Government of **Western Australia**
Department of **Mines and Petroleum**

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6087/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Great Southern Gypsum Limited**

1.3. Property details

Property: Exploration Licence 70/3308
Local Government Area: Shire of Lake Grace
Colloquial name:

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 3 July 2014

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

Beard vegetation associations have been mapped for the whole of Western Australia and are useful to look at vegetation in a regional context. The following Beard vegetation association is located within the application area (GIS Database):

1098: Mosaic: Medium sparse woodland; salmon gum & morrel/ Succulent steppe; samphire.

A flora and vegetation survey was undertaken over the majority of the application area as a part of a larger survey by Mattiske Consulting Pty Ltd (Mattiske). This flora and vegetation survey was undertaken on 19 July 2011 over a block of approximately 2 hectares adjacent to Lake Grace North and a narrow corridor running north of this block between a fence line and the edge of Lake Grace North (Mattiske, 2013). The portion of the application area not covered by the survey is the existing land jetty that extends into Lake Grace North. The following five vegetation communities were identified within the application area (Mattiske, 2013):

Shrubland
1. S1: Tall Shrubland of *Acacia acuminata* and *Melaleuca scalena* with occasional emergent *Eucalyptus loxophleba* subsp. *loxophleba* over *Santalum acuminatum* and *Darwinia diosmoides* over *Rhagodia drummondii* and *Enchylaena tomentosa* var. *tomentosa*. This community occurs on orange-brown loamy sand soils of lower slopes.

Chenopod Shrubland
2. CH1: Low Chenopod Shrubland of *Tecticornia ?halocnemoides*, *Tecticornia ?pergranulata*, and *Atriplex vesicaria* with occasional emergent *Melaleuca thyoides* and *Hakea newbeyana*. This community occurs on saline sandy soil at the margin of salt lakes.

3. CH2: Open Low Chenopod Shrubland of *Sarcocornia blackiana* only. This community occurs on saline sandy soil adjacent to salt lakes.

Pasture
4. P1: Closed grassland of pasture Poaceae sp. and *Pelargonium havlasae* with emergent *Atriplex vesicaria* and *Maireana brevifolia*. This community occurs on brown loamy sand soils of lower slopes.

Other
5. D1: Drainage line consisting of bare sand devoid of vegetation.

Clearing Description

Great Southern Gypsum Limited Gypsum Exploration.

Great Southern Gypsum Limited proposes to clear up to 0.6 hectares of native vegetation within a total boundary of approximately 0.6 hectares, for the purpose of gypsum exploration. The project is located approximately 10 kilometres west, south-west of Lake Grace, in the Shire of Lake Grace.

Vegetation Condition

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994);

To

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).

Comment

The proposed clearing is for gypsum exploration on the edge of Lake Grace North. The majority of the proposed clearing is for the removal of native vegetation regrowth from the proposed stockpile area (Al Maynard & Associates Pty Ltd (Al Maynard), (2014). The proposed storage area will contain a storage silo for the gypsum.

Vegetation condition was determined by Mattiske (2013).

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 edge of Lake Grace North (GIS Database). This lake is part of the Lake Grace System which has been recognised as a wetland of National Significance as listed in 'A Directory of Important Wetlands in Australia' (the Directory) (Mattiske, 2013). Lake Grace North is also part of the 'Lake Grace-Lake Chinocup Area' Register of National Estate and was proposed as part of a nature reserve in 1975 through the Environmental Protection Authority Redbook process (Department of Parks and Wildlife (DPaW), 2014). According to the Directory (Department of the Environment, 2014b), the Lake Grace System is significant as it is a good example of a series of large, naturally saline and brine lakes in the bioregion. The Register of National Estate states that the Lake Grace-Lake Chinocup Area has diverse mammal and bird fauna and is remarkable for its number of small mammals (Department of the Environment, 2014a). It also provides a breeding ground and habitat for water fowl (Department of the Environment, 2014a).

No Threatened Ecological Communities or Priority Ecological Communities are known to occur or were recorded within the application area (GIS Database; Mattiske, 2013). Native vegetation within the application area comprises one tall *Acacia* shrubland community and two low chenopod (samphire) shrubland communities (Mattiske, 2013). Mattiske (2013) states that these are broadly consistent with the characteristic communities of the Lake Grace System. Mattiske (2013) adds that as some of the Lake Grace System lies within the Chinocup Nature Reserve these communities are considered to be well represented outside of the survey area. DPaW (2014) considered this a correct assessment and added the vegetation types are widely distributed.

