Government of Western Australia
Department of Mines and Petroleum

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 1068/4
Permit type: Area Permit

1.2. Proponent details

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

1.3. Property details

Property: *Iron Ore (Hamerlsye Range) Agreement Act 1963,* Mineral Lease 4SA (AML70/4)
Local Government Area: Shire of Ashburton
Colloquial name: Mt Tom Price Iron Ore Mine

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 8 March 2012

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

Vegetation within the clearing application area has been mapped at a 1:250,000 scale as Beard vegetation associations;

82: Hummock grasslands, low tree steppe; Snappy gum (*Eucalyptus leucophloia*) over *Triodia wiseana*.

567: Hummock grasslands, shrub steppe; mulga and kanji over soft spinifex & *Triodia basedowii* (Shepherd, 2007; GIS database).

A flora survey of the North East Cut Waste Dump area (NEWA3) and the North Deposit Waste Dump area (NDWD3) was conducted by Hamersley Iron on August 2005 and 14 January 2003 respectively. The vegetation types to be cleared are well represented in the Pilbara region (GIS database), and included the species *Triodia wiseana*, *Dodonaea pachyneura*, *Eriachne mucronata*, *Acacia marramamba* and *Acacia rhodophloia* (Hamersley Iron, 2006).

The flora survey recorded five weed species within the application area: *Cynodon dactylon, Aerva javanica*, *Acetosa vesicaria, Solanum nigrum* and *Lactuca serriola* (Hamersley Iron, 2006).

Clearing Description

Hamersley Iron proposes to clear native vegetation at its Mt Tom Price Iron Ore Mine in the following two areas.

1) North East Box Cut Waste Dump area (NEWA3), 58 hectares, for the extension of a waste dump (mainly in south-east corner) and subsequent rehabilitation which will include battering down of slopes to approximately 20 degrees, spreading of top soil and ripping along the contour.

2) North Deposit Waste Dump 3 area (NDWD3), 10 hectares, for the construction of emergency access roads and a bund at the base of the waste dump to ensure that any sediment runoff is contained.

The vegetation will be cleared with a dozer with its blade down. Where available, topsoil and vegetation will be collected and stockpiled for use in future rehabilitation works (Hamersley Iron, 2006).

Vegetation Condition

Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).

Comment

The proposed clearing is for a total of 68 hectares within the existing Mt Tom Price mine site. A significant proportion (~21 hectares or 30%) of the 68 hectares applied for has been previously cleared. The vegetation condition of those 21 hectares has been assessed by Hamersley Iron to be in a completely degraded condition (Hamersley Iron, 2006).

Clearing permit CPS 1068/1 was granted by the Department of Industry and Resources (DoIR) on 7 September 2006, and was valid from 7 October 2006 to 7 October 2008. The clearing permit authorised the clearing of up to 68 hectares of native vegetation. An application for an amendment to clearing permit CPS 1068/1 was submitted by Hamersley Iron Pty Ltd to DoIR on 14 March 2008. Hamersley Iron had applied to extend the expiry date of clearing permit CPS 1068/1 to 29 March 2010. The size of the area and clearing area boundary that was approved to clear under clearing permit CPS 1068/1 remained unchanged.

Clearing permit amendment CPS 1068/2 was granted by the Department of Industry and Resources (now Department of Mines and Petroleum (DMP)) on 22 May 2008 and was valid from 7 October 2006 to 29 March 2010. The clearing permit authorised the clearing of 68 hectares of native vegetation. An application to amend the permit was received by DMP on 6 January 2010. The applicant had requested an extension to the expiration of clearing permit CPS 1068/2 to 31 March 2012. The size of the area cleared and clearing permit boundary remain the same.

Clearing permit CPS 1068/3 was granted on 18 February 2010, and is valid from 7 October 2006 to 31 March 2012. The clearing permit authorised the clearing of 68 hectare of native vegetation. An application for an amendment to clearing permit CPS 1068/3 was submitted by Hamersley Iron Pty Ltd on 20 January 2012. The proponent has requested an extension of the duration of the permit to March 2017. The permit has also been extended by 5 years to allow the rehabilitation condition to be implemented. There were no significant additional environmental impacts identified as a result of this amendment.

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 area of proposed clearing is found within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) region which encompasses an area of 17,804,163 hectares (GIS database). The flora of the two areas proposed to clear consists of two vegetation associations (Beard vegetation associations 82 and 567), both of which are common and widespread throughout this region, with approximately 100% of the pre-European vegetation remaining (Shepherd, 2009). No flora or fauna species of conservation significance are known to occur within the application areas (GIS Database; Hamersley Iron, 2006).

