Department of Industry and Resources

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 1885/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Norilsk Nickel Cawse Pty Ltd**

1.3. Property details

Property: Mining Lease M24/543
Mining Lease M24/519

Local Government Area: City Of Kalgoorlie-Boulder

Colloquial name: Eastern Waste Dump

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
33.63		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 vegetation located within the project area has been mapped at a 1:250,000 scale as Beard vegetation association 10, and is described as: Medium woodland; red mallee. The vegetation within the proposed clearing area was mapped at a scale of 1:100,000 by Mattiske (1998). The following vegetation associations were described: 1d: Open Woodland of *Casuarina eristata* over low shrubs of Atriplex and Acacia over dense herbs of Rhodanthe, Schoenia and introduced thistle Centaurea on drainage lines. 1f: Woodland of *Eucalyptus salmonophloia* and *E. transcontinentalis* over *E. clelandii* and Casuarina over midstorey of Eremophila and Acacia and understorey of Maireana and Atriplex on broad valleys. The application area falls predominantly within vegetation association 1d, which is well represented in the surrounding area (Mattiske, 1998).	The proposed clearing is for the development of a waste dump for Norilsk Nickel Cawse Pty Ltd (hereafter referred to as Norilsk Nickel). The site is located within the existing Cawse Nickel Operations Project Area, approximately 55 kilometres North West of Kalgoorlie. The proponent has applied to clear a maximum area of 33.63 hectares within a permit application area totalling 33.63 hectares. The application area is located within the Mt Vetters Pastoral Lease and immediately adjacent to an operational minesite. Vegetation within the application area has been previously disturbed by grazing, mining and exploration activities.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994). To Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).	The vegetation condition is based on the Keighery (1994) vegetation condition scale, from aerial photography and an assessment provided by OMG Cawse (2007). Following an acquisition of OMG Cawse Pty Ltd by Norilsk Nickel, the company name was officially changed to Norilsk Nickel Cawse Pty Ltd. References will therefore be made to OMG Cawse (2007), referring to information provided for a previous clearing permit application 1737/1.

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 East Murchison Subregion and the Murchison Region of the Interim Biogeographic Regionalisation of Australia (IBRA) (GIS Database). It is also located close to the boundary of the Eastern Goldfields Subregion (GIS Database). The biodiversity values of both subregions were assessed by Cowan (2001a & 2001b).

The vegetation of the East Murchison Subregion is dominated by Mulga Woodlands often rich in ephemerals; hummock grasslands, saltbush shrublands and Halosarcia shrublands (Cowan, 2001a).

The proposal is not located within any of the ecosystems considered at risk for either IBRA subregion (Cowan, 2001a & 2001b). Aerial imagery provided by the proponent as well as other aerial imagery available to the Department of Industry and Resources (DoIR) both show that the application area has been impacted by adjacent mining activities and is sparse and degraded (OMG Cawse, 2007; GIS Database).

Due to the level of disturbance that has already occurred within the proposed clearing area as a result of grazing and mining activities, and the broad representation of the vegetation type in the area (Mattiske, 1998), it is unlikely that the proposal will result in the clearing of native vegetation that has higher biodiversity attributes than that of the surrounding undisturbed vegetation.

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

Methodology

Cowan (2001a)
Cowan (2001b)
Mattiske (1998)
OMG Cawse (2007)
GIS Database:
- Bardoc 1.4m Orthomosaic - DLI02
- Interim Biogeographic Regionalisation of Australia (Subregions) EA 18/10/00

(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

There are no known records of fauna of conservation significance within 28 kilometres of the proposed clearing area (GIS Database). A desktop fauna survey was conducted by J & J Tucker (OMG Cawse, 2007) that found that seven species of rare fauna may occur in the Cawse area. The seven species are: Malleefowl, Peregrine Falcon, Grey Falcon, Major Mitchell's Cockatoo, Crested Shrike-tit, Carpet Python (Western subspecies) and Woma Python.

