Department of Industry and Resources

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2103/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **BHP Billiton Iron Ore Pty Ltd**

1.3. Property details

Property: State Agreement Act, Mineral Lease ML244SA (AML70/244)
Local Government Area: Shire of East Pilbara
Colloquial name: Orebody 25 Eastern Ridge exploration

1.4. Application

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

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 majority of the vegetation of the application area is broadly mapped as Beard Vegetation Associations 18: low woodland; mulga (*Acacia aneura*); and 82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana* (GIS Database). A small section at the eastern end of the application area is broadly mapped as Beard Vegetation Association 29: Sparse low woodland; mulga, discontinuous in scattered groups (GIS Database). A flora survey of the Orebody 25 minesite and surrounding areas, was conducted by Ecologia in June 1995. The survey included 27 100m2 quadrats, representing all the vegetation types of the survey area (Ecologia, 1995). The vegetation of the Orebody 25 area was further mapped in September-October 2005, and classified as five major vegetation types and twelve sub-types, broadly associated with topographic features (BHP 2007b; Ecologia, 1995, 2005). All vegetation types are well represented in the Pilbara Region (Ecologia, 1995; GIS Database).	BHP Billiton Iron Ore Pty Ltd have applied to clear up to 20 hectares of native vegetation within a total application area of approximately 1650 hectares, for the purposes of mineral exploration for the Orebody 25 Eastern Ridge exploration drilling project. The application area includes the whole of the existing Orebody 25 minesite, and surrounding areas. The aim of the proposed drilling programme is to gain a better understanding of the extent of the orebody (BHP Billiton, 2007b). Clearing will be for approximately 30 drill pads, and associated sumps and access tracks. Each drill pad will be approximately 20m x 20m, each sump will be approximately 5m x 2m x 1m deep, and access tracks will be approximately 4m wide (BHP Billiton, 2007a). Existing tracks and other previously disturbed areas will be utilised wherever possible. Where new tracks are required, they will be established using raised blade clearing techniques wherever practicable (BHP Billiton, 2007a). Drill pads and sumps will be mechanically cleared using earth moving equipment with a lowered blade. All topsoil and vegetation will be stockpiled for later use in rehabilitation. All drill pads and sumps will be rehabilitated within twelve months.	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 application area is located at the existing Orebody 25 opencut iron ore mine, which is located approximately 8 km north-east of the town of Newman, in the Pilbara region (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 application area is located on the boundary of the Pilbara and Gascoyne Bioregions of the Interim Biogeographic Regionalisation for Australia (IBRA), with the majority of the application area falling within the Hamersley subregion of the Pilbara IBRA Region. The Hamersley sub-region is characterised by 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 (CALM, 2002).

The application area is immediately adjacent to an operational minesite, mine roads and infrastructure (BHP

Billiton, 2007b; GIS Database), and the areas proposed to clear are unlikely to be of higher biodiversity than the surrounding undisturbed areas.

A vegetation survey of the Orebody 25 minesite and surrounding areas conducted by Ecologia in June 1995 recorded 211 taxa from 41 families and 93 genera. The number of taxa recorded was relatively high, due to substantial rainfall prior to the survey. Seventy seven annual taxa were recorded, which would not have been recorded during a drier season. Ecologia (1995) concluded that the number of taxa collected reflected the favourable season rather than a high level of diversity. Two weed species: Ruby Dock, *Acetosa vesicaria*; and Common Sowthistle, *Sonchus oleraceus* were recorded in the survey (Ecologia, 1995). The presence of introduced flora species is likely to reduce the biological diversity of the proposed clearing area. Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Should a clearing permit be granted, it is recommended that a condition be imposed for the purposes of weed management.

A fauna survey of the Orebody 25 minesite and surrounding areas conducted by Ecologia in June 1995 recorded a total of 52 fauna species (three mammals, 40 birds and nine reptiles) (BHP Billiton, 2007b). Ecologia (2005) reported that this was a relatively low number compared to other surveys conducted in the region.

The landforms, vegetation types and fauna habitats in the application area are well represented in the Pilbara Region, including within the Karijini and Chichester Range National Parks (Ecologia, 1995; Ecologia, 2005; GIS Database). Some flora and fauna of conservation significance are known to occur within the application area, however these species are not expected to be impacted as a consequence of the proposed clearing. The sparse nature of the proposed clearing for exploration drill pads and access tracks is unlikely to have any significant impact on the biological diversity of the region.

