Government of Western Australia
Department of Mines and Petroleum

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2861/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Crescent Gold Limited**

1.3. Property details

Property: Mining Lease 38/318
Local Government Area: Shire of Laverton
Colloquial name: Grouse Pit Project

1.4. Application

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

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard Vegetation Associations have been mapped at a 1:250,000 scale for the whole of Western Australia. One Beard Vegetation Association has been mapped within the application area (GIS Database; Shepherd et al., 2001). 18: Low woodland; mulga (*Acacia aneura*) The application area was surveyed by J & J Tucker Environmental Solutions staff in April 2008 (J & J Tucker Environmental Solutions, 2008). The following vegetation type was identified within the application area. **Calciphtic Pearl Bluebush Shrublands (CPBS):** The open areas are dominated by sparse groundcover mainly comprising *Maireana* spp., principally *Maireana triptera, Solanum lasiophyllum*, *Frankenia, Ptilotus* spp. and occasional shrubs and small trees of *Hakea preissii*, *Acacia aneura, Alectryon oleofolius* and *Pittosporum angustifolium* (J & J Tucker Environmental Solutions, 2008). The CPBS vegetation unit is described as being dominated by *Acacia aneura*, *Hakea preissii, Eremophila oldfieldii* subsp. *angustifolia* scattered tall shrubs over *Maireana sedifolia, Maireana pyrdamidata* low chenopod shrubland over scattered grasses (J & J Tucker Environmental Solutions, 2008).	Crescent Gold Limited has applied to clear up to 6 hectares of native vegetation within a boundary of approximately 10 hectares for the purposes of mineral production (MBS Environmental, 2008). The Grouse Pit will be developed to maintain the annual throughput of ore at the Laverton Gold Plant and will use waste rock to rehabilitate the historical above ground tailings storage facility (MBS Environmental, 2008). Crescent Gold Limited intends to clear using bulldozers and scrapers and the vegetation is to be stockpiled for use in rehabilitation. All ore resources at Grouse will be mined by conventional open pit mining methods. The land at Grouse is heavily disturbed due to a combination of current pastoral, exploration and mining activities (MBS Environmental, 2008).	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).	The vegetation condition was derived from a vegetation survey conducted by J & J Tucker Environmental Solutions (2008).

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 occurs within the East Murchison Interim Biogeographic Regionalisation of Australia (IBRA) sub-region (GIS Database). This sub-region is characterised by internal drainage, and extensive areas

of elevated red desert sand plains with minimal dune development (CALM, 2002). It contains salt-lake systems associated with the occluded Paleodrainage system (CALM, 2002). This sub-region has broad plains of red-brown soils and breakaway complexes as well as red sand plains (CALM, 2002). The vegetation is dominated by Mulga woodlands often rich in ephemerals, hummock grasslands, saltbush shrub lands and Halosarcia shrub lands (CALM, 2002). The vegetation described within the application area (J & J Tucker Environmental Solutions, 2008) is typical of the bioregion.

A vegetation survey of the application area identified 51 species of native flora belonging to 24 genera from 19 families (J & J Tucker Environmental Solutions, 2008). This is considered to be biologically diverse. Chenopodiaceae, Myoporaceae and Mimosaceae families were the most diverse within the survey area (J & J Tucker Environmental Solutions, 2008). This is typical of the floristics of the Eastern Goldfields IBRA sub-region (CALM, 2002). It is not expected that the clearing of vegetation will increase the incidence of weed species within the application area or surrounding vegetation, but should a clearing permit be granted, it is recommended that a condition be imposed for the purposes of weed management.

An area search of the Western Australian Museum's Faunabase conducted by the assessing officer suggests that the application area is diverse in reptile species, particularly Skinks (28) (Western Australian Museum, 2009). The database search found 77 reptile species from 7 families as potentially occurring within the application area, or within a 50 kilometre radius of the application area.

