Government of Western Australia
Department of Mines and Petroleum

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3585/1
Permit type: Purpose Permit

1.2. Proponent details

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

1.3. Property details

Property: *Iron Ore (Hamersley Range) Agreement Act 1963*
Mineral Lease 4SA (AML 70/4)
Local Government Area: Shire of Ashburton
Colloquial name: Extension of NTD4 and 5 Pits Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
22.8		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): 82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana* (Shepherd, 2007). Biota Environmental Sciences (Biota, 2007) on behalf of Rio Tinto, conducted a vegetation survey over the application area and its surrounding vegetation during August to October 2007. Twenty-eight vegetation types were identified during the vegetation survey, six of which occur within the application area (Biota, 2007). These are: **Vegetation of Stony Hills and Hillslopes** 1) *Acacia pruinocarpa*, *Corymbia deserticola*, *Eucalyptus leucophloia* subsp. *leucophloia*, *E. gamophylla* low open woodland over *Acacia hamersleyensis*, *A. marramamba*, *Stylobasium spathulatum* open shrubland over *Triodia wiseana* hummock grassland; 2) *Acacia aff. aneura* (narrow fine veined; site 1259), *A. rhodophloia*, *A. pruinocarpa* tall closed scrub over *Scaevola acacioides*, *Dodonaea pachyneura* scattered shrubs over *Triodia brizoides* open hummock grassland with *Eriachne mucronata* very open tussock grassland; 3) *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia aneura* (flat curved; MET 15,548), *A. pruinocarpa* tall shrubland over *Themeda triandra* closed tussock grassland with *Vittadinia arida* open herbland; **Vegetation of Colluvial Spurs and Foothills** 4) *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia bivenosa* (spindly variant) tall open scrub over *Stylobasium spathulatum* shrubland over *Triodia wiseana* scattered hummock grasses;	Hamersley Iron Pty Ltd is proposing to clear up to 22.8 hectares of native vegetation (Biota, 2007). The application area is located approximately 6.6 kilometres south-west of Tom Price (GIS Database). The proposed clearing is for the purpose of extending the NTD 4 and 5 pits at Tom Price mine and the relocation of a water pipeline/diversion drain (Biota, 2007). Vegetation will be cleared with a dozer, blade down. Vegetation will be stockpiled and used in rehabilitation.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994). To Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).	Vegetation descriptions were derived from descriptions by Biota Environmental Sciences (Biota, 2007).

Vegetation of Gullies

5) *Eucalyptus ferriticola* subsp. *ferriticola* low open woodland over *Acacia pruinocarpa*, *Grevillea berryana* tall open shrubland over *Stylobasium spathulatum* open shrubland over *Eriachne mucronata* scattered tussock grasses;

Vegetation of Creeklines

6) *Acacia citrinoviridis* tall open scrub over *Cenchrus ciliaris* tussock grassland.

3. Assessment of application against clearing principles

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

Comments

Proposal is not likely to be at variance to this Principle

The application area is located within the Hamersley subregion of the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). This subregion is characterised by mountainous areas of Preterozoic sedimentary ranges and plateaux, dissected by gorges (basalt, shale and dolerite) (Kendrick, 2001). The Hamersley subregion generally contains mulga low woodland over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges (Kendrick, 2001).

The vegetation within the application area consists of Beard Vegetation Association 82, which is considered both common and widespread throughout the Pilbara region, with approximately 100% of this pre-European vegetation type remaining (GIS Database; Shepherd, 2007).

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

Biota Environmental Sciences (Biota, 2007) on behalf of Hamersley Iron Pty Ltd conducted a vegetation survey over the application area between August and October 2007. A total of 272 flora species were recorded during the survey from 112 genera belonging to 47 families (Biota, 2007). The number of species recorded appears to be relatively low for an application area of this size in the Tom Price locality, however, this is considered to be more a reflection of the limited sampling to date, rather than an indication that the area has a low species richness (Biota, 2007). The dominant families, genera and assemblage of species present within the application area are typical of the local area and are also representative of the greater Pilbara region (Biota, 2007).

No DRF, Threatened Ecological Communities or Threatened Fauna Species were noted across the application area (Biota, 2007). One Priority Flora species (*Indigofera ixocarpa* - Priority 2) was identified within the application area (Biota, 2007). This one population of 20+ individuals was recorded in 2004 by Rio Tinto (Biota, 2007). The impact of clearing within the application area on the conservation status of this species is considered minimal as *Indigofera ixocarpa* is also common at other areas within the Tom Price locality (Biota, 2007).

