



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4641/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: BGC Contracting Pty Ltd

1.3. Property details

Property: Mining Lease 08/467
Miscellaneous Licence 08/62
Local Government Area: Shire of Ashburton
Colloquial name: Nanutarra Quarry

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 15 December 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 for the whole of Western Australia and are useful to look at vegetation in a regional context. Two Beard vegetation associations have been mapped within the application area:

Beard vegetation association 98: Hummock grasslands, shrub steppe; kanji over soft spinifex & *Triodia basedowii*;

Beard vegetation association 103: Hummock grasslands, shrub steppe; snakewood over soft spinifex & *Triodia wiseana* (Shepherd, 2009; GIS Database).

Astron Environmental Services (2010) conducted a flora survey of the application area during March 2010, and described six vegetation communities of the application area:

LRP1 - This vegetation association was represented by the two larger rock piles that occurred in the proposed quarry area. This vegetation type is composed of *Acacia trachycarpa*, *Acacia citrinoviridis* (*Acacia ancistrocarpa*) shrubland over *Mollugo molluginea*, *Gomphrena cunninghamii*, *Boerhavia gardneri* and *Trianthema triquetra* very open herbland over *Triodia lanigera* and *Triodia epactia* very open hummock grassland and *Cenchrus ciliaris* very open tussock grassland;

SP1 - This vegetation association was the most common, occurring within the proposed quarry area and access track, and comprised of *Acacia ancistrocarpa* shrubland to tall open shrubland over *Mollugo molluginea* very open herbland over *Triodia lanigera* open hummock grassland;

BFRP1 - This vegetation association occurred on the smaller rock piles and rock pavements that formed a mosaic with vegetation associated SP1, located within the southern boundary of the proposed quarry area. It is comprised of *Acacia bivenosa* scattered shrubs over *Eremophila fraseri* scattered low shrubs over *Gomphrena cunninghamii* herbs over *Triodia lanigera* (*Triodia epactia* and *Triodia wiseana*) open hummock grassland;

SP2 - This vegetation association formed one of the several plant communities commonly known as snakewood throughout the Pilbara region. It is composed of *Acacia xiphophylla* (*Acacia synchronicia*) tall shrubland to tall open scrub over *Boerhavia gardneri* and *Trianthema triquetra* very open herbland over *Triodia lanigera* and *Triodia wiseana* open hummock grassland and *Cenchrus ciliaris* open tussock grassland. It was recorded from within the proposed quarry area and access track;

MD1 - This vegetation association was linked with the medium-sized creek which flows into the Ashburton River, along the western boundary of the proposed quarry area. This vegetation association comprised of *Corymbia hamersleyana*, *Corymbia candida* open woodland over *Acacia citrinoviridis* and *Acacia trachycarpa* (*Vachellia farnesiana*) tall open shrubland to tall shrubland over *Boerhavia burbridgeana*, *Portulaca oleracea*, *Cleome viscosa* and *Trianthema triquetra* very open herbland over *Cenchrus ciliaris* tussock grassland; and

Disturbed Vegetation – This vegetation association was located within the road reserve and was mapped as a disturbed vegetation unit. This area had previously been cleared and the vegetation structure was no longer intact

Clearing Description	BGC Contracting Pty Ltd is proposing to clear up to 55.55 hectares of native vegetation for the Nanutarra quarry project (Astron Environmental Services, 2010). The clearing of vegetation is required for a hard rock quarry and associated infrastructure, processing plant, stockpiling areas, and an access road. The vegetation will be cleared using wheeled and/or tracked earthmoving equipment. The vegetation and topsoil will be stockpiled separately for use in rehabilitation.
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 application area is located in the Hamersley subregion of Western Australia and is situated approximately 160 kilometres south-east of the Exmouth town site (GIS Database). The vegetation condition was derived from a vegetation survey conducted by Astron Environmental Services (2010).