According to Al Maynard (2014), historical clearing has occurred in the application area with the area previously cleared down to bedrock in 1975. This is consistent with aerial imagery which indicates disturbance has occurred in the application area (GIS Database). Vegetation within the application area also appears sparse with an absence of vegetation in some areas (GIS Database).

A total of 36 vascular plant taxa from 33 genera and 15 families were recorded in the larger survey area (Mattiske, 2013). Mattiske (2013) notes that individual plant taxa are representative of the landform in this area of the state. Four weed species were recorded in the larger survey area. The presence of introduced weed species lowers the biodiversity values of the proposed clearing areas. Potential impacts from weeds as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

No Threatened Flora species have been recorded within the application area (GIS Database; Mattiske, 2013). There was one species recorded that may potentially be Priority 1 flora species *Austrostipa geoffreyi*. Mattiske (2013) was unable to confirm the identification due to lack of flowers and/or fruiting material as a result of possible grazing. It was recorded in the S1 *Acacia* shrubland vegetation community at two locations each comprising a population of 2 to 5 plants (Mattiske, 2013). One of these locations occurs within the application area. Great Southern Gypsum Limited (2014) has indicated this location will not be impacted by the proposed clearing. This species preferred habitat appears to be low-lying gypsiferous dunes and is currently known from only 2,050 plants distributed in two populations at Lake Grace and Lake King (DPaW, 2014). If the population of 2 to 5 plants within the application area is *Austrostipa geoffreyi*, it will represent 0.24% of the total known population of *Austrostipa geoffreyi*. Based on this low representation, it is unlikely any potential impacts from the proposed clearing will have a significant impact on *Austrostipa geoffreyi*.

According to Naturemap, 18 mammal, 123 bird, 5 amphibian, 41 invertebrate and 27 reptile species have been recorded within a 20 kilometre radius of the approximate centrepoint of the application area (DEC, 2014). Historical clearing and disturbance has occurred in the application area and aerial imagery indicates the vegetation is sparse (Al Maynard, 2014; GIS Database). Based on this, the application area is not expected to support a high level of faunal diversity.

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

Methodology

Al Maynard (2014)
DEC (2014)
Department of the Environment (2014a)
Department of the Environment (2014b)
DPaW (2014)
Great Southern Gypsum Limited (2014)
Mattiske (2013)

GIS Database:
- Dumbleyung Kukerin 1.4m Orthomosaic - Landgate 2002
- Threatened and Priority Flora
- Threatened Ecological Sites Buffered

(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 has not been conducted over the application area. Fauna habitat information can be obtained from the flora and vegetation survey undertaken by Mattiske (2013). According to Mattiske (2013), the application area consists of low chenopod (samphire) shrubland, tall *Acacia* shrubland, pasture and a drainage line that comprises bare sand and is devoid of vegetation. The vegetation communities are considered well represented outside the application area (Mattiske, 2013; DPaW, 2014). The application area is also located on the edge of Lake Grace North, a 7,200 hectare seasonal/intermittent saline lake (Mattiske, 2013).

According to Naturemap, 18 mammal, 123 bird, 5 amphibian, 41 invertebrate and 27 reptile species have been recorded within a 20 kilometre radius of the approximate centrepoint of the application area (DEC, 2014). Of these 17 species are conservation significant fauna species (i.e. Threatened or Priority listed fauna). However, historical clearing has occurred in the application area and aerial imagery indicates vegetation within the application area is sparse (Al Maynard, 2014; GIS Database). Pasture exists inland from the salt lake and little vegetation appears to be present along the adjacent area of lake margin. This indicates fauna habitat within the application area is likely to be fragmented and of lower quality. Considering the above, it is unlikely the application area meets the habitat requirements and/or comprises significant habitat for these conservation significant fauna species.

Given the vegetation communities are well represented, the small size of clearing in comparison to the size of Lake Grace North and the nature of the fauna habitat present, it is unlikely the application area comprises significant habitat for native fauna.

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

Methodology

Al Maynard (2014)
DEC (2014)
DPaW (2014)
Mattiske (2013)
GIS Database:
- Dumbleyung Kukerin 1.4m Orthomosaic - Landgate 2002

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

Comments

Proposal is not likely to be at variance to this Principle

According to available databases, no Threatened Flora species have been recorded within the application area (GIS Database).

No Threatened Flora were recorded during the flora and vegetation survey (Mattiske, 2013).

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

Methodology

Mattiske (2013)
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

According to available databases, there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest known TEC is located approximately 45 kilometres south east of the application area (GIS Database).

No TECs were recorded during the flora and vegetation survey (Mattiske, 2013).