The introduced flora species *Cenchrus ciliaris* (Buffel Grass) was recorded from one location within the application area (Biota, 2007). This species is not a Declared Plant according to the *Agriculture and Related Resources Protection Act 1976*, although it is considered to be a serious environmental weed. Should a permit be granted, it is recommended that the appropriate condition be imposed on the permit for the purpose of weed management.

A fauna survey was undertaken by Biota Environmental Sciences (Biota, 2009) in July and September 2007 and July 2008. This study identified 96 vertebrate species, comprising 57 avifauna species, 15 mammals and 24 herpetofauna species (Biota, 2009). This does not appear to indicate a particularly diverse assemblage, with the species recorded being representative of the taxa commonly recorded in this part of the bioregion (Biota, 2009).

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

Methodology

Biota (2007)
Biota (2009)
Kendrick (2001)
Shepherd (2007)
GIS Database:
-Declared Rare and Priority Flora
-IBRA WA (Regions - Sub Regions)
-Pre European Vegetation

(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

Biota Environmental Sciences conducted a fauna survey over the application area and its surrounding vegetation (Section 10 study area) in July and September 2007, and July 2008 (Biota, 2009). This study identified a combined total of 96 vertebrate species, comprising 57 avifauna species, 15 mammals and 24 herpetofauna species (Biota, 2009).

A review of the habitats and known distributions suggested that five Schedule fauna species and one Priority Fauna species could potentially occur within the Section 10 study area. These are:

Schedule 1 - Fauna that is rare or likely to become extinct, Wildlife Conservation (Specially Protected Fauna) Notice, 2010: *Dasyurus hallucatus* (Northern Quoll) - listed as 'Endangered' under the EPBC Act 1999; *Liasis olivaceus* subsp. *barroni* (Pilbara Olive Python) - listed as 'Vulnerable' under the EPBC Act 1999; *Rhinonicteris aurantius* (Orange Leaf-nosed Bat) - listed as 'Vulnerable' under the EPBC Act 1999;

Schedule 3 - Migratory birds protected under an international agreement, Wildlife Conservation (Specially Protected Fauna) Notice, 2010: *Merops ornatus* (Rainbow Bee-eater) (Biota, 2009);

Schedule 4 - Other specially protected fauna, Wildlife Conservation (Specially Protected Fauna) Notice, 2010: *Falco peregrinus* (Peregrine Falcon); and

Priority 4 - Department of Environment and Conservation Priority Fauna List: *Pseudomys chapmani* (Western Pebble-mound Mouse).

Of the conservation significant species listed above, the Pilbara Olive Python, Rainbow Bee-eater and Western Pebble-mound Mouse were the only ones recorded during the fauna survey, however the Pilbara Olive Python was recorded outside the application area (Biota, 2009). According to Biota (2009), the scale of the proposed clearing presents a low risk of significant impact occurring to the availability of habitat for these Schedule species. In the case of the Rainbow Bee-eater and the Western Pebble-mound Mouse, a small proportion of local habitat suitable for these taxa would be cleared relative to their wider distribution in the region (Biota, 2009).

The results from the Biota (2009) fauna survey are in keeping with other similar surveys completed in the region and do not appear to indicate a particularly diverse assemblage (Biota, 2009). The species recorded during the fauna survey are representative of the taxa commonly recorded in this part of the bioregion (Biota, 2009). Available habitat data indicates that no restricted or uncommon geological units or land systems occur within the application area (Biota, 2009).

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

Methodology

Biota (2009)
DEC (2007)
GIS Database:
-Threatened Fauna

(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 datasets, there are no known records of Declared Rare Flora (DRF) or Priority Flora species within the application area (GIS Database). The closest known DRF from available databases is *Lepidium catapycnon*. One population of this species has been recorded approximately 450 metres south-east of the application area (GIS Database). This location plus all other recorded locations of *Lepidium catapycnon* have been protected and are excluded from all proposed clearing operations (Biota, 2007).

Biota Environmental Sciences (Biota, 2007) conducted a vegetation survey over the application area between August and October 2007. No species of DRF or *Environmental Protection and Biodiversity Conservation Act 1999* listed threatened species were identified within the application area (Biota, 2007). One Priority Flora species was identified within the application area: *Indigofera ixocarpa* - Priority 2.

Indigofera ixocarpa has a main distribution occurring within a 30 to 40 kilometre radius of Tom Price and another population between Nullagine and Marble Bar (Biota, 2007; Western Australian Herbarium, 1998). This species seems to favour disturbed rocky ironstone slopes that have recently been burnt (Western Australian Herbarium, 1998). Based on the flora and vegetation survey conducted by Biota Environmental Sciences, this clearing will result in the removal of 20+ individual plants of *Indigofera ixocarpa* (Biota, 2007). Given that this would result in a very small percentage of the Tom Price population being removed, and with another population between Nullagine and Marble Bar, it is unlikely that this clearing proposal will significantly threaten *Indigofera ixocarpa*.