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments	<p>Proposal may be at variance to this Principle</p> <p>The application area occurs within the Hamersley (PIL3) subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by mountainous area of Proterozoic ranges and plateaux with Mulga (<i>Acacia aneura</i>) low woodland over bunch grasses on fine textured soils, and Snappy Gum low trees over <i>Triodia brizoides</i> hummock grasslands on the skeletal sandy soils of the ranges (CALM, 2002). The vegetation within the application area consists of Beard vegetation associations 98 and 103, which are common and widespread throughout the Pilbara bioregion with approximately 100% of the pre-European vegetation extent remaining (Shepherd, 2009; GIS Database).</p> <p>A search of the Department of Environment and Conservation Declared Rare and Priority Flora databases revealed one Priority Flora species which may potentially occur within a 20 kilometre radius of the application area (DEC, 2011). No Declared Rare Flora (DRF) species were identified (DEC, 2011). Astron Environmental Services (2010) identified no DRF and no Priority Flora species within the application area. Given that the survey was undertaken following above average rainfall, it is likely that the Priority Flora species most likely to occur in the area would have been detectable at the time of the survey and therefore was not present within the application area. A vegetation survey of the application area by Astron Environmental Services (2010) during March 2010 identified 127 species of flora taxa belonging to 71 Genera and 28 Families. Astron Environmental Services (2010) identified six vegetation communities within the application area. The condition of the vegetation types were classified from 'excellent' to 'completely degraded' (Keighery, 1994; GIS Database).</p> <p>No Threatened Ecological Communities or Priority Ecological Communities were recorded or identified within the application area (GIS Database).</p> <p>Five species of weed were identified during the survey: Buffel Grass (<i>Cenchrus ciliaris</i>), Wild Melon (<i>Citrullus lanatus</i>), Spiked Malvastrum (<i>Malvastrum americanum</i>), Ruby Dock (<i>Acetosa vesicaria</i>) and Needle Bush (<i>Vachellia farnesiana</i>) (Astron Environmental Services, 2010). None of these species are listed by the Western Australian Department of Agriculture and Food as Declared Plants. Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to the biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.</p> <p>The broad-scale vegetation types and fauna habitat types are common and widespread both locally and regionally (Astron Environmental Services 2010; 2011; GIS Database). Aerial imagery also suggests that there is a widespread availability of similar vegetation communities and landforms (GIS Database). The proposed clearing may however have a significant impact on biodiversity on a local scale. Rock piles, granites and drainage line faunal habitats within the application area are considered to be of high ecological significance, however this habitat only accounts for approximately 1.5 hectares of the application area (Astron Environmental Services, 2011). The clearing of 55.55 hectares of native vegetation is unlikely to have a significant impact in a regional and local context.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
Methodology	<p>Astron Environmental Services (2010) Astron Environmental Services (2011) CALM (2002) DEC (2011) Keighery (1994) Shepherd (2009)</p>

- GIS Database:
- IBRA WA (regions - subregions)
 - Pre-European Vegetation
 - 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 may be at variance to this Principle

No fauna surveys have been conducted over the application area, however fauna habitat types would be similar to the vegetation types surveyed by Astron Environmental Services (2010; 2011). The desktop fauna survey and aerial photography suggests that the application area contains landforms and habitats that are well represented in the Pilbara bioregion (Astron Environmental Services, 2011; GIS Database). During the vegetation survey by Astron Environmental Services (2010), rock piles, granites and drainage lines were noted and may provide refugia for fauna during extended dry periods.

Analysis of aerial photography suggests the vegetation condition to be 'very good' (Keighery, 1994; GIS Database). The application area occurs within Hamersley subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This bioregion retains approximately 100% of its pre-European vegetation (GIS Database; Shepherd, 2009). Analysis of aerial imagery demonstrates that the local area remains largely uncleared, however clearing of native vegetation is evident on a regional scale. The vegetation communities and associated fauna habitats are considered common and widespread in the local area, and throughout the Pilbara IBRA bioregion.

There are two species of mammals, two birds and one species of reptile listed as Threatened Species under the *Environmental Protection and Biodiversity Conservation Act 1999* or protected under Western Australian legislation that may potentially occur within the application area. Based on habitat type and vegetation mapping associated with the tenement (Astron Environmental Services, 2010; DEC, 2011), the Northern Quoll (*Dasyurus hallucatus*) and Pilbara Olive Python (*Liasis olivaceus* subsp. *barroni*) may occupy areas within the application area due to potential suitable faunal habitats occurring in the area (DEC, 2011; Astron Environmental Services, 2011). A single Wedge-tailed Eagle (*Aquila audax*) nest was recorded within the canopy of a *Corymbia candida* tree located within the proposed Quarry area during the vegetation survey (Astron Environmental Services, 2010). This area has subsequently been excluded from the application area (Astron Environmental Services, 2010).

