



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3170/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Cliffs Asia Pacific Iron Ore Pty Ltd

1.3. Property details

Property: Miscellaneous Licence 77/214
Local Government Area: Shire Of Yilgarn
Colloquial name: Koolyanobbing Airstrip Realignment

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
13.54		Mechanical Removal	Airstrip Realignment

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

Vegetation within the application area has been mapped at a 1:250,000 scale as Beard Vegetation Association (Department of Agriculture and Food Western Australia, 2009):

141: Medium woodland; York gum, salmon gum & gimlet.

Western Botanical undertook a flora survey over the application area during November 2008. The botanical survey identified the following vegetation communities within the application area (Cliffs Asia Pacific Iron Ore, 2009):

- 1) Open Mallee Woodland over Mixed *Acacia* Shrubland;
- 2) *Acacia* sp. Narrow phyllode and Mulga Shrubland with emergent York Gum;
- 3) Open Gimlet Woodland over Chenopod understorey; and
- 4) Disturbed *Acacia* sp. Narrow phyllode Thicket.

Clearing Description

Cliffs Asia Pacific Iron Ore has applied to clear up to 13.54 hectares within an application area of approximately 29 hectares for the purpose of upgrading and realigning their Koolyanobbing airstrip (GIS Database). Clearing will be by mechanical means.

Vegetation Condition

Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).

Comment

The vegetation condition rating is based on information reported by Western Botanical.

The application area has a number of weeds present and there are areas disturbed by the existing airstrip and tracks (Cliffs Asia Pacific Iron Ore, 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 Southern Cross subregion of the Coolgardie Interim Biogeographical Regionalisation of Australia (IBRA) bioregion (GIS Database). At a broad scale, vegetation can be described as Eucalyptus woodlands rich in endemic eucalypts around chains of saline playa-lakes, *Borya constricta* with stands of *Acacia acuminata* and *Eucalyptus loxophleba* on mid-levels of granite basement outcrops with mallees and scrubheaths on the uplands (CALM, 2002).

Western Botanical conducted a flora and vegetation survey over the application area during November 2008. The surveys identified four vegetation communities within the application area (Cliffs Asia Pacific Iron Ore, 2009). The condition of the vegetation has been described as 'very good' (Western Botanical, 2008). These vegetation communities are common throughout the Koolyanobbing area and also the Mt Jackson and Windarling region (Western Botanical, 2008). The application area has been previously disturbed by the existing runway and vehicle tracks (Cliffs Asia Pacific Iron Ore, 2009).

The flora survey identified 88 taxa from 29 families within the application area (Western Botanical, 2008).

There was no rare flora recorded within the application area (Cliffs Asia Pacific Iron Ore, 2009). The survey recorded three weed species; Saffron Thistle (*Carthamus lanatus*), Maltese Cockspur (*Centaurea melitenis*) and Ward's Weed (*Carrichtera annua*) (Western Botanical, 2008). The presence of these introduced species lowers the biodiversity value of the application area, and their control is necessary for the maintenance of biological function on the Koolyanobbing Range. Should a permit be granted, it is recommended a condition be imposed for weed management.

The Koolyanobbing region has the potential to support a faunal diversity of 217 species (Cliffs Asia Pacific Iron Ore, 2009). A targeted survey of the Koolyanobbing area recorded a total of 51 fauna species (Cliffs Asia Pacific Iron Ore, 2009). There are 24 species of conservation significance that have the potential to occur within the application area (Cliffs Asia Pacific Iron Ore, 2009). The species of most concern is the Tree-stem Spider (*Aganippe castellum*) (Schedule 1 - fauna that is rare or likely to become extinct, *Wildlife Conservation (Specially Protected Fauna) Notice, 2008*). Cliffs Asia Pacific Iron Ore (2009) estimate removing 6.52 hectares of potential Tree-stem Trapdoor Spider habitat and between 50 and 480 burrows. Cliffs Asia Pacific Iron Ore will have to acquire a permit to take Tree-stem Trapdoor Spider burrows and individuals from the Species and Communities Branch of the Department of Environment and Conservation (DEC).