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

Methodology

CALM (2002)
J & J Tucker Environmental Solutions (2008)
Western Australian Museum (2009)
GIS Database
- Interim Biogeographic Regionalisation of Australia

(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

The assessing officer has conducted a search of the Western Australian Museum's online fauna database between the co-ordinates 121.9888°E, 28.1540°S and 123.0186°E, 29.0721°S, representing a 50 kilometre radius around the application area.

This search identified 6 Amphibian, 13 Avian, 20 Mammalian and 77 Reptilian species that may occur within the application area (Western Australian Museum, 2009). Of these, the following species of conservation significance have previously been recorded within the search area: Numbat (*Myrmecobius fasciatus*), Bilby (*Macrotis lagotis*), Princess Parrot (*Polytelis alexandrae*) and the Crested Bellbird (*Oreoica gutturalis*).

Coffey Environments (2008) conducted a reconnaissance fauna survey of the application area on 15 May 2008. Coffey Environments (2008) conducted a desktop search of the Department of Environment and Conservation (DEC) threatened fauna database to identify species of conservation significance that had been recorded within the area specified. The co-ordinates used were similar to those used by the assessing officer above. In addition to those species listed above, the following fauna species of conservation significance were identified through this database search:

Mulgara (*Dasycercus cristicauda*), Banded Hare-wallaby (*Lagostrophus fasciatus fasciatus*), Malleefowl (*Leipoa ocellata*), Giant Desert Skink (*Egernia kintorei*), Peregrine Falcon (*Falco peregrinus*), *Brachinella apophysata*, Australian Bustard (*Ardeotis australis*), Slender-billed Thornbill (*Acanthiza iredalei iredalei*), Rainbow Bee-eater (*Merops ornatus*), Great Egret (*Ardea alba*), Oriental Plover (*Charadrius veredus*) and the Fork-tailed Swift (*Apus pacificus*).

Based on habitat requirements, the following species are most likely to occur within the application area:

Bilby (Schedule 1 - Fauna that is rare or is likely to become extinct, *Wildlife Conservation (Specially Protected Fauna) Notice, 2008)* were formerly known to occupy habitat ranging from Eucalyptus and Acacia woodlands in the wheatbelt of Western Australia to Triodia grasslands in the desert regions (DEC, 2009). They require sandy or loamy soil in which to burrow and are now only found in habitats which include mulga scrub and hummock grasslands on sandplains or along drainage or salt lake systems in Western Australia (DEC, 2009). The vegetation within the application area provides suitable habitat for this species, however given that the vegetation types are well represented throughout the bioregion and the small area proposed to clear (6 hectares) in relation to the size of the sub-region (7,847,996 hectares) it is unlikely that the application area contains significant habitat for this species.

The Peregrine Falcon (Schedule 4 - Other specially protected fauna, *Wildlife Conservation (Specially Protected Fauna) Notice, 2008*) is a wide ranging species that has little habitat specificity apart from an affinity with cliffs, tall trees for nesting and water (Pizzey & Knight, 1997). The application area may contain vegetation that provides suitable habitat for this species, however given that this species does not have a restricted range and the vegetation types that comprise its habitat are well represented throughout the bioregion, and the small area

proposed to clear (6 hectares) in relation to the size of the sub-region (7,847,996 hectares) it is unlikely that the application area contains significant habitat for this species.

The Australian Bustard (P4 - DEC Priority Fauna List) prefers tussock grassland, Triodia hummock grassland, grassy woodland and low shrub lands (Garnett & Crowley, 2000). This species has previously been recorded within the bioregion and so it is likely that the application area contains suitable habitat for this species. Given that the vegetation types are well represented throughout the bioregion and the small area proposed to clear (6 hectares) in relation to the size of the sub-region (7,847,996 hectares) it is unlikely that the application area contains significant habitat for this species.