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

Methodology

Mattiske (2013)
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 likely to be at variance to this Principle

The application area is located within the Mallee Interim Biogeographical Regionalisation for Australia (IBRA) bioregion (GIS Database). Approximately 56.60% of the pre-European vegetation remains within the Mallee bioregion (Government of Western Australia, 2013). According to the 'Bioregional Conservation Status of Ecological Vegetation Classes' (Department of Natural Resources and Environment, 2002), this value gives the region a Conservation Status of 'Least Concern'.

The vegetation of the application area has been mapped as Beard vegetation association 1098 (GIS Database). Over 30% of this Beard vegetation association remains at a state, bioregional and subregional level (Government of Western Australia, 2013). According to the 'Bioregional Conservation Status of Ecological Vegetation Classes' (Department of Natural Resources and Environment, 2002), the percentages remaining give the vegetation association a Conservation Status of 'Depleted'. However, these percentages are above the 30% threshold level recommended in the National Objectives Targets for Biodiversity Conservation below which, species loss appears to accelerate exponentially at an ecosystem level (EPA, 2000).

Aerial imagery shows the application area is located within an area that has been extensively cleared for agriculture (GIS Database). However, historical clearing has occurred in the application area and aerial imagery indicates vegetation within the application area is sparse (Al Maynard, 2014; GIS Database). Pasture is located immediately north of the application area and the adjacent areas of lake margin appear to be sparsely vegetated (GIS Database) indicating the application area is unlikely to provide a significant ecological linkage function for fauna.

Whilst the application area is within an area that has been extensively cleared it is not considered to be a significant remnant within the local area.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European Extent in DPaW Managed Lands %* (and current extent %)
IBRA bioregion – Mallee	7,395,894	4,185,989	~56.60	Least Concern	~18.00 (~30.70)
IBRA Subregion - Western Mallee	3,981,718	1,476,100	~37.07	Depleted	~10.00 (~24.46)
Local Government – Lake Grace	1,188,458	454,736	~38.26	Depleted	~16.74 (~39.06)
Beard vegetation associations - State					
1098	13,997	5,473	~39.11	Depleted	~19.14 (~40.42)
Beard vegetation associations - Bioregion					
1098	13,997	5,473	~39.11	Depleted	~19.14 (~40.42)
Beard vegetation associations - Subregion					
1098	13,997	5,473	~39.11	Depleted	~19.14 (~40.42)

* Government of Western Australia (2013)
** 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 likely to be at variance to this Principle.

Methodology

Al Maynard (2014)
Department of Natural Resources and Environment (2002)
EPA (2000)
Government of Western Australia (2013)
GIS Database:
- Dumbleyung Kukerin 1.4m Orthomosaic - Landgate 2002
- IBRA WA (Regions - Sub Regions)
- Pre-European Vegetation

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

Comments

Proposal is at variance to this Principle

The application area is located on the lake margin of Lake Grace North, a 7,200 hectare seasonal/intermittent saline lake (Mattiske, 2013). A drainage line consisting of bare sand and devoid of vegetation also intersects the application area where it drains into Lake Grace North (Mattiske, 2013).

According to Mattiske (2013), Lake Grace North, Lake Grace South, Lake Altham and Cemetery Lake comprise the 13,200 hectare 'Lake Grace System,' which forms part of a saline drainage system that extends more than 200 kilometres from near Ongerup, north to near Bruce Rock, to connect with Salt River and ultimately the Avon River. The Lake Grace System has been recognised as a wetland of National Significance and is considered significant as it is a good example of a series of large, naturally saline and brine lakes in the bioregion (Department of the Environment, 2014b).

According to Al Maynard (2014), historical clearing has occurred in the application area with the area previously cleared down to bedrock in 1975. The application area also includes an existing land jetty that extends into Lake Grace North (Great Southern Gypsum Limited, 2014). Aerial imagery indicates there has been disturbance in the areas of salt lake adjacent to the land jetty (GIS Database). Given the already modified environment of the application area and the small size of clearing, it is unlikely the proposed clearing will have a significant impact on Lake Grace North.

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

Methodology

Al Maynard (2014)
Department of the Environment (2014b)
Great Southern Gypsum Limited (2014)
Mattiske (2013)
GIS Database:
- Dumbleyung Kukerin 1.4m Orthomosaic - Landgate 2002

(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

Al Maynard (2014) states the application area is on the edge of a salt lake which is flat lying with Metamorphic Archean Sediments. According to available databases, common soils are gypseous and saline loams on riverine wash and usually underlain by clayey or sandy strata by about 12 inches (GIS Database, Schoknecht, 2002). Associated with this are various resalinised soils such as on fringe areas, and dunes and lunettes of various sandy, silty, and clayey soils of slight profile development (GIS Database, Schoknecht, 2002).