The Koolyanobbing Range has been classified as being an area of high biodiversity (Government of Western Australia, 2007). However, the application area does not occur on the Koolyanobbing Banded Iron Formation (BIF) and has considerably lower biodiversity than the range (Cliffs Asia Pacific Iron Ore, 2009). Given this and that there has been previous disturbance, the application area is not likely to have a higher biodiversity than surrounding areas.

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

Methodology CALM (2002)
Cliffs Asia Pacific Iron Ore (2009)
Government of Western Australia (2007)
Western Botanical (2008)
GIS Database
- Interim Biogeographic Regionalisation of Australia (subregions)

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

Comments Proposal may be at variance to this Principle

A number of fauna surveys have been conducted in the Koolyanobbing area including several targeted surveys for the Tree-stem Trapdoor Spider (*Aganippe castellum*) (Cliffs Asia Pacific Iron Ore, 2009).

There is one broad fauna habitat identified within the application area (Cliffs Asia Pacific Iron Ore, 2009):

- Plains: loam to clayey-loam soils generally supporting eucalypt woodland with a shrubby understorey. Composition of the understorey is highly variable with genera such as *Acacia*, *Eremophila* and *Maireana* dominant.

The plains habitat is very extensive throughout the region and impacts of mining have been slight (Cliffs Asia Pacific Iron Ore, 2009).

A desktop search by the applicant revealed that 217 vertebrate fauna species could potentially occur at the Koolyanobbing locality (Cliffs Asia Pacific Iron Ore, 2009). A targeted field survey in the Koolyanobbing area confirmed the presence of 51 vertebrate species (Cliffs Asia Pacific Iron Ore, 2009).

There are 22 vertebrate fauna species of conservation significance that have the potential to occur in the Koolyanobbing area (Cliffs Asia Pacific Iron Ore, 2009). Five of these were recorded during the survey (Cliffs Asia Pacific Iron Ore, 2009). The habitat within the application area is well represented along the Koolyanobbing range and surrounding areas, and is in better condition at the southern end of the range where there has been no historic mining (Cliffs Asia Pacific Iron Ore, 2009). Given this, the application area is not likely to represent significant habitat for vertebrate fauna.

Several surveys investigating the abundance and distribution of the Tree-stem Trapdoor Spider (Schedule 1 - fauna that is rare or likely to become extinct, *Wildlife Conservation (Specially Protected Fauna) Notice, 2008*) have been conducted at the central and southern Koolyanobbing Range, including a survey over the application area (Cliffs Asia Pacific Iron Ore, 2009). The Tree-stem Trapdoor Spider is known from the wheatbelt, and has a distinct above ground burrow structure with a webbed tube extending up against the base of a tree or shrub (Russell, 2006). Targeted searches recorded the spider within the application area, with 19 known active burrows being recorded (Cliffs Asia Pacific Iron Ore, 2009). Searches revealed that the spiders were found from the lower slopes to the top of the ridge in a variety of vegetation types (Bamford Consulting Ecologists, 2009a). The soils it was found to inhabit were gravelly loam and sometimes soils that were quite rocky (Bamford Consulting Ecologists, 2009a). The spiders were absent from surrounding loam plains where the soil was a heavy loam or clay supporting eucalypt woodland over saltbush (Bamford Consulting Ecologists, 2009a). Based on the vegetation and soil types present there is an estimated 602.8 hectares of Tree-stem Trapdoor Spider habitat along the central and southern Koolyanobbing Range (Bamford Consulting Ecologists,

2009a).

Following their survey of the range, Bamford Consulting Ecologists (2009a) estimated the average density of the population to be 73.8 spiders/hectare. Based on the vegetation and soil types that the spiders were recorded from, the population across the central and southern Koolyanobbing Range is estimated to be approximately 44,000 individuals (Cliffs Asia Pacific Iron Ore, 2009). As the majority of the application area is situated on plains and lower slopes rather than the top of the range there was a lower density of spider burrows recorded (Bamford Consulting Ecologists, 2009b). The proposed clearing is estimated to disturb 6.52 hectares of inferred spider habitat (Cliffs Asia Pacific Iron Ore, 2009). Based on estimated density of 73.8 spiders/hectare approximately 480 individuals will be impacted. However, the burrow density within the application area was shown to be fewer and as few as 50 individuals may be impacted on (Cliffs Asia Pacific Iron Ore, 2009). The potential impact represents between approximately 0.1% and 1.1% of the estimated population on the central and southern Koolyanobbing Range. If these estimates are correct then the removal of 50 – 480 burrows and 6.52 hectares of habitat is not likely to significantly impact on the Tree-stem Trapdoor Spider population at Koolyanobbing.