Some of these species identified as potentially occurring within the application area such as the Australian Bustard (*Ardeotis australis*), Bush Stone-curlew (*Burhinus grallarius*) and Short-tailed Mouse (*Leggadina lakedownensis*) are considered highly mobile and/or have a wide distribution so the clearing is unlikely to significantly impact on the species (DEC, 2011; Astron Environmental Services, 2011). However, the Pilbara Olive Python and Northern Quoll are ground-dwelling conservation significant fauna with limited dispersal abilities and are more likely to be impacted on by any development (Astron Environmental Services, 2011).

A survey targeting the Pilbara Olive Python and Northern Quoll by Astron Environmental Services (2011) on 5 and 6 December 2011 made no observations of any sign (scats, tracks or individuals) that these two species are present within the application area. Larger areas of more suitable refuge and foraging habitat for both species exists immediately to the east in rocky terrain and approximately two kilometres north along the Ashburton River (Astron Environmental Services, 2011; GIS Database). Both species are highly likely to be currently present in those nearby habitat zones. The quarry site, and specifically the three rock piles, may provide temporary sanctuary for both species during their foraging periods but the site in general does not contain significant permanent refuge.

The proposed clearing of 55.55 hectares of native vegetation is not likely to impact critical feeding or breeding habitat for any conservation significant fauna species or significantly impact the conservation significance of the conservation species listed above.

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

- Methodology**
- Astron Environmental Services (2010)
 - Astron Environmental Services (2011)
 - DEC (2011)
 - Keighery (1994)
 - Shepherd (2009)
 - GIS Database:
 - Pre-European Vegetation
 - IBRA WA (regions - subregions)
 - Boolaloo 80cm Orthomosaic ? Landgate 2005
 - Uaroo 50cm Orthomosaic ? Landgate 2005

(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 search of the Department of Environment and Conservation Declared Rare and Priority Flora databases identified no DRF species as occurring within a 20 kilometre radius of the application area (DEC, 2011).

Astron Environmental Services (2010) conducted a vegetation and flora survey of the application area during March 2010. No DRF were recorded within the survey area.

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

Methodology Astron Environmental Services (2010)
DEC (2011)
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

A search of the available databases shows that there are no Threatened Ecological Communities situated within 100 kilometres 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:
- 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 IBRA bioregion (GIS Database). The vegetation within the application area is recorded as:

Beard vegetation association 98: Hummock grasslands, shrub steppe; kanji over soft spinifex & *Triodia basedowii*;

Beard vegetation association 103: Hummock grasslands, shrub steppe; snakewood over soft spinifex & *Triodia wiseana* (Shepherd, 2009; GIS Database).

According to Shepherd (2009), Beard vegetation associations 98 and 103 retain approximately 100% of their pre-European extent. Therefore, the area proposed to be cleared is not a significant remnant of native vegetation in 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	~99.89	Least Concern	6.32
Beard vegetation associations - State					
98	309,630	309,630	~100	Least Concern	0.09
103	614,596	614,596	~100	Least Concern	2.00
Beard vegetation associations - Bioregion					
98	87,423	87,423	~100	Least Concern	0.03
103	614,056	614,056	~100	Least Concern	2.00

* 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)
- 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 may be at variance to this Principle**

According to available databases there are a few minor ephemeral drainage lines which intersect the application area and one medium sized ephemeral creek which crosses through the north-west section of the application area (GIS Database). These drainage lines only flow after major rainfall events (Astron Environmental Services, 2010). The ephemeral creek flows into the Ashburton River after heavy rain (Astron Environmental Services, 2010). Based on vegetation mapping by *Astron Environmental Services (2010)*, there is one riparian vegetation type associated with the drainage lines;

- **MD1** - This vegetation association was linked with the medium-sized creek which flows into the Ashburton River, along the western boundary of the proposed quarry area. This vegetation association comprised of *Corymbia hamersleyana*, *Corymbia candida* open woodland over *Acacia citrinoviridis* and *Acacia trachycarpa* (*Vachellia farnesiana*) tall open shrubland to tall shrubland over *Boerhavia buridgeana*, *Portulaca oleracea*, *Cleome viscosa* and *Trianthema triquetra* very open herbland over *Cenchrus ciliaris* tussock grassland.

The condition of the riparian vegetation type is classified as 'very good' (Keighery, 1994; GIS Database) and the clearing of some riparian vegetation is unlikely to result in any significant impact to vegetation growing in association with a watercourse or wetland.