Of the seven species, Malleefowl *Leipoa ocellata* (Schedule 1, fauna that is rare or likely to become extinct, 'Wildlife Conservation (Specially Protected Fauna) Notice, 2006') is the only species known to occur within the Cawse leases. However, no active or inactive Malleefowl mounds were found in the vicinity of the proposed clearing area (OMG Cawse, 2007).

The Peregrine Falcon *Falco peregrinus* (Schedule 4, other specially protected fauna, 'Wildlife Conservation (Specially Protected Fauna) Notice, 2006'), a wide ranging bird, has little habitat specificity apart from an affinity with cliffs, tall trees for nesting, and water (Pizzey & Knight, 1997). Given the lack of cliffs, tall trees or perennial watercourses within the project area, the proposal is unlikely to affect this species.

The Grey Falcon *Falco hypoleucos* (listed by the Department of Environment and Conservation (DEC) as Priority 4, taxa in need of monitoring) is a wide ranging bird known to nest along watercourses in tall *Eucalyptus camaldulensis* (Garnett & Crowley, 2000). Due to the non perennial nature of the local watercourses, and the lack of *E. camaldulensis*, the Grey Falcon is not likely to be affected by the proposed clearing.

The western subspecies of Major Mitchell's Cockatoo *Cacatua leadbeateri* (Schedule 4, other specially protected fauna, 'Wildlife Conservation (Specially Protected Fauna) Notice, 2006') is classified as 'Least Concern', and its main habitat requirement is suitable nesting hollows (Garnett & Crowley, 2000). As the application area is degraded, and the dominant vegetation association is classified as 'Medium woodland; red mallee', it is unlikely that tree species that form hollows (*Eucalyptus salmonophloia, E. wandoo, E. camaldulensis*) will be affected, and therefore unlikely that the proposed clearing will have a significant impact on the habitat of this species.

The proposed clearing area is at the edge of the range of the south-western Crested Shrike-tit *Falcunculus frontatus leucogaster* (listed by DEC as Priority 4, taxa in need of monitoring) (Garnett & Crowley, 2000).

The Carpet Python (Western subspecies) *Morelia spilota imbricata* (Schedule 4, other specially protected fauna, 'Wildlife Conservation (Specially Protected Fauna) Notice, 2006') inhabits temperate climatic areas with good winter rains and dry summers, and has been recorded in semi-arid coastal and inland habitats, Banksia woodlands, eucalypt woodlands and grasslands (WA Museum, 2003).

The Woma Python *Aspidites ramsayi* (listed by DEC as Priority 1, taxa with few, poorly known populations on threatened lands) is found in the arid zones of Western Australia. It tends to favour open myrtaceous heath on sandplains, and dunefields dominated by spinifex (*Triodia* spp.) (WA Museum, 2003).

While some of the vegetation proposed to be cleared may be suitable habitat for the two above mentioned python species, the amount being cleared is unlikely to result in significant impacts to either species. Furthermore, the Carpet Python subspecies is highly ecologically flexible and tends to adapt to whatever habitats are available (Pearson *et al.,* 2005).

The application area has been previously disturbed by grazing and mining activities, which has resulted in sparse and degraded vegetation, and a decrease in the value of fauna habitats within the application area. Additionally, the vegetation association found within the application area is well represented in the surrounding area. As the key habitat requirements of the seven species of conservation significance listed above are not located in the clearing area, it is unlikely that the proposed clearing will impact upon fauna of conservation significance.

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

Methodology

Garnett & Crowley (2000)
Mattiske (1998)
OMG Cawse (2007)
Pearson *et al.* (2005)
Pizzey & Knight (1997)
WA Museum (2003)
GIS Database:
- Threatened Fauna - CALM 30/9/05

(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

No Declared Rare Flora (DRF) or Priority Flora are known to occur within the proposed clearing area (GIS Database).

The nearest known population of flora of conservation significance is the Priority 1 listed species *Eremophila praecox*, which is recorded approximately 30 kilometres to the south of the proposed clearing site (GIS Database).