Cliffs Asia Pacific Iron Ore (2009) estimate the cumulative impacts from their projects at Koolyanobbing to be 95.58 hectares of inferred spider habitat and an estimated 7,055 individuals. This represents approximately 16% of both the inferred habitat and estimated individuals on the central and southern Koolyanobbing Range. Populations of the spider have also recently been recorded at Mount Jackson, Helena and Aurora Range, Windarling Range and the Die Hardy Range (Cliffs Natural Resources, 2009).

Given the habitat present within the application area is well represented throughout the Koolyanobbing area, the application area is not likely to represent significant habitat for vertebrate fauna species. Whilst the proposed clearing will impact on the Tree-stem Trapdoor Spider it is not likely to be significantly impacted due to lower densities being found in the habitat present.

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

Methodology Bamford Consulting Ecologists (2009a)
Bamford Consulting Ecologists (2009b)
Cliffs Asia Pacific Iron Ore (2009)
Cliffs Natural Resources (2009)
Russell (2006)

(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 Declared Rare Flora (DRF) or Priority Flora species within the application area (GIS Database).

A flora survey was conducted over the application area by Western Botanical on 18 and 19 November. No species listed as DRF or Priority Flora were recorded within the application area (Cliffs Asia Pacific Iron Ore, 2009).

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

Methodology Cliffs Asia Pacific Iron Ore (2009)
GIS Database
- Declared Rare and Priority Flora List

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

Comments Proposal is not likely to be at variance to this Principle

According to available databases, there are no Threatened Ecological Communities (TEC's) within the application area (GIS Database). No vegetation communities described as a TEC were recorded during the botanical survey of the application area (Cliffs Asia Pacific Iron Ore, 2009). The nearest known TEC is located approximately 285 kilometres south-west of the application area.

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

Methodology Cliffs Asia Pacific Iron Ore (2009)
GIS Database
- Threatened Ecological Communities

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

Comments Proposal is not at variance to this Principle

The application area falls within the Coolgardie IBRA bioregion within which 98.42% of the Pre-European

vegetation remains (see table) (GIS Database; Shepherd, 2007).

The vegetation of the application area has been mapped as Beard Vegetation Association 141: Medium woodland; York gum, salmon gum & gimlet (Shepherd, 2007).

According to Shepherd (2007) approximately 100% of Beard Vegetation Association 141 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.

While a relatively small percentage of the vegetation types within the Coolgardie bioregion are adequately protected within conservation reserves, the bioregion remains largely uncleared. As a result, the conservation of vegetation associations within the bioregion is not likely to be impacted by this proposal.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves (and post clearing %)*
IBRA Bioregion – Coolgardie	12,912,204	12,707,619	~98.42	Least Concern	10.87 (11.04)
Beard veg assoc. – State					
141	1,158,760	953,80	~82.3	Least Concern	12 (14.6)
Beard veg assoc. – Bioregion					
141	883,085	859,070	~97.3	Least Concern	15.6 (16)

* Shepherd (2007)

** Department of Natural Resources and Environment (2002)

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

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

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd (2007)
GIS Database
- Interim Biogeographic Regionalisation of Australia
- 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 not at variance to this Principle

According to available databases, there are no permanent or ephemeral watercourses or wetlands within the application area (GIS Database). The vegetation proposed to be cleared is not associated with any watercourses, wetlands or wetland dependant vegetation (Cliffs Asia Pacific Iron Ore, 2009). The nearest significant waterbody is Lake Deborah, a non-perennial salt lake located approximately 5 kilometres west of the application area (GIS Database). The proposed clearing is unlikely to impact on Lake Deborah.