The Princess Parrot (P4 - DEC Priority Fauna List) is highly nomadic and has a sporadic occurrence throughout the arid interior of Australia. This species occupies arid shrub lands, particularly favouring those dominated by Mulga over Spinifex, Casuarina and *Eucalyptus camaldulensis* (Cowan 2001; Coffey Environments, 2008). The Princess Parrot has previously been sighted within the region, however given that the vegetation types are well represented throughout the bioregion and the nomadic nature of this species it is unlikely that the application area contains significant habitat for this species.

The Crested Bellbird (P4 - DEC Priority Fauna List) favours the shrub-layer of eucalypt woodland, mallee, acacia shrubland, Triodia hummock grassland, saltbush and heath (Garnett & Crowley, 2000). The Crested Bellbird is relatively widespread over most of inland Australia (Garnett & Crowley, 2000). The vegetation within the application area provides suitable habitat for this species, however given that the vegetation types are well represented throughout the bioregion and the small area proposed to clear (6 hectares) in relation to the size of the sub-region (7,847,996 hectares) it is unlikely that the application area contains significant habitat for this species.

The Rainbow Bee-eater (migratory - JAMBA International Agreement) occurs mainly in open forests, woodlands and shrub lands but also occurs in inland and coastal sand dune systems and mangroves in Northern Australia (Western Australian Museum, 2009). This species is an opportunist and is known to inhabit a wide range of habitats (Pizzey & Knight, 1997). This species is likely to occur within the application area, however given that this species does not have a restricted range and the vegetation types that comprise its habitat are well represented throughout the bioregion it is unlikely that the application area contains significant habitat for this species.

The Fork-tailed Swift (Migratory - *Environmental Protection and Biodiversity Conservation Act 1999*) is reported to roost on cliffs and large trees, but it prefers open country where it is an aerial feeder rarely landing and is known to spend nights without landing (Pizzey and Knight, 1997). This species may occur within the application area however given that the vegetation types are well represented throughout the bioregion and the small area proposed to clear (6 hectares) in relation to the size of the sub-region (7,847,996 hectares) it is unlikely that the application area contains significant habitat for this species.

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

Methodology

Coffey Environments (2008)
Cowan (2001)
DEC (2009)
Garnett & Crowley (2000)
Pizzey & Knight (1997)
Western Australian Museum (2009)

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

Comments

Proposal is not likely to be at variance to this Principle

According to available databases, no Declared Rare Flora (DRF) species occur within the application area (GIS Database).

A flora survey was conducted over the application area by J & J Tucker Environmental Solutions in April 2008 (J & J Tucker Environemental Solutions, 2008). This survey involved the area being traversed by two people on foot. Different vegetation communities encountered during the survey were described and the vegetation associations were examined for the presence or absence of any DRF and Priority Flora species (J & J Tucker Environmental Solutions , 2008). As a result of this survey no DRF or Priority Flora species were identified as occurring within the application area (J & J Tucker Environmental Solutions , 2008). Due to the limited rainfall in the months prior to the survey annual and ephemeral flora were scarce and mainly absent during the survey (J & J Tucker Environmental Solutions, 2008).

J & J Tucker Environmental Solutions (2008) conducted a desktop search of available databases to identify any DRF and Priority flora that may be known to occur within the application area (J & J Tucker Environmental Solutions, 2008). The co-ordinates used were 28°24' - 28°55'S and 122°03' - 122°49'E (J & J Tucker Environmental Solutions, 2008). As a result of this search seven Priority 1 flora species and seven Priority 3 flora species were identified as possibly occuring within the application area. Of these there are three known annuals of conservation significance within the area: *Vittadinia cervicularis* var. *oldfieldii* (P1), *Goodenia lyrata*

(P1) and *Gunniopsis propinqua* (P3) (J & J Tucker Environmental Solutions, 2008). All these species have previously been recorded within other locations and the 6 hectares proposed to be cleared is unlikely to impact on these species.