Eremophila pustulata, (previously listed as Priority 3), was found in the vicinity of the application area (OMG Cawse, 2007). A nearby survey of 1.5 million hectares, conducted in 2000 - 2001 by CALM (as cited in OMG Cawse, 2007) found populations of *Eremophila pustulata* covering more than 10,000 hectares and this species has since been removed from the DEC Priority list (OMG Cawse, 2007).

Eucalyptus jutsonii, Priority 2, has been previously recorded in the vicinity of the application area (OMG Cawse, 2007). No *Eucalyptus jutsonii* were found within the current Cawse leases (OMG Cawse, 2007), so it is unlikely that this species will be affected by the proposed clearing.

The applicant has stated that they will adhere to flora management principles of minimum initial disturbance followed by re-establishment of local flora as quickly as possible after mining (OMG Cawse, 2007).

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

Methodology

OMG Cawse (2007)
GIS Database:
- Declared Rare and Priority Flora list CALM 01/07/05

(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 (TECs) within the East Murchison IBRA subregion (Cowan 2001a). No known TECs are located in the vicinity of the application area, or within the application area itself (GIS database; OMG Cawse, 2007).

Furthermore, the proposal is not located within any of the ecosystems at risk mentioned in Cowan (2001a).

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

Methodology

Cowan (2001a)
Cowan (2001b)
GIS Database:
- Threatened Ecological Communities CALM 12/04/05

(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 area proposed to be cleared does not represent a significant remnant of native vegetation in an extensively cleared area. The vegetation association proposed to be cleared is classified as Beard vegetation association 10, Medium woodland; red mallee group description (GIS database). According to Shepherd *et al.* (2001), approximately 65,388 hectares or 100% of Beard vegetation association 10 remains for the Eastern Murchison IBRA Subregion.

Although there is no recorded land in reserves or DEC managed land for Beard vegetation association 10 in the Eastern Murchison Subregion, the subregional extent is approximately 100% uncleared, and therefore the proposed clearing does not pose a threat to the conservation of this vegetation association.

	Pre-European area (ha)	Current extent (ha)	Remaining %*	Conservation Status**	% in reserves/DEC-managed land
IBRA Bioregion - Murchison	28,120,558	28,120,558	~100%	Least concern	~1.1%
Shire of Kalgoorlie - Boulder	No information available				
IBRA Subregion – Eastern Murchison	21,135,046	21,135,046	~100%	Least concern	~1.4%
Beard vegetation association (Subregion) - 10	65,388	65,388	~100%	Least concern	~0.0%

* Shepherd *et al*. (2001)
** Department of Natural Resources and Environment (2002)

Options to select from: Bioregional Conservation Status of Ecological Vegetation Classes **(Department of Natural Resources and Environment 2002)**	
Presumed extinct	Probably no longer present in the bioregion
Endangered*	<10% of pre-European extent remains
Vulnerable*	10-30% of pre-European extent exists
Depleted*	>30% and up to 50% of pre-European extent exists
Least concern	>50% pre-European extent exists and subject to little or no degradation over a majority of this area
*** or a combination of depletion, loss of quality, current threats and rarity gives a comparable status**	

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 DA 01/01

(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 nearest perennial wetland is located 28 kilometres west of the proposed clearing site (GIS Database; ANCA, 1996).

According to available databases, a minor, non perennial drainage line traverses the proposed eastern waste dump (GIS Database), and a minor, non perennial watercourse runs parallel to the application area approximately 60 – 100 metres west of the proposed waste dump.

As there is a drainage line within the application area, the proposed clearing is at variance to this Principle. However, the removal of vegetation from around the drainage line is of minor concern, as the area is degraded and practically devoid of vegetation (GIS Database; Norilsk Nickel, 2007). Additionally, the applicant will establish diversion drainage structures in order to maintain existing drainage patterns downstream (OMG Cawse, 2007).

