Department of Industry and Resources

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2762/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: **Phil & Craig Bywaters**

1.3. Property details

Property: Mining Lease 70/1079
Local Government Area: Shire Of Dalwallinu

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2.8		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
The area applied to clear has been broadly mapped at a scale of 1:250,000 as: Beard Vegetation Association 125: Bare areas; salt lakes (Shepherd et al, 2001).	This clearing permit application is for an Area Permit to clear up to 2.8 hectares of native vegetation for the continuation of an existing gypsum mining operation within the Lake Goorly salt lake system, a lake in excess of 12,100 hectares within the northern wheatbelt region (GIS Database).	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).	The lake and surrounding areas have historically been used for agricultural and mining purposes, and previous gypsum mining activity has resulted in disturbance and modification of sections of Lake Goorly adjacent to the areas proposed to be cleared. The areas proposed to be cleared are of a small scale and effectively form a divide between two previously mined areas (GIS Database).

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 proposal is for the clearing of 2.8 hectares of native vegetation within the fringes of the Lake Goorly salt lake system, a lake in excess of 12,100 hectares within the northern wheatbelt region (GIS Database). Photographs of the proposed clearing areas show the vegetation present to be representative of a Samphire/Chenopod shrubland with scattered woodland species, including Casuarina spp, found futher away from the fringes of the lake. It is likely that the species present within the application areas are widespread, both locally and regionally (GIS Database). It is unlikely that the biodiversity values within the application areas would be considered outstanding, or of a higher diversity than similar sites within the Lake Goorly salt lake system. However, it is acknowledged that the areas under application would be likely to have greater biodiversity values than 88% of the land area in the Shire of Dalwallinu which has been cleared for agriculture (Shepherd et al, 2001).

The lake and surrounding areas have historically been used for agricultural and mining purposes, and previous gypsum mining activity adjacent to the application areas has resulted in disturbance and modification of sections of Lake Goorly near the areas proposed to be cleared (GIS Database). It is likely that these disturbances have impacted on the biodiversity values of the areas under application.

The Clearing Assessment Unit of the former Department of Conservation and Land Management (CALM) provided advice for CPS 1012/1 on 23 May 2006. The assessing officer deems this advice to be applicable for this application due to the presence of similar issues and its relative proximity to the project area covered under CPS 1012/1. The comments previously offered were that the CALM Merredin District advise that there are no significant conservation values in, or within close proximity to the site in question (CALM, 2006).

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

Methodology CALM (2006).
Shepherd et al. (2001).
GIS Databases:
- Geodata, Lakes.
- Mongers 50 cm Orthomosaic - Landgate 2004/2005.
- 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

No known vertebrate or invertebrate fauna surveys have been conducted over the Lake Goorly salt lake system. Inland saline environments in Western Australia have been poorly studied to date (Jellison, 2005).

The most widely recognised ecological value of salt lakes is as habitat for migratory and nesting populations of birds (Jellison, 2005). Ephemeral salt lakes such as Lake Goorly are likely to serve this function on the rare occasion that water is present.

The proposed clearing of 2.8 hectares of predominantly Samphire/Chenopod shrubland along the fringes of Lake Goorly, an extensive salt lake system in excess of 12,100 hectares (GIS Database), is unlikely to result in a loss of significant habitat for fauna indigenous to Western Australia. It must also be acknowledged that the areas proposed to be cleared are of a small scale and effectively form a divide between two previously mined areas (GIS Database). Disturbance associated with historical mining activity is likely to have impacted upon the quality of the vegetation found within the areas under application. Similar fringing vegetation can be found along the vast margins of the Lake Goorly salt lake system and hence it is unlikely that the vegetation found within the application areas would represent significant habitat for nesting and/or migratory birds, as well as other indigenous fauna species.

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

Methodology Jellison (2005).
GIS Databases:
- Geodata, Lakes.
- Mongers 50 cm Orthomosaic - Landgate 2004/2005.