Five weed species; Couch (*Cynodon dactylon*), Kapok Bush (*Aerva javanica*), Ruby Dock (*Acetosa vesicaria*), Blackberry Nightshade (*Solanum nigrum*) and Prickly Lettuce (*Lactuca serriola*) were recorded within the application areas during the flora surveys (Pilbara Iron, 2005). In order to minimise the spread and to stop the establishment of these weed species, Hamersley Iron is committed to adhering to a comprehensive Operational Control Procedure for weed control at the Mt Tom Price mine site, which has been certified under their Environmental Management System (EMS). Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to the biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

The two areas proposed to be cleared are located within an operational mine site and are unlikely to be of higher biodiversity than surrounding areas. The application areas are relatively small and within a landscape that has been significantly degraded by past and present mining activities (Hamersley Iron, 2006). The additional clearing within the existing mine site is unlikely to have any significant impact on biological diversity in the region.

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

Methodology

Hamersley Iron (2006)
Pilbara Iron (2005)
Shepherd (2009)
GIS Database:
- Threatened and Priority Flora
- Pre-European Vegetation
- IBRA WA (regions - subregions)

(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

Aerial imagery provided by the proponent indicates that past and present mining activities have impacted on fauna habitat in the immediate vicinity of the proposed clearing areas, especially for the North East Box Cut Waste Dump area (NEWA3), where approximately 30% of the vegetation has been described as completely degraded using the Keighery (1994) scale (Hamersley Iron, 2006). A deeply incised valley system to the west of the North Deposit Waste Dump 3 area (NDWD3) was identified during the flora survey as an area of potential conservation significance for fauna habitat (Hamersley Iron, 2006). Hamersley Iron has advised that whilst the proposed clearing is very close, it does not actually extend into the valley area, thereby, minimising the risk of impact to the potential fauna habitat. Furthermore, considering that the purpose of the clearing is to establish a bund at the base of the waste dump to ensure that sediment runoff is contained, it is likely that the rehabilitation works will result in greater protection of the valley, fauna and fauna habitat in the long term (Hamersley Iron,

2006).

Due to the lack of fauna information provided with the original application, the Native Vegetation Assessing Officer requested that additional fauna information be submitted for consideration during the assessment of clearing application 1068/1. As a result, the proponent forwarded to the Native Vegetation Branch, DoIR (now DMP), a fauna assessment of the North Deposit mining area. The assessment was conducted by Ninox Wildlife Consulting and comprised of a short but intensive three-day field inspection between 4 to 6 September 1991, and a literature review to identify species of conservation significance which may potentially occur within the area (Ninox, 1991).

Ninox (1991) identified three birds, one mammal and one reptile species of conservation significance which may potentially occur within the North Deposit project area. All of these species identified have distributions that encompass the Pilbara at a minimum, and in some cases are found throughout Australia. One bird species, the Grey Honeyeater (*Conopophila whitei*), is no longer listed in the Wildlife Conservation Notice.

The Peregrine Falcon (*Falco peregrinus*) listed under Schedule 4 (Other specially protected fauna) of the WA Wildlife Conservation (Specially Protected Fauna) Notice 2005, is a wide ranging bird with little habitat specificity apart from an affinity with cliffs and water where ducks and pigeons are the preferred prey species. The species builds nests in tall trees, or uses cliff faces for roosting and nesting (Ninox, 1991). There were no sightings of the bird during the field inspection, nor are there any cliff faces within the application area (Ninox, 1991). Kendrick (2001) states in the biodiversity audit of the Pilbara 3 - Hamersley subregion that the Peregrine Falcon is an uncommon resident, with very little data available regarding the species apart from occasional sightings. Given the widespread habitat and distribution of the Peregrine Falcon, the proposed clearing is not likely to impact on this species.

The Grey Falcon (*Falco hypoleucos*), listed as Priority 4 by the Department of Conservation and Land Management (now Department of Environment and Conservation) on their own "Priority Fauna List" is sparsely distributed over much of Australia (Ninox, 1991; Faunabase, 2006). The species has been observed in the Hamersley Range National Park, although it is more commonly known from the inland desert regions where it favours open country, mainly preying on birds, but occasionally taking small mammals and reptiles (Ninox 1991). The proposed clearing under this proposal is not likely to impact on habitat for the Grey Falcon.