Methodology ANCA (1996)
Norilsk Nickel (2007)
OMG Cawse (2007)
GIS Database:
- Geodata, Lakes - GA 28/06/02
- Hydrography, Linear - DoE 1/2/04
- Rivers 250K - GA

(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 area proposed to be cleared was surveyed by the Department of Agriculture and Food (DAFWA) and has been mapped as Bunyip Land System, which comprises of alluvial plains with gilgaied central drainage tracts (GIS Database; DAFWA, 2007).

The alluvial plain land unit has deep red earth soils that support chenopod shrubland and scattered acacia shrubs. This land unit is moderately susceptible to soil erosion if cleared. Alteration of natural flow regimes can also adversely affect native vegetation down gradient (DAFWA, 2007).

Throughout the Cawse leases, soils are highly weathered clays, gravely clays and sandy clays with neutral to slightly alkaline pH. Soil profiles vary from thin topsoil over rocky substrate on slopes to deep loamy clays on floodplains, where topsoil and subsoil are indistinguishable in structure and vary only in organic content and microbial activity (OMG Cawse, 2007).

Erosion control has been a major factor in dump design and choice of rehabilitation techniques for Norilsk Nickel. Rehabilitation of the Southern Waste Dump has proven that establishment of good vegetation cover can be achieved and that erosion can be controlled (OMG Cawse, 2007). Practices which proved effective on the Southern Waste Dump, such as vegetative armouring, use of fresh topsoil and planting and irrigating local native species, will be employed on the Eastern Waste dump (OMG Cawse, 2007).

The proponent will establish diversion drainage structures in order to maintain existing drainage patterns downstream (OMG Cawse, 2007).

The proposed surface water management measures, waste rock dump design and rehabilitation scheme are expected to minimise soil erosion and adverse impacts on native vegetation (DAFWA, 2007).

Furthermore, the proposed clearing is unlikely to exacerbate land degradation by water logging and water erosion given the low annual rainfall and minimal surface water flow in the application area. With an average annual rainfall of approximately 257 mm, and high annual evaporation rates of approximately 2,800 mm (GIS Database), recharge to groundwater would be low, effectively minimising the risk of salinisation.

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

Methodology DAFWA (2007)
OMG Cawse (2007)
GIS Database:
- Evaporation Isopleths - BOM 09/98
- Mean Annual Rainfall Surface (1975 - 2003) DoW
- Topographic Contours, Statewide DOLA 19/09/02

(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 nearest conservation area to the proposed clearing site is the Clear and Muddy Lakes 'C' class Nature Reserve/ Rowles Lagoon System (ANCA, 1996), which is located approximately 28 kilometres west of the application area (GIS Database).

The wetlands surface inflow originates from numerous creeks up to 25 kilometres away, mainly to the south-west (ANCA, 1996). The wetland system has been classified as 'fair' condition, and the catchment area as 'moderately disturbed' with no notable threatened flora or fauna (Cowan 2001b). A potential threat facing the wetland system is siltation resulting from pollution of inflow water due to leachate from mine sites (Cowan 2001b). However, given the distance separating the clearing area and the Nature Reserve, the proposal is unlikely to impact this or any other conservation areas.

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

Methodology ANCA (1996)

Cowan (2001b)
GIS Database:
- CALM Managed Lands and Waters CALM 1/7/05
- Geodata, Lakes - GA 28/06/02

(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).

There are no permanent creeks in the application area. One minor, non perennial drainage line transects the application area, and another minor, non perennial watercourse is located parrallel to the application area (GIS Database). The watercourse, which is located approximately 60 – 100 metres to the west, becomes active only after significant rainfall events (GIS Database; OMG Cawse, 2007). Diversion drainage structures will be established around the waste dump in order to maintain existing drainage patterns downstream (OMG Cawse, 2007).

Waste material will be stockpiled using management strategies designed to minimise potential runoff of the topsoil and sedimentation of the watercourse or the drainage line (OMG Cawse, 2007).

Groundwater within the area under application is saline at between 14,000 - 35,000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). Given the size of the proposed clearing and the already saline nature of the groundwater, the quality of the groundwater is unlikely to be impacted by the proposed clearing activity.