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

Methodology J & J Tucker Environmental Solutions (2008)
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 available databases reveals that there are no Threatened Ecological Communities (TEC's) within the application area (GIS Database). There are no TEC's located within the East Murchison IBRA sub-region (CALM, 2002). MBS Environmental (2008) reported that no Threatened Ecological Communities were identified during the flora survey of the application area.

None of the vegetation types identified by MBS Environmental (2008) are threatened ecological communities or ecological communities at risk.

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

Methodology CALM (2002)
MBS Environmental (2008)
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 IBRA Murchison Bioregion (GIS Database). Shepherd et al. (2001) report that approximately 100% of the pre-European vegetation still exists in this Bioregion (see table below). The vegetation in the application area is recorded as Beard Vegetation Association 18: Low woodland; mulga (*Acacia aneura*) (GIS Database; Shepherd et al., 2001). According to Shepherd et al. (2001) approximately 100% of Beard Vegetation Association 18 remains within the Murchison Bioregion.

Therefore the vegetation within the application area is not 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 – Murchison	28,120,558	28,120,558	~100	Least Concern	~1.1
IBRA Subregion – Eastern Murchison	21,135,046	21,135,046	~100	Least Concern	~1.4
Beard veg assoc. – State					
18	19,892,437	19,890,348	~100	Least Concern	~2.1
Beard veg assoc. – Bioregion					
18	12,403,248	12,403,248	~100	Least Concern	~0.4

* Shepherd et al. (2001) updated 2005
** 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 et al. (2001)
GIS Database
- Pre-European Vegetation
- Interim Biogeographic Regionalisation for Australia

(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 likely to be at variance to this Principle

There are no permanent rivers, creeks or lakes within the application area. Skull Creek is the largest intermittent drainage line in the general area and is located approximately 150 metres to the south-west of the application area (MBS Environmental, 2008; GIS Database). About 100 metres to the east of the application area is an intermittent drainage line which flows into Skull Creek (MBS Environmental, 2008; GIS Database). The proposed clearing is unlikely to have any significant impact on any watercourses or wetlands.

The vegetation types identified by J & J Tucker Environmental Solutions (2008) as occurring within the application area are not examples of riparian vegetation.

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

Methodology

MBS Environmental (2008)
J & J Tucker Environmental Solutions (2008)
GIS Database
- Hydrography - Linear

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments

Proposal is not likely to be at variance to this Principle

The application area has been surveyed by the Department of Agriculture and Food (Van Vreeswyk et al., 1994). The application area is composed of the following land systems (GIS Database):

- Gundockerta Land System;
- Nubev Land System.

The Gundockerta Land System is described as extensive, gently undulating, calcareous, stony plains, supporting bluebush shrublands (Van Vreeswyk et al., 2004). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'hardpan plains' and 'stony plains' land units of the Gundockerta Land System. The soils of the 'stony plains' land unit are not susceptible to erosion due to abundant stony mantles while the soils of the 'hardpan plains' may be susceptible to water erosion, particularly in areas where shrub cover is substantially reduced and/or the soil surface is disturbed (Van Vreeswyk et al., 1994). The vegetation described by Van Vreeswyk et al. (1994) accurately reflects the vegetation types described in vegetation surveys conducted over the area (J & J Tucker Environmental Solutions, 2008).

The Nubev Land System is described as gently undulating stony plains, minor limonitic low rises and drainage floors, supporting mulga and halophytic shrublands (Van Vreeswyk et al., 1994). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'stony plains' land unit of the Nubev Land System. The stone mantles of these land units provide effective protection against soil erosion but the disturbance or removal of stone mantles may initiate soil erosion (Van Vreeswyk et al., 1994). The vegetation described by Van Vreeswyk et al. (1994) accurately reflects the vegetation types described in the vegetation surveys conducted over the area (J & J Tucker Environmental Solutions, 2008).