The Pebble-mound Mouse (*Pseudomys chapmani*), listed as Priority 4 by the Department of Conservation and Land management on their own "Priority Fauna List" was recorded during the field assessment by the presence of the distinctive pebble-mounds which this animal constructs. An intensive search of the study area to estimate population levels of this rare animal resulted in only three mounds being located, all of which were beyond the mine location and most likely unoccupied (Ninox, 1991). The survey area has since undergone widespread clearing and is now part of a very large and well established mine site, and as a result there is very little pristine habitat remaining within the Mt Tom Price mine site. Kendrick (2001) states that the Pebble-mound Mouse is widespread and abundant in the Pilbara 3 - Hamersley subregion, and that the species is not threatened or likely to be. With consideration to Kendrick (2001) and given that the proposed clearing is for rehabilitation and extension to existing waste dumps within the highly disturbed Tom Price mine site, the proposed clearing is not likely to impact on the Pebble-mound Mouse.

The Pilbara Olive Python (*Liasis olivaceus barroni*), listed under Schedule 1 (Fauna that is rare or is likely to become extinct) of the WA Wildlife Conservation (Specially Protected Fauna) Notice 2005 is most frequently recorded along major drainage systems, particularly those in rocky areas with permanent or seasonal water which attract bird species (Ninox, 1991). There are no major drainage systems within the proposed clearing areas. A deep incised valley area lies close to the south-west corner of the North Deposit Waste Dump 3 application area, however, the clearing does not impact on the valley. The Pilbara Olive Python is not threatened in the Pilbara 3 - Hamersley subregion and the species is common and widespread (Kendrick, 2001). The proposed clearing for is not likely to impact on habitat for the Pilbara Olive Python.

All of these species are noted to have distributions that encompass the Pilbara at a minimum. The proposed clearing is adjacent to established waste dumps, and it is estimated that approximately 30% of the 68 hectare area has been previously cleared and is in a completely degraded condition. It is unlikely that the proposed clearing areas consist of significant habitat for fauna indigenous to Western Australia (DEC, 2006).

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

Methodology

CALM (2006)
DEC (2006)
Faunabase (2006)
Hamersley Iron (2006)
Keighery (1994)
Kendrick (2001)
Ninox (1991)

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

Comments

Proposal is not likely to be at variance to this Principle

According to CALM's Declared Rare Flora (DRF) and Priority Flora database there are no records of any populations of Rare or Priority flora within 50 kilometres of the application area. The nearest known flora species of conservation significance is a population of *Lepidium catapycnon* (DRF) which is located approximately 74kilometres north-east of the application area (GIS Database).

A flora survey of the North East Cut Waste Dump area (NEWA3) and the North Deposit Waste Dump area (NDWD3) was conducted by Hamersley Iron on 3 August 2005 and 14 January 2003 respectively. The flora survey identified no DRF within the proposed clearing areas (Pilbara Iron, 2005). One Priority 3 species, *Triumfetta leptacantha*, was recorded in an area which is now covered by the NDWD3 (Hamersley Iron, 2006). *Triumfetta leptacantha* was not identified in the areas proposed to be cleared during the flora survey, therefore, it is unlikely that this species will be impacted on by the proposal.

Based on the above, the proposal is not likely to be at variance to this Principle (CALM, 2006).

Methodology

CALM (2006)
Hamersley Iron (2006)
Pilbara Iron (2005)
GIS Database:
- Threatened and Priority Flora

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

Comments

Proposal is not likely to be at variance to this Principle

There are no records of Threatened Ecological Communities (TEC's) within the area subject to be cleared (GIS database; Hamersley Iron, 2006). The nearest known TEC is located approximately 35 kilometres north-east of the proposed clearing area (GIS database).

Based on the above, the proposed clearing is not likely to be at variance to this Principle (CALM, 2006).

Methodology

CALM (2006)
Hamersley Iron (2006)
GIS Database:
- Threatened Ecological Sites Buffered

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments

Proposal is not at variance to this Principle

The application area falls within the Pilbara IBRA bioregion (GIS Database). The vegetation within the application area is recorded as:

Beard vegetation association 82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*; and

Beard vegetation association 567: Hummock grasslands, shrub steppe; mulga & kanji over soft spinifex & *Triodia basedowii* (GIS Database; Shepherd, 2009).