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

Methodology

BHP Billiton (2007b).
CALM (2002).
Ecologia (1995).
Ecologia (2005).
GIS Database:
- Interim Biogeographic Regionalisation of Australia (subregions)
- Pre-European Vegetation - DA 01/01.
- Western Australia ETM 25m 543 - AGO 2004

(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

A fauna survey of the Orebody 25 minesite and surrounding areas conducted by Ecologia in June 1995 recorded a total of 69 fauna species (six native and one introduced mammal, 47 birds and 15 reptiles) (Ecologia, 1995). Ecologia conducted a review of the flora and fauna of the Orebody 25 area in 2005. Compared to fauna surveys conducted at other nearby minesites, the number of fauna species recorded at Orebody 25 was relatively low (Ecologia, 2005). The main habitat types identified within the application area were: Scree Slope; Spinifex Drainage; Ridges/Hills, Gully; and Spinifiex Steppe (Ecologia, 1995; Ecologia, 2005). Spinfex Steppe was the most widespread of the habitat types (Ecologia, 2005).

Two fauna species of conservation significance were recorded in the survey area: the Western Pebble-mound Mouse, *Pseudomys chapmani* (P4); and the Peregrine Falcon, *Falco peregrinus* (Schedule 4) (Ecologia, 1995).

One active mound of the Western Pebble-mound Mouse was recorded within the Orebody 25 survey area (Ecologia, 1995). This species constructs pebble mounds of small stones and its preferred habitat is on gentle slopes with suitable sized stones. This species is relatively widespread in the Pilbara, and is well represented in areas outside the application area (Ecologia, 2005). The sparse nature of the proposed clearing is unlikely to have any significant impact on the available habitat for this species, however any active pebble mounds located during the proposed works should be avoided.

The Peregrine Falcon has been recorded in areas adjacent to the minesite, however this species is highly mobile and its habitat is unlikely to be significantly affected by the proposed clearing (Ecologia, 1995).

A section of the Homestead Creek passes through the application area. Although dry for most of the year, the creekline and associated vegetation may provide specialised habitats for fauna. In the Environmental Management Plan for the proposed exploration activities, BHP Billiton have stated that no exploration drilling will be undertaken within major drainage lines, or within a 20 metre buffer from the boundary of riparian vegetation (BHP Billiton, 2007a).

The fauna habitat types found in the application area are widespread in the Pilbara region (Ecologia, 2005; GIS Database), and the comparatively small area of proposed clearing scattered over a large application area, and

adjacent to an existing minesite is unlikely to have any significant impact on fauna habitats in the region.

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

Methodology BHP Billiton (2007a).
Ecologia (1995).
Ecologia (2005).
GIS Database - Pre-European Vegetation - DA 01/01.

(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 nearest known Declared Rare Flora are six populations of *Lepidium catapycnon* which occur fairly close together approximately 11-15km west/southwest of the application area (GIS Database). CALM databases have no records of any other populations of Declared Rare or Priority flora within a 50km radius of the areas applied to clear (GIS Database).

No species of Declared Rare Flora were recorded during the vegetation survey (Ecologia, 1995; Ecologia, 2005). Two Priority Flora species have been recorded in the application area. *Eremophila magnifica* was recorded by Ecologia in 1995, and by BHP Billiton in 2000 (Ecologia, 2004b). A targeted search conducted by Ecologia in 2004, recorded large numbers in an area to the west of the Orebody 25 minesite (Ecologia, 2005). *Eremophila magnifica* is now classified on the DEC Florabase database as 'not threatened', however two subspecies are listed as Priority Flora: *E. magnifica subsp magnifica* (P4) and *E. magnifica subsp velutina* (P3). The DEC Florabase database (WA Herbarium, 2008) has records for all three subspecies in the Pilbara region, from areas outside the minesite. *Triumfetta leptacantha* (P3) was recorded by BHP Billiton in 2000 from the area surrounding the Orebody 25 minesite, however subsequent searches by Ecologia in 2004, failed to relocate this species (BHP Billiton, 2007b). *Triumfetta leptacantha* is a small shrub, which grows on rocky outcrops on upper slopes throughout the Pilbara (Ecologia, 2005).

The proposed clearing of 20 ha spread over a total area of approximately 1650 ha is unlikely to have any significant impact on any Declared Rare or Priority flora. Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology BHP Billiton (2007b).
Ecologia (1995).
Ecologia (2005).
GIS Database:
- Declared Rare and Priority Flora List - CALM 01/07/05.
- Pre-European Vegetation - DA 01/01.

WA 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 area applied to clear (GIS Database). The nearest known TEC is the Ethel Gorge aquifer stygobiont community which is located approximately 1.2 km northeast of the eastern end of the application area (GIS Database). Groundwater drawdown is listed as a threatening process for the Ethel Gorge stygofauna (CALM, 2002), however the proposed clearing for exploration activities is not expected to have any effect on groundwater levels.