(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

The following three rare flora databases were searched to determine whether Declared Rare Flora (DRF) or Priority Flora have previously been recorded within or surrounding the proposed clearing area:

1. The Department of Environment and Conservation's (DEC) Threatened (Declared Rare) Flora database;
2. The Western Australian Herbarium Specimen database; and
3. The DEC's Declared Rare and Priority Flora List.

The search coordinates used were 29° 51' - 30° 02'S and 116° 49' - 117° 02' E (GDA94). The search area was approximately 400 square kilometres, centred on the proposed clearing areas (DEC, 2008).

Based on the database search results, there are no known records of DRF or Priority Flora within the proposed clearing areas (DEC, 2008). A number of DRF and Priority species have been recorded in surrounding localities. These include:

Gyrostemon reticulatus (R)
Eremophila vernicosa (R)
Rhizanthella gardneri (R)
Acacia inceana subsp. latifolia (P1)
Grevillea pinifolia (P1)
Grevillea nana subsp. abbreviata (P2)
Eremophila sargentii (P2)
Grevillea asparagoides (P3)
Grevillea granulosa (P3)
Grevillea tenuiloba (P3)
Phebalium brachycalyx (P3)
Acacia isoneura subsp. isoneura (P3)
Acacia scalena (P3)
Calytrix plumulosa (P3)
Darwinia sp. Morawa (P3)
Euryomyrtus recurva (P3)

Lechenaultia galactites (P3)
Psammomoya implexa (P3)
Urodon capitatus (P3)
Verticordia venusta (P3)
Stylidium diuroides subsp. paucifoliatum (P4) (DEC, 2008).

Based on habitat preferences, none of the above listed species are likely to be found in the proposed clearing area or the Lake Goorly salt lake system (Western Australian Herbarium, 2008).

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

Methodology DEC (2008).
Western Australian Herbarium (2008).

(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**
There are no known Threatened Ecological Communities (TEC's) within the proposed clearing areas (GIS Database). The nearest known TEC is located approximately 40 kilometres to the south (GIS Database). Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology 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 likely to be at variance to this Principle**
The proposed clearing areas fall within the Avon Wheatbelt Interim Biogeographic Regionalisation of Australia (IBRA) Ancient Drainage subregion and the Shire of Dalwallinu (GIS Database). Shepherd et al. (2001) report that approximately 18.6% of the pre-European vegetation exists in the Avon Wheatbelt IBRA Ancient Drainage subregion, whilst approximately 12% of the pre-European vegetation remains in the Shire of Dalwallinu.

The vegetation in the application areas is classified as Beard Vegetation Association 125: Bare areas; salt lakes (Shepherd et al, 2001). According to Shepherd et al. (2001), approximately 49% of this vegetation type remains within the Avon Wheatbelt IBRA Ancient Drainage subregion, with 0.5% held in reserves (see table below).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves (and current %)
IBRA Bioregion – Avon Wheatbelt	9,517,117	1,468,711	~15.4	Vulnerable	1.6 (7.6)
IBRA subregion – Ancient Drainage	6,524,183***	1,212,882***	~18.6	Vulnerable	1.6 (6.6)
Shire of Dalwallinu	595,418***	71,228***	~12.0	Vulnerable	
Beard veg assoc. – State					
125	3,491,834	3,287,864	~94.2	Least concern	6.9 (5.2)
Beard veg assoc. – Subregion					
125	148,569	72,764	~49.0	Depleted	8.1 (0.5)

* Shepherd et al. (2001) updated 2005
** Department of Natural Resources and Environment (2002)
*** Area within the Intensive Landuse Zone

Although the Bioregional Conservation status of Beard Vegetation Association 125 is rated as 'Depleted' based on current pre-European vegetation extent (Department of Natural Resources and Environment, 2002), it should be acknowledged that the scale of clearing associated with this proposal is small (2.8 hectares) in comparison to the extent of Beard Vegetation Association 125 which remains within the Avon Wheatbelt IBRA Ancient Drainage subregion (approximately 49%) (Shepherd et al, 2001). In addition, historical disturbances have also impacted on the quality of vegetation within the application areas.