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

Methodology Astron Environmental Services (2010)
GIS Database:
- Geodata, Lakes
- 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**

According to available databases, the application areas are comprised of the Boolaloo land system (GIS Database). This land system is characterised by granite hills, domes and tor fields and sandy plains with shrubby spinifex grasslands. This land system has few erosional surfaces. Vegetation on this system is not usually prone to grazing induced degradation (Van Vreeswyk et al., 2004).

The application area consists of mainly red loamy sand and may be quite vulnerable to erosion with the removal of vegetation. Drainage lines in the application area may also be impacted to sediment loading and physical impact to bed and banks as a result of vegetation clearing (Astron Environmental Services, 2010).

Based on the above the proposed clearing may be at variance to this Principle. Potential land degradation impacts as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

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

Methodology Astron Environmental Services (2010)
Van Vreeswyk et al (2004)
GIS Database
- Rangeland Land System Mapping

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

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

The application area is not located within any conservation area (GIS Database). The nearest conservation area is Cane River National Park, located approximately 32 kilometres north of the application area (GIS Database).

Given the distance of the application area from the Cane River National Park, the proposed clearing is not likely to provide a significant ecological linkage or fauna movement corridor and is not likely to impact the

environmental values of the conservation area.

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 areas are located within the proclaimed Pilbara groundwater area under the *Rights in Water and Irrigation Act 1994* (GIS Database). Any groundwater extraction and/or taking or diversion of surface water for the purposes other than domestic and/or stock watering is subject to licence by the Department of Water.

There are several ephemeral watercourses passing through the application areas which only support surface water for short periods following significant rainfall events (GIS Database; Astron Environmental Services, 2010). The drainage lines within the application area may be impacted by sediment loading and physical impacts to bed and banks as a result of riparian vegetation removal (Astron Environmental Services, 2010). To minimise disturbance to natural surface water flows, it is recommended that a culvert is used where the access track is proposed to cross the ephemeral creek to ensure that sedimentation and the physical impacts to the creekline are not increased.

The application areas lie within a low rainfall zone and any surface water within the application area is likely to only remain for short periods following significant rainfall events (BoM, 2011). The proposed clearing is not likely to cause deterioration in the quality of any surface water within or outside of the application areas.

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

Methodology Astron Environmental Services (2010)
BoM (2011)
GIS Database:
- Geodata, Lakes
- RIWI Act, Groundwater Areas
- Hydrography, Linear
- Public Drinking Water Source Areas

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

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

The application area experiences a semi-desert tropical climate with summer cyclonic or thunderstorm events, with an annual average rainfall of approximately 298.9 millimetres per year (CALM, 2002; BoM, 2011). Based on an average annual evaporation rate of 3,200- 3,600 millimetres (BoM, 2011), any surface water resulting from rainfall events is likely to be relatively short lived.

Given the size of the area to be cleared (55.55 hectares) compared to the size of the Ashburton catchment area (7,877,743 hectares) (GIS Database) it is not likely that the proposed clearing will lead to an appreciable increase in run off, and subsequently cause or exacerbate the incidence or intensity of flooding.

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

Methodology BoM (2011)
CALM (2002)
GIS Database:
- Hydrographic Catchments - Catchments
- Hydrography, Linear

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

Comments

There is one Native Title claim over the area under application (WC99/45). 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*.

There is one registered Aboriginal Site of Significance within the application area (Site ID: 11026) (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal sites of significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment and Conservation and the Department of Water, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

The clearing permit application was advertised on 24 October 2011 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the proposed clearing.

Methodology GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims - Determined by the Federal Court

4. References

- Astron Environmental Services (2010) BGC Nanutarra Quarry Level 1 Vegetation and Flora Survey. Consultant Report prepared for BGC Contracting Pty Ltd.
- Astron Environmental Services (2011) 5309 Nanutarra Fauna Desktop Assessment. Consultant Report prepared for BGC Contracting Pty Ltd.
- BoM (2011) Climate Statistics for Australian Locations. A Search for Climate Statistics for Emu Creek Station, Australian Government Bureau of Meteorology, viewed 21 October 2011, <http://reg.bom.gov.au/climate/averages/tables/cw_006072.shtml>.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Pilbara 3 (PIL3 - Hamersley subregion) Department of Conservation and Land Management, Western Australia.
- DEC (2011) NatureMap - Mapping Western Australia Biodiversity, Department of Environment and Conservation, viewed 21 October 2011, <<http://naturemap.dec.wa.gov.au>>.
- 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.
- 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.

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.