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

Methodology

OMG Cawse (2007)
GIS Database:
- Groundwater Salinity, Statewide - DoW Properties
- Hydrography, Linear - DoE 1/2/04
- Public Drinking Water Source Areas DoE 7/2/06
- Rivers 250K – GA

(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 Kalgoorlie-Boulder region is classified as semi-desert and characterised by hot summers and cool winters, with an average annual rainfall of 257 mm and average annual evaporation rates of 2,800 mm (GIS Database). There are no major watercourses lines within the proposed clearing site, however a minor, non perennial drainage line transects the application area and a minor, non-perennial watercourse runs parallel to the application area (GIS Database).

The clearing of 33.63 hectares within the Raeside-Ponton, Sale Lake Basin catchment, which has a total area of more than 11 million hectares (GIS Database), is unlikely to result in an increase in flooding incidence or intensity.

The proponent will establish diversion drainage structures in order to maintain existing drainage patterns downstream (OMG Cawse, 2007).

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

Methodology

OMG Cawse (2007)
GIS Database:
- Evaporation Isopleths - BOM 09/98
- Hydrographic Catchments - Catchments - DoE 23/3/05
- Hydrography, Linear - DoE 1/2/04
- Rainfall, Mean Annual - BOM 30/09/01
- Rivers 250K – GA

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

Comments

There is a native title claim over the area under application; WC98_027. This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenement has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (ie. 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 known Aboriginal Sites of Significance within the application area. Five Aboriginal Sites of Significance (480, 536, 188, 189 and 21321) are located within tenements M24/519 and M24/543 (GIS Database; DIA, 2007). The nearest of these sites is located approximately 180 metres from the application area. Advice received from the DIA dated 30 May 2007 to the Assessing Officer indicates that five Section 18 notices under the *Aboriginal Heritage Act 1972*, have been submitted in relation to the Cawse Nickel Project and tenements M24/517, M24/519 and M24/543. The Aboriginal Cultural Material Committee (ACMC) assessed the information submitted relating to DIA site 21321 (Cawse Find Isolated Artefact) as not meeting the terms of Section 5 of the *Aboriginal Heritage Act 1972* and thus, at this time, is not a site under the *Aboriginal Heritage Act 1972* (DIA, 2007). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no site of Aboriginal significance is damaged through the clearing process.

The proposed Eastern Waste Dump for Norilsk Nickel Cawse Pty Ltd is subject to the *Mining Act 1978* approval process. A mining proposal must be approved by DoIR prior to the commencement of the proposed works.

It is the proponent's responsibility to liaise with DEC and the DoW 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

DIA (2007)
Norilsk Nickel Cawse Pty Ltd
GIS Database:
- Native Title Claims-DLI 7/11/05
- Sites of Aboriginal Significance DIA

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Comment / recommendation
Mineral Production	Mechanical Removal	33.63	Assessment against the ten clearing principles identified that the proposed clearing is not at variance to Principle e, not likely to be at variance to Principles a, b, c, d, g, h, i, j, and at variance to Principle f. Although there is a minor non perennial watercourse within the application area the removal of vegetation from around the watercourse is considered of minor concern, as the area is degraded, practically devoid of vegetation, and bordering an active minesite. The assessing officer recommends that the permit be granted subject to the following conditions. 1. The Permit Holder shall record the following for each instance of clearing: a) the location where the clearing occurred, expressed as grid coordinates using the Geocentric Datum of Australia 1994 coordinate system; b) the size of the area cleared in hectares; c) the method of clearing; d) the purpose of clearing; e) the area rehabilitated in hectares; and f) the dates on which the area was cleared. 2. The Permit Holder shall provide a report to the Director, Environment, Department of Industry and Resources by 31 March each year for the life of the permit setting out the records required under Condition 1 of this permit in relation to clearing carried out between 1st January and 31st December the previous year. This report can be included as an addendum to the Annual Environmental Report submitted to DoIR.

5. References

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WA Museum (2003) FaunaBase and WA Fauna List. Western Australian Museum, Perth.

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.