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

Methodology Cliffs Asia Pacific Iron Ore (2009)
GIS Database
- Hydrology, 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 is located within the Southern Cross Soil-Landscape Zone (Tille, 2006). This zone is characterised by undulating plains and uplands (with some salt lake and low hills) on deeply weathered mantle, colluvium and alluvium over greenstone and granitic rocks of the Yilgarn Craton (Tille, 2006).

The surface soil pH of the application area is 5.5 – 6.0 and there is no known occurrence of acid sulphate soil (CSIRO, 2009). The application area is relatively flat throughout, however, the clearing of native vegetation could lead to some instances of localised erosion (GIS Database).

The average annual evaporation rate is approximately 9 times greater than the average annual rainfall, so it is unlikely the proposed clearing will result in increased groundwater recharge causing rising saline water tables (GIS Database).

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

Methodology CSIRO (2009)
Tille (2006)
GIS Database
- Evaporation Isopleths
- Rainfall, Mean Annual
- 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**
According to available databases, the application area does not lie within any conservation areas or DEC managed lands (GIS Database). The nearest conservation reserve is an un-named nature reserve located approximately 10 kilometres west of the application area (GIS Database). Based on the distance between the application area and the nature reserve, the proposed clearing is not likely to impact on the environmental values of any conservation areas.

There are several areas around the application area that have been proposed to be included in the Mount Manning A-Class Nature Reserve (EPA, 2007). The nearest of these is the southern part of the Koolyanobbing Range located over 5 kilometres from the application area (Cliffs Asia Pacific Iron Ore, 2009). The proposed clearing is not likely to have an impact on the environmental values of this proposed conservation area.

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

Methodology Cliffs Asia Pacific Iron Ore (2009)
EPA (2007)
GIS Database
- CALM Managed Lands and Waters

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

Comments **Proposal is not likely to be at variance to this Principle**
According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database).

Groundwater within the application area is saline, between 14,000 – 35,000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). Given the groundwater is already saline, any clearing is unlikely to have an effect on groundwater quality.

There are no permanent or ephemeral waterbodies located within the application area (GIS Database). Lake Deborah is the closest waterbody to the application area, located approximately 5 kilometres west (GIS Database). Given that there is a low average annual rainfall in the Koolyanobbing area (300 millimetres) and there are no watercourses within the application area, the proposed clearing is not likely to cause sedimentation or deteriorate the quality of surface water in the nearby areas.

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

Methodology GIS Database
- Groundwater Salinity
- Rainfall, Mean Annual
- Public Drinking Water Source Areas (PDWSA's)
- 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 receives an average rainfall of approximately 300 millimetres (GIS Database). Based on an average annual evaporation rate of 2600 – 2800 millimetres (GIS Database), any surface water resulting

from rainfall events is likely to be relatively short lived.

There are no watercourses or wetlands within the application area (GIS Database). Given this and that the application area is relatively flat, the proposed clearing is not likely to increase 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
- Hydrography, linear
- Rainfall, Mean Annual

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

Comments

The permit application was advertised by the Department of Mines and Petroleum, inviting submissions from the public. There was one submission received. The submission stated an objection to the proposal. The objection was on the grounds that the community would be better served by Cliffs Asia Pacific Iron Ore entering an agreement to jointly upgrade the Southern Cross airstrip. It also noted that the upgrade of the Southern Cross airstrip would not require the clearing of any native vegetation. Whilst it would appear this proposal may have benefits over Cliffs Asia Pacific Iron Ore's application there are other factors that should be taken into consideration such as the condition of the road between Southern Cross and Koolyanobbing. It is the proponents' responsibility to liaise and consult with the community to achieve the best outcomes.

There is one native title claim over the area under application; WC99/029 (GIS Database). This claim has been registered with the National Native Title Tribunal. However, the mining tenement has been granted in accordance with the future act regime of the *Native Title Act, 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act, 1993*.

According to available databases, there are no Aboriginal Sites of Significance within the application area (GIS Database). It is the proponents' responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged throughout the clearing process.