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

Methodology Biota (2007)
Western Australian Museum (1998)
GIS Database:
-Declared Rare and Priority Flora

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

Comments

Proposal is not likely to be at variance to this Principle

According to available databases, there are no known Threatened Ecological Communities (TEC's) or Priority Ecological Communities within the application area (GIS Database; Biota, 2007). The closest known TEC is located approximately 35 kilometres north-east of the application area (GIS Database). According to Biota Environmental Sciences (Biota, 2007), the closest known PEC to the study area is approximately 48 kilometres north-east.

None of the vegetation communities identified within the application area are representative of a TEC or an ecological community at risk (Biota, 2007).

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

Methodology Biota (2007)
GIS Database:
-Threatened Ecological Sites (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 is located within the Pilbara Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Shepherd (2007) report that approximately 99.95% of the pre-European vegetation still exists in the Pilbara Bioregion. The vegetation in the application area is broadly mapped as Beard Vegetation Association 82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana* (GIS Database: Kendrick, 2001). According to Shepherd (2007) there is approximately 100% of these vegetation types remaining in the Pilbara Bioregion and the State (see table below).

According to the Bioregional Conservation Status of Ecological Vegetation Classes the conservation status for Beard Vegetation Association 82 within the Pilbara Bioregion is of 'Least Concern' (Department of Natural Resources and Environment, 2002).

Although several large scale mining operations are located within a 50 kilometre radius of the application area, the Pilbara Bioregion remains largely uncleared (GIS Database). As a result the conservation of the vegetation association within the bioregion is not likely to be impacted upon by the proposal.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion – Pilbara	17,804,188	17,794,647	~99.95	Least Concern	6.32
Beard veg assoc. – State					
82	2,565,901	2,565,901	~100	Least Concern	10.2
Beard veg assoc. – Bioregion					
82	2,563,583	2,563,583	~100	Least Concern	10.2

* Shepherd (2007)
** 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)
Kendrick (2001)
Shepherd (2007)

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 is at variance to this Principle

According to available databases, there are no permanent watercourses or wetlands within the application area (GIS Database). Several ephemeral watercourses converge within the application area; however these are only very minor ephemeral drainage lines which only flow following significant rainfall (GIS Database; Biota, 2007).

Two vegetation types associated with riparian vegetation were identified within the application area (Biota, 2007):

Vegetation of Gullies
Eucalyptus ferriticola subsp. *ferriticola* low open woodland over *Acacia pruinocarpa*, *Grevillea berryana* tall open shrubland over *Stylobasium spathulatum* open shrubland over *Eriachne mucronata* scattered tussock grasses;

Vegetation of Creeklines
Acacia citrinoviridis tall open scrub over *Cenchrus ciliaris* tussock grassland.

The vegetation of gullies is considered to be of moderate conservation significance primarily due to the value as refugia for fire-sensitive species and other species preferring such rocky, mesic habitats (Biota, 2007). This vegetation type makes up a small portion of the application area, and represents only 3.4% of this vegetation type mapped for the Section 10 area and infrastructure corridor (Biota, 2007).

Based on the above, the proposed clearing is at variance to this Principle. Given the extent of the vegetation types remaining in the local area, the proposed clearing is not likely to significantly impact on the availability or conservation values of these vegetation types.

Methodology

Biota (2007)
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

According to available datasets, the application area is comprised of the Newman Land System (GIS Database).

The Newman Land System is described as rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands (Van Vreeswyk et al., 2004). An analysis of aerial photography for the application area reveals it is most likely to occur on the landform units 'Plateaux, ridges, mountains and hills', 'Lower slopes' and 'Narrow drainage floors with channels' (GIS Database; Van Vreeswyk et al., 2004). Landscapes present within the Newman Land System are at the end point of millions of years of erosion and withstand massive rainfall events on an annual basis without an appreciable increase in land degradation or erosion (Biota, 2007).

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

Methodology

Biota (2007)
Van Vreeswyk et al. (2004)
GIS Database:
-Mount Lionel 50cm Orthomosaic
-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 situated within a Department of Environment and Conservation managed conservation area (GIS Database). The nearest conservation estate is Karijini National Park, which is situated approximately 15 kilometres east of the application area (GIS Database; Biota, 2007). It is not likely that the vegetation within the application area provides a buffer to a conservation area (especially as the application area is within the existing Tom Price Mine), or is important as an ecological linkage to a conservation area (Biota, 2009).