In addition, the proponent has advised that approximately 0.5 hectares of vegetation will be cleared at a time and the site will be progressively rehabilitated to ensure that the ecological values of the site are restored after the mining operation has been completed (C. Bywaters, landowner and proponent, pers. comm. 19th December 2008). The proponent has demonstrated their commitment to restoring the vegetation in previously mined areas

and these areas have been restored successfully, as seen during a site visit to Lake Goorly on 3rd April 2008. Based on the above commitment and demonstrated ability to successfully implement rehabilitation, vegetation loss resulting from mining activity is likely to be temporary. It is recommended that should a permit be granted, conditions are imposed to ensure that progressive rehabilitation takes place.

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

Methodology

Department of Natural Resources and Environment (2002).
Shepherd et al. (2001).
GIS Databases:
- Interim Biogeographic Regionalisation of Australia.
- Interim Biogeographic Regionalisation of Australia (subregions).
- Local Government Authorities.
- 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

The proposal is for the clearing of 2.8 hectares of native vegetation within the Lake Goorly salt lake system, an extensive lake system within the northern wheatbelt region (GIS Database).

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

The vegetation present within the application areas is largely representative of a Samphire/Chenopod shrubland and contains a range of species that are likely to be widespread, both locally and regionally. Lake Goorly is periodically inundated but largely dry for most months within an average year, however, the areas proposed for disturbance are not subject to inundation or waterlogging as they are not situated within a salt lake depression (C. Bywaters, landowner and proponent, pers. comm. 19th December 2008). Due to the small scale of the proposed clearing, there will be no impact on the water table. Furthermore, considering the lake system is dry for most of the year, no wetland or groundwater dependent ecological communities of conservation significance are likely to be affected as a result of the clearing associated with this proposal. The assessing officer considers it unlikely that the proposed clearing of native vegetation will have a significant impact upon the Lake Goorly salt lake system, or any other watercourse or wetland.

The proponent has advised that mining activity will be restricted to the months during which dry conditions are experienced on the lake (C. Bywaters, landowner and proponent, pers. comm. 19th December 2008). Although the proposal is at variance to this Principle due to its location, the vegetation proposed to be cleared is typical of that associated with salt lake systems throughout the wheatbelt and is not considered to have significant environmental values.

The proponent has advised that the site will mined in 0.5 hectare stages, and that progressive rehabilitation will be carried out to ensure that the ecological values of the site are restored after the mining operation has been completed (C. Bywaters, landowner and proponent, pers. comm. 19th December 2008). In order to rehabilitate the site, the topsoil and overburden material will be backfilled into those areas where gypsum has been extracted (C. Bywaters, landowner and proponent, pers. comm. 19th December 2008). These areas will then be ripped to facilitate germination of seed stored in the topsoil, as well as that seed that has blown in from outside the mined area. A site visit to Lake Goorly by the Assessing Officer, DoIR, confirmed that previous post-mining rehabilitation on Lake Goorly has been successful in allowing Samphire vegetation to recolonise after gypsum mining.

Methodology

GIS Database:
- Hydrography, linear.
- Geodata, Lakes.

(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 Department of Agriculture and Food Western Australia (DAFWA) previously provided comment for CPS 1012/1, and the Commissioner for Soils and Land Conservation subsequently instructed that the same advice applied for CPS 1382/1 (J. Dean, A/Project Support Officer, Soils and Land Conservation, Department of Agriculture and Food Western Australia, pers. comm. 27th July 2006). Given that advice for these two proposals related to gypsum mining on Lake Goorly it is deemed relevant to this assessment.

The previous advice relating to these proposals was that the proposed gypsum mining operation is unlikely to cause land degradation in the form of on-site or off-site salinity, soil erosion or eutrophication (DAFWA, 2006).