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

Methodology CALM (2002).
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 application area falls mostly within the IBRA Pilbara Bioregion with a small section at the eastern end of the application area falling within the Gascoyne Bioregion. Shepherd et al. (2001) report that approximately 100% of the pre-European vegetation still exists in these two Bioregions. The vegetation in the application area is recorded as Beard Vegetation Associations 18: low woodland; mulga (*Acacia aneura*); 29: Sparse low woodland; mulga, discontinuous in scattered groups; and 82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana* (GIS Database). According to Shepherd et al., (2001) there is approximately 100% of these vegetation types remaining.

Although large scale mining operations are located in close proximity to the application area, the region in which the clearing is proposed to occur has not undergone broad scale clearing. Hence the application area does not represent a significant remnant of native vegetati on in an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	% of Pre-European area in IUCN Class I-IV Reserves
IBRA Bioregion – Gascoyne	18,075,253	18,075,253	100	Least Concern	1.9
IBRA Bioregion – Pilbara	17,804,164	17,794,164	99.9	Least Concern	6.3
Beard vegetation associations – WA					
18	19,892,437	19,890,348	100	Least Concern	2.1
29	7,904,064	7,904,064	100	Least Concern	0.3
82	2,565,930	2,565,930	100	Least Concern	10.2
Beard vegetation associations – Gascoyne Bioregion					
18	3,273,632	3.273,632	100	Least Concern	2.5
29	3,802,497	3,802,497	100	Least Concern	0.0
82	2,320	2,320	100	Least Concern	0.0
Beard vegetation associations – Pilbara Bioregion					
18	676,561	676,561	100	Least Concern	16.8
29	1,133,228	1,133,228	100	Least Concern	1.9
82	2,563,610	2,563,610	100	Least Concern	10.2

* Shepherd et al. (2001) updated 2005
** Department of Natural Resources and Environment (2002)

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

Methodology Dept 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 southern boundary of the application area roughly follows the alignment of Homestead Creek. The creekline is outside the application area at the western end, and just inside the application area at the eastern end (GIS Database). Homestead Creek is an ephemeral creek that drains into the Fortescue River downstream of Ophthalmia Dam. It is dry for most of the year, only flowing briefly immediately following significant rainfall (BHP Billiton, 2007b; GIS Database). Four other minor seasonal drainage lines cut through the application area, draining to the south and north off the ridge, and then flowing east as tributaries of Homestead Creek (GIS Database).

As there is a watercourse within the application area, the proposal is at variance to this Principle. However, the proposed clearing is unlikely to result in any significant impact on Homestead Creek or any other watercourse or wetland. No drilling will occur within Homestead Creek, or associated riparian vegetation (BHP Billiton, 2007b). Minor drainage lines will be avoided where practicable (BHP Billiton, 2007b).

Methodology BHP Billiton (2007b).
GIS Database:
- Hydrography, Linear - DOE 01/02/04.
- Lakes, 1M - GA 01/06/00.
- 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 application area is located within and immediately adjacent to the Orebody 25 minesite. The soils within the Orebody 25 minesite area are mainly stony, shallow loams, however there are large areas with no soil cover, particularly on the hills (Ecologia, 1995).

The majority of the application area lies within the Newman Land System, with a small area along the north-western side falling within the Boolgeeda Land System, and a narrow strip along the southern boundary falling within the Elimunna Land System (GIS Database).

The Newman Land System consists of jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands. This land system is not prone to erosion (Van Vreeswyk et al., 2004).

The Elimunna Land System is described as stony plains on basalt, supporting sparse Acacia and Cassia shrublands and patchy tussock grasslands on red loamy earths and clay soils. The soils on these level plains are likely to be protected from erosion by stony mantles (Van Vreeswyk et al., 2004). This land system is not generally regarded as being susceptible to soil erosion.

The Boolgeeda Land System consists of stony lower slopes and plains below hill systems, supporting hard and soft spinifex grasslands and mulga shrublands. This land system is generally not susceptible to erosion (Van Vreeswyk et al., 2004).

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

Methodology

BHP Billiton (2007b).
Van Vreeswyk et al. (2004)
GIS Database:
- Rangeland Land System Mapping - DA.

(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

There are no conservation areas in the vicinity of the application area. The nearest DEC managed lands are the Collier National Park, approximately 120km south of the application area; and the Karijini National Park, approximately 120km west/northwest of the application area (GIS Database).

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

Methodology

GIS Database:
- CALM Managed Lands and Waters - CALM 1/07/05.

(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 located within the Newman Water Reserve, a Public Drinking Water Source Area (PDWSA) (GIS Database). All activities conducted within the PDWSA, should be in accordance with the Department of Water (DoW) Land Use Compatibility Tables (DoW, 2007). The proponent is advised to follow the Water Quality Protection Guidelines for the mining and mineral industry, produced by the DoW, to minimise any risk that the proposed clearing and associated activities may pose to the Water Reserve (DoW, 2007). Groundwater quality monitoring is conducted as part of the existing mine operations at the Orebody 25 minesite (BHP Billiton, 2007b).