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

Methodology Biota (2009)
GIS Database:
-DEC Tenure

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

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

The application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The closest PDWSA is the Millstream Water Reserve located approximately 45 kilometres north of the application area (GIS Database). Given the distance between the PDWSA and the application area, it is not likely the proposal will have an impact on the quality of the PDWSA.

There are no permanent water bodies or watercourses within the application area (GIS Database). A number of minor ephemeral creeklines are present, however these are minor systems that only flow after heavy rainfall (GIS Database). Due to the small size of the application area, and surface water only being present following heavy rainfall, the proposed clearing is not likely to impact on the quality of any surface water.

The proposed clearing is located within the Hamersley Groundwater Province (GIS Database). The groundwater salinity within the application area is approximately 500 - 1000 milligrams/litre Total Dissolved Solids (TDS) (GIS Database). This is considered to be potable water. Given the size of the area to be cleared (22.8 hectares) compared to the size of the Hamersley Groundwater Province (approximately 10,166,832 hectares) (GIS Database), the proposed clearing is not likely to cause salinity levels within the application area or adjoining areas to alter significantly.

Tom price is a very large iron ore mine and mining operations have had a significant impact on the local hydrogeology (Biota, 2007). Tom Price has a significant draw down cone in active dewatering areas with groundwater being monitored by a team of hydrogeologists who report annually to the Department of Water under the 5C abstraction licences (Biota, 2007). Due to the existing operations surrounding the application area, the impact of additional clearing within the mine footprint is considered as unlikely to have any additional impact on groundwater quality.

The Pilbara experiences unpredictable and erratic rainfall and the rocky-sloping topography of much of the upper catchments often produce considerable runoff (Biota, 2007; Van Vreeswyk et al., 2004). The ephemeral drainage lines tend to have high levels of sedimentation and turbidity after rainfall events (Biota, 2007; Van Vreeswyk et al., 2004). The proposed clearing is unlikely to increase sediment loads significantly compared to natural events in the surrounding areas (Biota, 2007).

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

Methodology Biota (2007)
GIS Database:
-Groundwater Provinces
-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 an average annual rainfall of 405.3 millimetres recorded from the nearest weather station at Tom Price, approximately six kilometres north-east of the application area (GIS Database; BoM, 2010).

Local flooding occurs seasonally in the Pilbara region as a result of cyclonic activity and sporadic thunderstorm activity (ANRA, 2007; Biota, 2007). It is likely the ephemeral drainage lines within the application area would experience natural seasonal flooding during times of intense rainfall (Biota, 2007).

The application area is located within the Ashburton River catchment area (GIS Database). However, the area to be cleared (22.8 hectares) in relation to the size of the Ashburton River catchment area (7,877,743 hectares) is not likely to increase the potential for flooding within the application area, local area or within the catchment (GIS Database).

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

Methodology ANRA (2007)
Biota (2007)
BoM (2010)
GIS Database:

-Hydrographic Catchments - Catchments
-Towns

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

Comments

There is one Native Title Claim (WC97/089) over the area under application (GIS Database). 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*.

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

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

The clearing permit application was advertised on 22 February 2010 by the Department of Mines and Petroleum inviting submissions from the public. One submission was received raising no objections to this Proposal.

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 the proposed clearing is at variance to Principle (f), is not likely to be at variance to Principles (a), (b), (c), (d), (g), (h), (i) and (j) and is not at variance to Principle (e).

Should a clearing permit be granted, it is recommended that conditions be imposed on the permit for the purposes of weed management, record keeping and permit reporting.

5. References

ANRA (2007) Australian Natural Resources Atlas: Rangelands Overview; Pilbara. Available online from: http://www.anra.gov.au/topics/rangelands/overview/wa/ibra-pil.html Last accessed 29 March 2010.

Biota (2007) Biota Environmental Sciences - A Vegetation and Flora Survey of the West Turner Section 10 Area and Infrastructure Corridor. A report prepared for Pilbara Iron, December 2007.

Biota (2009) Biota Environmental Sciences - A Two Phase Fauna Survey of the West Turner Syncline Area. A report prepared for Pilbara Iron, May 2009.

BoM (2010) Bureau of Meteorology. Climate statistics for Australian locations, Summary statistics for Tom Price. Available online from: http://www.bom.gov.au/climate/averages/tables/cw_005072.shtml Last accessed 29 March 2010.

DEC (2007) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. Available online from: http://naturemap.dec.wa.gov.au/ Last accessed 29 March 2010.

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Western Australian Herbarium (2010) Florabase: The Western Australian Flora. Department of Environment and Conservation. Available online from: http://florabase.calm.wa.gov.au/ Last accessed 29 March 2010.

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.