According to Shepherd (2009), Beard vegetation associations 82 and 567 retain approximately 100**%** of their pre-European extent. Therefore, the area proposed to be cleared is not a significant remnant of native vegetation in an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Pilbara	17,804,193	17,785,001	~99.89	Least Concern	6.32
Beard vegetation associations - State					
82	2,565,901	2,565,901	~100.00	Least Concern	10.24
567	777,507	777,507	~100.00	Least Concern	22.33
Beard vegetation associations - Bioregion					
82	2,563,583	2,563,583	~100.00	Least Concern	10.25
567	776,824	776,824	~100.00	Least Concern	22.35

* Shepherd (2009)
** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd (2009)
GIS Database:
- IBRA WA (regions - subregions)
- Pre-European Vegetation

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments

There are no permanent wetlands or watercourses within the areas applied to clear (GIS database). The proponent has advised that the vegetation to be cleared is not associated with any major watercourses, wetlands or wetland dependent vegetation and that the project will not result in long-term alterations to drainage patterns (Hamersley Iron, 2006). The proposed clearing to expand two existing waste dumps is not likely to have any significant impact on any wetland or watercourse.

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

Methodology Hamersley Iron (2006)
GIS Database:
- Geodata, Lakes
- Hydrography, Linear

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

Comments

Proposal is not likely to be at variance to this Principle

The areas applied to be cleared are for the extension and subsequent rehabilitation of the North East Box Cut Waste Dump area (NEWA3), and for construction of emergency access roads and a bund at the base of the North Deposit Waste Dump 3 area (NDWD3) to ensure that any sediment runoff is contained (Hamersley Iron 2006).

For NEWA3, the area proposed to be cleared has been interpreted from satellite imagery to be Platform Land System, which is described as narrow raised plains and dissected slopes supporting hard spinifex (*Triodia wiseana*) and Mulga with other *Acacia* species. For this land system there is a low risk of soil erosion or other land degradation associated with the proposed clearing for the extension of the waste dump on this site (DAFWA 2006).

For NDWD3, the area proposed to be cleared is interpreted from satellite imagery to be Newman Land System, lower slopes unit. This is described as having concave slopes up to 10%, with rock outcrop and dense colluvial mantle. Soils are likely to range from dark reddish brown to a dark red stoney silt loams, usually less than 60cm deep, supporting hard spinifex with sparse *Eucalyptus leucophloia* (Snappy Gum) overstorey. For this land system, soil erosion risk associated with the construction activities at this waste dump is very low following clearing, as the soils are protected by stoney mantles (on scree slopes) (DAFWA 2006). Whilst the native

vegetation clearing assessment does not take into account the future land use, the clearing of native vegetation at NDWD3 is for the purpose of constructing a bund at the base of an existing waste dump to contain any waste sediment entering the nearby drainage line, thereby, minimising any future land degradation risks.

The land adjoining the proposed clearing areas has been extensively cleared as a result of the current mining operation (Hamersley Iron 2006), and it is unlikely that the clearing under this proposal will result in additional land degradation issues in the area.

Five weed species; *Cynodon dactylon*, *Aerva javanica*, *Acetosa vesicaria*, *Solanum nigrum* and *Lactusa serriola*; were recorded within the application areas during the flora surveys (Pilbara Iron 2005). In order to minimise the spread and to stop the establishment of these weed species, Hamersley Iron is committed to adhering to a comprehensive operational control procedure for weed control at the Mt Tom Price mine site, which has been certified under their Environmental Management System (EMS). Requirements under the weed control procedure include identifying and mapping areas of weed infestation across the Mt Tom Price mine site, undertaking inspections to ensure all equipment is free of vegetative and soil matter prior to arrival, and upon departure from infested areas, ensuring there are suitable wash down areas located across the site and actively undertaking weed-spraying to eradicate infestations. The DoIR Assessing Officer is satisfied that the proponents} commitment to adhering to their comprehensive Operational Control Procedure for Weed Control is likely to minimise the risk of spreading weed species outside of the infested sites.

Based on the above, the proposal is not likely to be at variance to this Principle (DAFWA 2006).

Methodology DAFWA (2006)
Hamersley Iron (2006)
Pilbara Iron (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**

There are no DEC managed conservation areas within the area to be cleared, with the nearest being Karijini National Park located approximately 10 kilometres east of the application areas (GIS database). The proposed clearing is associated with an existing operational mine site and is not likely to cause appreciable additional impact on Karijini National Park.

Based on the above, the proposed clearing is not likely to be at variance to this Principle (CALM, 2006).