Based on the above, the proposed clearing is not likely to be at variance to this Principle. It is recommended that should a permit be granted, a condition be imposed on the permit with regard to stockpiling of all cleared topsoil and vegetation.

Methodology

J & J Tucker Environmental Solutions (2008)
Van Vreeswyk et al. (1994)
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 located approximately 135 kilometres to the north-east of an un-named Nature Reserve (GIS Database). At this distance it is not likely that the vegetation within the application area provides a buffer to a conservation area, or is an important ecological linkage to a conservation area. The vegetation types within the application area are well replicated in other land systems within the Murchison region. Consequently, their conservation status is under no threat.

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

Methodology

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 located within a Public Drinking Water Source Area (PDWSA) (GIS Database). Recent amendments by the Department of Water (2007) as proclaimed under the *Country Areas Water Supply Act 1947* on 20 May 2008, has revised the boundary of the Laverton PDWSA to the north of the application area and therefore the Laverton PDWSA is not likely to be impacted by the proposed development (MBS Environmental, 2008)

There are no permanent water bodies or watercourses within the application area (GIS Database). The application area is located in an arid region, with mainly winter rainfall (CALM, 2002). With an average rainfall of approximately 232.2 millimetres/year (BOM, 2009) and an annual pan evaporation rate of 3,200 millimetres (Luke et al., 1987), there is little surface flow during normal seasonal rains. The proposed clearing is not likely to cause the quality of surface water to deteriorate.

The application area is located within the Yilgarn Goldfields Groundwater Province (GIS Database). The groundwater salinity within the application area is approximately 1,000 - 3,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). Given the size of the area to be cleared (6 hectares) compared to the size of the Yilgarn Goldfields Groundwater Province (29,644,596 hectares) (GIS Database), the proposed clearing is not likely to cause groundwater or salinity levels within the application area to alter significantly.

There are no known Groundwater Dependent Ecosystems within the application area (GIS Database).

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

Methodology

BOM (2009)
CALM (2002)
Department of Water (2007)
Luke et al. (1987)
MBS Environmental (2008)
GIS Database
- Public Drinking Water Source Area
- Hydrography - Linear
- Groundwater - Provinces
- Groundwater Salinity
- Potential Groundwater Dependent Ecosystems

(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 is located within the Lake Carey catchment area (GIS Database). The size of the area to be cleared (6 hectares) in relation to the size of the Lake Carey catchment area (11,378,213 hectares) is not likely to lead to an increase in flood height or duration (GIS Database).

Low annual rainfall (approximately 232.2 millimetres) (BOM, 2009), high evaporation rates (3,200 millimetres/year) (Luke et al., 1987) and the absence of water bodies and watercourses in the application area (GIS Database) would suggest that this area is not subject to flooding.

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

Methodology

BOM (2009)
Luke et al. (1987)
GIS Database
- Hydrographic Catchments - Catchments

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

Comments

There is one native title claim (WC99_001) over the area under application. This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the 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*.

There is one known Aboriginal Site of Significance located approximately 4 km west-north-west of the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act*

1972 and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

The application area is located within the Laverton Water Reserve (PDWSA) (MBS Environmental, 2008; GIS Database). The Department of Water (DoW) considered the proposal and provided no comment (DoW, 2008).

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.

No public submissions were received in regard to this Permit application.

Methodology

DoW (2008)
MBS Environmental (2008)
GIS Database
- Aboriginal Sites of Significance
- Native Title Claims

4. Assessor's comments

Comment

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

It is recommended that should a permit be granted, conditions be imposed on the permit with regards to weed management, rehabilitation, recording the areas cleared and reporting.

5. References

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Van Vreeswyk, A.M.E., Pringle, H.J.R., and Gilligan, S.A. (1994) An Inventory and Condition Survey of the North-Eastern Goldfields, Western Australia, Department of Agriculture, Western Australia.

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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.
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.