The application area is located on a lake shoreline and bank where the removal of vegetative cover may cause wind and water erosion. However, historical clearing has occurred in the application area and adjacent areas appear sparsely vegetated with disturbance present (Al Maynard, 2014; GIS Database). It is therefore unlikely that the clearing of vegetation within the application area (up to 0.6 hectares) will result in appreciable land degradation.

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

Methodology

Al Maynard (2014)
Schoknecht (2002)
GIS Database:
- Dumbleyung Kukerin 1.4m Orthomosaic - Landgate 2002
- Soils, Statewide

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments

Proposal is not likely to be at variance to this Principle

The application area does not lie within any Department of Parks and Wildlife (DPaW) managed lands (GIS Database). The nearest DPaW managed land is located approximately 6.5 kilometres south east of the application area (Chinocup Nature Reserve) (GIS Database), and is, therefore, unlikely to be impacted by the proposed clearing.

The application area is located on the edge of Lake Grace North and is part of the Lake Grace System which is a wetland cited in the 'A Directory of Important Wetlands in Australia' (the Directory) (DPaW, 2014). The application area is also part of the 'Lake Grace-Lake Chinocup Area' Register of National Estate and was proposed as part of a nature reserve in 1975 through the Environmental Protection Authority Redbook process (recommendation 4.8.7) (DPaW, 2014). This recommendation was partially implemented with the southern section converted to Chinocup Nature Reserve. The northern section comprising Lake Grace North remains subject to the original recommendation (DPaW, 2014).

According to the Directory (Department of the Environment, 2014b), the Lake Grace System is significant as it is a good example of a series of large, naturally saline and brine lakes in the bioregion. The Register of National Estate states that the Lake Grace-Lake Chinocup Area has diverse mammal and bird fauna and is remarkable for its number of small mammals (Department of the Environment, 2014a). It also provides a breeding ground and habitat for water fowl (Department of the Environment, 2014a).

DPaW (2014) has reviewed the proposed activities and advised the application is likely to represent a low level of disturbance and risk. DPaW (2014) provided advice in relation to several aspects of the proposed clearing and proposed works, some of which are assessed under the *Mining Act 1978* approvals.

Although the application area is located within a conservation significant area, it is unlikely the proposed clearing of up to 0.6 hectares within a previously disturbed environment would have a significant impact on the abovementioned environmental values.

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

Methodology
Department of the Environment (2014a)
Department of the Environment (2014b)
DPaW (2014)
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

According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The application area is located on the edge of Lake Grace North, a 7,200 hectare seasonal/intermittent saline lake (Mattiske, 2013). A drainage line consisting of bare sand and devoid of vegetation also intersects the application area where it drains into Lake Grace North (Mattiske, 2013).

Available databases indicate Lake Grace North has a shallow water table and contains water that is highly saline (GIS Database). According to available databases, groundwater salinity within the application area is greater than 35,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). The application area is immediately adjacent to agricultural land and has previously been disturbed (Al Maynard, 2014). It is therefore unlikely that the proposed clearing of up to 0.6 hectares will significantly impact on surface or underground water quality.

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

Methodology
Al Maynard (2014)
Mattiske (2013)
GIS Database:
- Groundwater Salinity, Statewide
- Public Drinking Water Source Areas (PDWSAs)
- WIN Groundwater Sites

(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 is located within the Swan Avon Lockhart catchment area (GIS Database). Given the size of the area to be cleared (up to 0.6 hectares) in relation to the size of the catchment area (2,839,267 hectares) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a local or catchment scale.

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

Methodology
GIS Database:
- Hydrographic Catchments – Catchments

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

Comments

There are two native title claims over the area under application: WC2000/007 and WC2003/006 (GIS Database). One claim has been filed at the Federal Court and the other registered with the 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.*

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

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

The clearing permit application was advertised on 19 May 2014 by the Department of Mines and Petroleum inviting submissions from the public. The application was readvertised for seven days on 16 June 2014 following an increase in the area and amount of clearing being applied for. No submissions were received during either advertising periods.

Methodology

GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims – Filed at the Federal Court
- Native Title Claims – Registered with the NNTT

4. References

Al Maynard (2014) Letter for Clearing Permit Application. Letter from Al Maynard & Associates Pty Ltd to the Department of Mines and Petroleum dated 11 April 2014.

DEC (2014) NatureMap - Mapping Western Australia Biodiversity, Department of Environment and Conservation. http://naturemap.dec.wa.gov.au/default.aspx, viewed May 2014.

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.

Department of the Environment (2014a) