed clearing.

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

**Methodology** Department of Water (2011)  
Hamersley Iron (2011)  
Rio Tinto Iron Ore (2011)  
GIS Database:  
- 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**

With an average annual rainfall of 400 millimetres and an average annual evaporation rate of 3,400 millimetres there is likely to be little surface flow during normal seasonal rains (GIS Database). Whilst large rainfall events may result in the flooding of the area, the proposed clearing is not likely to lead to an increase in the incidence or intensity of flooding.

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

**Methodology** GIS Database:  
- Evaporation Isopleths  
- Rainfall, Mean Annual

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

**Comments**

There is one native title claim over the area under application (GIS Database). This claim (WC99/14) was determined by the Federal Court of Australia on 5 May 2005 (GIS Database). 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 two 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 application area forms part of the Emu Siding to Rosella Siding crossover construction project which was referred by the company to the EPA on 6 October 2008. The EPA provided the following recommendation on 3 November 2008 - "Not Assessed – Managed under Part V of the *Environmental Protection Act 1986*".

Clearing permit CPS 4353/1 was granted by the Department of Mines and Petroleum on 23 June 2011 and was valid from 16 July 2011 to 31 July 2016. The clearing permit authorised the clearing of 33 hectares of native vegetation. Hamersley Iron has requested an increase in the size of the clearing permit boundary by 7 hectares. The increase in the clearing permit boundary is not likely to have significant environmental impacts.

The clearing permit amendment was advertised on 5 December 2011 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received.

**Methodology** GIS Database:  
- Aboriginal Sites of Significance  
- Native Title Claims - Determined

#### **4. References**

- Biota Environmental Sciences (2010) Galah, Gull, Ibis-Koala and Rosella Rail Sidings Native Vegetation Clearing Permit Report. Unpublished report for Rio Tinto Iron Ore dated August 2010.
- CALM (2006) Land clearing proposal advice. Email Advice provided on 23 January 2006 to Native Vegetation Assessment, Department of Industry and Resources (DoIR) (now Department of Mines and Petroleum). 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.
- Department of Water (2011) Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Mines and Petroleum, 1 June 2011. Department of Water, Western Australia.
- Hamersley Iron (2011) Email to Assessing Officer, Native Vegetation Assessment Branch, Department of Mines and Petroleum. Received on 13 June 2011.

- Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Rio Tinto Iron Ore (2011) *Rail Capacity Enhancement Project: Railway Crossover Construction at Ibis and Koala Sidings*. Mining Proposal submitted to the Department of Mines and Petroleum dated May 2011.
- 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.
- Trudgen M.E. (1988) *A Report on the Flora and Vegetation of the Port Kennedy Area*. Unpublished report prepared for Bowman Bishaw and Associates, West Perth.
- Van Vreeswyk, A.M., Payne, A.L., Leighton, K.A. & Hennig, P. (2004) *Technical Bulletin No. 92: An inventory and condition survey of the Pilbara region, Western Australia*. Department of Agriculture, South Perth, Western Australia.

## 5. Glossary

### Acronyms:

<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>CALM</b>	Department of Conservation and Land Management (now DEC), Western Australia
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia
<b>DEC</b>	Department of Environment and Conservation, Western Australia
<b>DEH</b>	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
<b>DEP</b>	Department of Environment Protection (now DEC), Western Australia
<b>DIA</b>	Department of Indigenous Affairs
<b>DLI</b>	Department of Land Information, Western Australia
<b>DMP</b>	Department of Mines and Petroleum, Western Australia
<b>DoE</b>	Department of Environment (now DEC), Western Australia
<b>DoIR</b>	Department of Industry and Resources (now DMP), Western Australia
<b>DOLA</b>	Department of Land Administration, Western Australia
<b>DoW</b>	Department of Water
<b>EP Act</b>	Environmental Protection Act 1986, Western Australia
<b>EPBC Act</b>	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
<b>GIS</b>	Geographical Information System
<b>ha</b>	Hectare (10,000 square metres)
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>RIWI Act</b>	Rights in Water and Irrigation Act 1914, Western Australia
<b>s.17</b>	Section 17 of the Environment Protection Act 1986, Western Australia
<b>TEC</b>	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.