The application area includes part of Homestead Creek (GIS Database; BHP Billiton, 2007b). The creek is dry most of the year, only flowing briefly following significant rainfall. No drilling will occur within Homestead Creek, or associated riparian vegetation (BHP Billiton, 2007b). Minor drainage lines will be avoided where practicable (BHP Billiton, 2007b). Sumps will be used to prevent release of sediments into surface water flows. Surface water quality is monitored at three sites along Homestead Creek and at one site along a minor drainage channel (BHP Billiton, 2007b).

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

Methodology

BHP Billiton (2007b).
DoW (2007).
GIS Database:
- Hydrography, Linear - DOE 1/02/04.

- Public Drinking Water Source Areas - DOE 09/08/05.

(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 includes part of the Homestead Creek flood-plain (BHP Billiton, 2007b). The creek is dry most of the year, only flowing briefly following significant rainfall. Natural flooding occurs occasionally during the wet season (November to March) following significant rainfall events (BHP Billiton, 2007b).

The proposed clearing of 20 ha spread over a total area of approximately 1650 ha is not likely to cause or exacerbate the incidence or intensity of flooding.

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

Methodology BHP Billiton (2007b).

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

Comments

One public submission was received for this clearing permit application. The submission suggested that the vegetation proposed to be cleared should be considered as a significant remnant of native vegetation in an area that has been extensively cleared. This issue has been addressed under Principle (e).

The submission also raised concerns regarding potential impacts of the proposed clearing on Aboriginal Heritage sites and Native Title Rights within the application area. Aboriginal Sites of Significance are protected under the *Aboriginal Heritage Act 1972*. The proponent is committed to the management and protection of Aboriginal heritage sites (BHP Billiton, 2005a). BHP Billiton has a heritage protocol agreement with the Nyiyaparli people (traditional owners of the Orebody 25 area), and regularly consult with the Nyiyaparli people to undertake Aboriginal heritage surveys in and around Newman (BHP Billiton, 2007b). BHP Billiton also has an internal process; the Project Environment and Aboriginal Heritage Review (PEAHR), which is designed to prevent inadvertent disturbance of Aboriginal heritage sites within BHP Billiton operations. Prior to the commencement of any land disturbance activity, a PEAHR must be completed and submitted to BHP Billiton's Aboriginal Affairs Department, for assessment. All land disturbance activities must be approved by BHP Billiton's Environment and Aboriginal Heritage staff (BHP Billiton, 2005a). Proposed drill holes and access tracks will be located away from any identified heritage sites (BHP Billiton, 2007b

There are ten Aboriginal sites of significance wholly or partly within the application area, and several other sites within close proximity (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.

There is a native title claim (WC05/006) over the area under application. 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*.

The application area is within the Newman Water Reserve, a Public Drinking Water Source Area (PDWSA) (GIS Database). The Department of Water (DoW) has advised that all activities conducted within the PDWSA should be compatible with the DoW's Land Use Compatibility Tables (DoW, 2007). The proponent is advised to seek further advice from the DoW to ensure compliance in this regard.

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

Methodology BHP Billiton (2005a).
BHP Billiton (2007b).
DoW (2007).
GIS Database:
- Aboriginal Sites of Significance - DIA 04/07/02.
- Native Title Claims - DLI 19/12/04.
- Public Drinking Water Source Areas - DOE 09/08/05.

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Mineral Exploration	Mechanical Removal	20	The proposal has been assessed against the Clearing Principles. The proposal is at variance to Principle (f), not at variance to Principle (e), and not likely to be at variance to any of the other Clearing Principles. Should the permit be granted, it is recommended that Conditions be imposed on the permit for the purposes of weed management, erosion control, rehabilitation, record keeping and permit reporting.

5. References

BHP Billiton (2005) Aboriginal Heritage Induction Handbook. BHP Billiton Iron Ore Pty Ltd, Western Australia.

BHP Billiton (2007a) Exploration Environmental Management Plan, Revision 1. BHP Billiton Iron Ore Pty Ltd, Western Australia.

BHP Billiton (2007b) Orebody 25. Eastern Ridge Purpose Permit Vegetation Clearing Permit Application. Supporting Documentation, Revision 1. BHP Billiton Iron Ore Pty Ltd, Western Australia.

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, 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.

DoW (2007) Public Drinking Water Source Area (PDWSA) Advice. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR). Department of Water, Western Australia.

Ecologia (1995) Orebody 25 Biological Assessment Survey. Ecologia Environment, Western Australia.

Ecologia (2005) Orebody 25 Biological Review and Environmental Impact Assessment. Ecologia Environment, Western Australia.

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 (updated 2005).

Western Australian Herbarium (1998-2008) FloraBase - The Western Australian Flora. Department of Conservation and Land Management, Western Australia.

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.