Methodology CALM (2006)
GIS Database:
- DEC Tenure

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

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

There are no permanent watercourses or water bodies in the vicinity of the application area (GIS database). The application areas are within an active mine site and the proposed clearing is for the extension of two existing waste dumps (Hamersley Iron, 2006). In consideration to the existing environment, the proposed clearing is not likely to impact on the quality of surface water.

The North East Box Cut Waste Dump area (NEWA3) and North Deposit Waste Dump 3 area (NDWD3) are within the Hardey River and Turee Creek catchment areas respectively, however, due to small area of proposed clearing in relation to the total size of the catchments (> 8500 square kilometres), it is unlikely that the removal of vegetation will impact on catchment hydrology or the quality of groundwater in the area (Hamersley Iron, 2006).

The proposed clearing areas are not within a Public Drinking Water Source Area (GIS database).

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

Methodology Hamersley Iron (2006)
GIS Database:
- Hydrography, Linear
- Public Drinking Water Source Areas

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

Comments

Proposal is not likely to be at variance to this Principle

The application areas are not associated with any permanent wetlands or watercourses (GIS database). The average annual rainfall of the application areas is approximately 400 mm/yr, with local flooding occurring seasonally in the Pilbara region between December and March (Hamersley Iron, 2006). Numerous non-perennial watercourses are distributed across the landscape, and these are responsible for quickly dispersing floodwaters after significant rainfall events, thereby reducing peak flood heights (GIS database). It is unlikely that the clearing required under this proposal will impact on drainage patterns within the Hardey River and Turee Creek catchment areas, or cause or increase the incidence of flooding.

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

Methodology

Hamersley Iron (2006)
GIS Database:
- Hydrography, linear

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

Comments

There is a native title claim over the area under application; WC97/089 (GIS database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenure 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*.

The proposed clearing occurs in an area that is covered by the following Registered Indigenous Heritage Sites - Hamersley, ID: 18453; Bulgwingi Talu, ID: 21414; Tom Price Artefacts and Scarred Tree, ID: 605; Tom Price Rock Shelter, ID: 6585 and Mulba, ID: 21415 (GIS database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

The proponent has advised that water is not required for the expansion to the current waste dump, therefore, a groundwater licence under the *Rights and Irrigation Act 1914* is not required (DoE, 2006).

A waste dump is not within a Prescribed Premise under Schedule 1 of the *Environmental Protection Act 1986*, therefore, an Environmental Protection Licence and Works Approval Licence are not required for the proposed extension to the waste dump (DoE, 2006).

Clearing permit CPS 1068/1 was granted by the Department of Industry and Resources (DoIR) on 7 September 2006, and was valid from 7 October 2006 to 7 October 2008. The clearing permit authorised the clearing of up to 68 hectares of native vegetation. An application for an amendment to clearing permit CPS 1068/1 was submitted by Hamersley Iron Pty Ltd to DoIR on 14 March 2008. Hamersley Iron had applied to extend the expiry date of clearing permit CPS 1068/1 to 29 March 2010. The size of the area and clearing area boundary that was approved to clear under clearing permit CPS 1068/1 remained unchanged.

Clearing permit amendment CPS 1068/3 was granted by the Department of Industry and Resources (now Department of Mines and Petroleum (DMP)) on 22 May 2008 and was valid from 7 October 2006 to 29 March 2010. The clearing permit authorised the clearing of 68 hectares of native vegetation. An application to amend the permit was received by DMP on 6 January 2010. The applicant had requested an extension to the expiration of clearing permit CPS 1068/2 to 31 March 2012. The size of the area cleared and clearing permit boundary remain the same.

Clearing permit CPS 1068/3 was granted on 18 February 2010, and is valid from 7 October 2006 to 31 March 2012. The clearing permit authorised the clearing of 68 hectare of native vegetation. An application for an amendment to clearing permit CPS 1068/3 was submitted by Hamersley Iron Pty Ltd on 20 January 2012. The proponent has requested an extension of the duration of the permit to March 2017. The permit has also been extended by 5 years to allow the rehabilitation condition to be implemented. There were no significant additional environmental impacts identified as a result of this amendment.

Methodology

DoE (2006)
GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims

4. References

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5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), Western Australia
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DoE	Department of Environment (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
EP Act	Environmental Protection Act 1986, Western Australia
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
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 Act	Rights in Water and Irrigation Act 1914, Western Australia
s.17	Section 17 of the Environment Protection Act 1986, Western Australia
TEC	Threatened Ecological Community

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.