The proponent has advised that the site will be mined in 0.5 hectare stages, and that progressive rehabilitation

will be carried out (C. Bywaters, landowner and proponent, pers. comm. 19th December 2008). In order to rehabilitate the site, the topsoil and overburden material will be backfilled into those areas where gypsum has been extracted. These areas will then be ripped to facilitate germination of seed stored in the topsoil, as well as that seed that has blown in from outside the mined area. During a previous site visit to Lake Goorly undertaken by the assessing officer, it was evident that post-mining rehabilitation has been successful in allowing Samphire vegetation to recolonise after gypsum mining.

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

Methodology DAFWA (2006).

(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

Jibberding Nature Reserve is located approximately 15 kilometres south-west of the proposed clearing areas (GIS Database). Whilst Lake Goorly comprises part of a linkage to Jibberding Nature Reserve, it is not considered that the removal of vegetation within the application areas would significantly affect this ecological linkage.

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

The areas proposed to be cleared do not fall within a Public Drinking Water Source Area (GIS Database).

The areas under application are located within the Lake Goorly salt lake system (GIS Database). This lake has a shallow water table and contains water that is highly saline and of poor quality (C. Bywaters, landowner and proponent, pers. comm. 19th December 2008). Groundwater salinities of the areas under application are typically in excess of 35,000 milligrams/Litre of Total Dissolved Solids (GIS Database). It is unlikely that the proposed clearing will decrease the quality of the already hypersaline underground water. The proponent has advised that the bed of the salt lake contains many depressions within which water accumulates following significant rainfall events (C. Bywaters, landowner and proponent, pers. comm. 19th December 2008). The vegetation proposed to be cleared does not fall within such a depression, and considering that the lake is dry for most of the year, the proposal is not likely to impact on surface water quality.

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

Methodology GIS Databases:
- Geodata, Lakes.
- Groundwater Salinity, Statewide.
- Hydrography, linear.
- Public Drinking Water Source Areas (PDWSAs).

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

Comments

Proposal is not likely to be at variance to this Principle

The areas proposed to be cleared are located within the northern wheatbelt region and experience approximately 300 millimetres of rainfall per year on average (GIS Database). It is only during and after heavy rainfall events that Lake Goorly is prone to inundation, however, as the areas under application are not situated within low-lying sections of this lake system, they are not prone to holding water (C. Bywaters, landowner and proponent, pers. comm. 19th December 2008).

Based on the above information and the fact that the area proposed to be cleared is associated with a broad salt lake system within which rainfall and surface water can be evenly spread and distributed, it is unlikely that the clearing associated with this proposal will result in flooding or an incremental increase in peak flood height.

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

Methodology GIS Database:
- Rainfall, Mean Annual.

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

Comments

The clearing permit application was advertised by the Department of Industry and Resources (DoIR), inviting submissions from the public and direct interest parties. One public submission was received from direct interest parties. This submission raised concerns regarding the potential impacts of the proposed vegetation clearing on Aboriginal heritage issues.

There are no native title claims over the area under application (GIS Database). The mining tenement has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993.*

There are no registered Sites of Aboriginal Significance within the area applied to clear (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.

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.

Methodology

GIS Databases:
- 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 at variance to Principle (f), and is not likely to be at variance to Principles (a), (b), (c), (d), (e), (g), (h), (i) or (j).

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

5. References

CALM (2006) Land clearing proposal advice for clearing application CPS 1012/1. Advice to Program Manager, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR). Department of Conservation and Land Management, Western Australia.

DAFWA (2006) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food, Western Australia.

DEC (2008) Rare Flora Information. 18 February 2008. Department of Environment and Conservation, Western Australia.

Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.

Jellison, R. (2005) Commentary - Saline Systems: IX international conference on salt lake research: Research opportunities and management challenges. Available: http://www.salinesystems.org/content/1/1/12.

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., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

Western Australian Herbarium (2008). Florabase - The Western Australian Flora. Department of Environment and Conservation. http://florabase.calm.wa.gov.au/ (Accessed 23/12/2008).

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.