It is the proponents' 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 licence or approvals are required for the proposed works.

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

4. Assessor's comments

Comment

The proposal has been assessed against the Clearing Principles, and may be at variance to Principle (b), is not likely to be at variance to Principles (a), (c), (d), (g), (h), (i), (j) and is not at variance to Principles (e) and (f).

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

5. References

- Bamford Consulting Ecologists (2009a) Investigations into the distribution and abundance of the Tree-stem Trapdoor Spider in the Koolyanobbing Area, December 2008. Unpublished report for Cliffs Asia Pacific Iron Ore, Western Australia.
- Bamford Consulting Ecologists (2009b) Surveys for the Tree-stem Trapdoor Spider (*Aganippe castellum*) at Portman's Proposed Koolyanobbing Airstrip Realignment. Unpublished report for Cliffs Asia Pacific Iron Ore, Western Australia.
- Cliffs Asia Pacific Iron Ore (2009) Koolyanobbing Airstrip Upgrade, Vegetation Clearing Permit Application. Unpublished Report for Cliffs Asia Pacific Iron Ore, Western Australia.
- Cliffs Natural Resources (2009) Summary of Works Undertaken in Relation to the Tree-stem Trapdoor Spider *Aganippe castellum*. Unpublished report for Cliffs Asia Pacific Iron Ore, Western Australia.
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- Department of Conservation and Land Management (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions.
- 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.

- EPA (2007) Advice on Areas of the Highest Conservation Value in the Proposed Extensions to Mount Manning Nature Reserve. Environmental Protection Authority, Perth, Western Australia.
- Government of Western Australia (2007) Strategic Review of the Conservation and Resource Values of the Banded Iron Formations of the Yilgarn Craton. Published jointly by the Department of Environment and Conservation and the Department of Industry and Resources, Perth, 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.
- Russell, M.G. (2006) Abundance and distribution of the Tree-stem Trapdoor Spider, *Aganippe castellum* in the Eastern West Australian wheatbelt. Australasian Arachnology No. 73, January 2006.
- Shepherd, D.P. (2007) 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. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.
- Tille. P. (2006) Soil-landscapes of Western Australia's Rangelands and Arid Interior. Technical Report 313. Department of Agriculture and Food, Western Australia. ISSN 1039-7205.
- Western Botanical (2008) Flora and Vegetation Survey of the Proposed Koolyanobbing Airstrip, November 2008. Unpublished report for Cliffs Asia Pacific Iron Ore, Western Australia.

6. Glossary

Acronyms:

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

Definitions:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1** **Priority One - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P2** **Priority Two - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P3** **Priority Three - Poorly Known taxa:** taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
- P4** **Priority Four – Rare taxa:** taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.

- R** **Declared Rare Flora – Extant taxa** (= *Threatened Flora = Endangered + Vulnerable*): taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
- X** **Declared Rare Flora - Presumed Extinct taxa**: taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

- Schedule 1** **Schedule 1 – Fauna that is rare or likely to become extinct**: being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2** **Schedule 2 – Fauna that is presumed to be extinct**: being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3** **Schedule 3 – Birds protected under an international agreement**: being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4** **Schedule 4 – Other specially protected fauna**: being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). *Priority Codes for Fauna*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1** **Priority One: Taxa with few, poorly known populations on threatened lands**: Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2** **Priority Two: Taxa with few, poorly known populations on conservation lands**: Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P3** **Priority Three: Taxa with several, poorly known populations, some on conservation lands**: Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4** **Priority Four: Taxa in need of monitoring**: Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
- P5** **Priority Five: Taxa in need of monitoring**: Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (Environment Protection and Biodiversity Conservation Act 1999)

- EX** **Extinct**: A native species for which there is no reasonable doubt that the last member of the species has died.
- EX(W)** **Extinct in the wild**: A native species which:
 (a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
 (b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- CR** **Critically Endangered**: A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- EN** **Endangered**: A native species which:
 (a) is not critically endangered; and
 (b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- VU** **Vulnerable**: A native species which:
 (a) is not critically endangered or endangered; and
 (b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- CD** **Conservation Dependent**: A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.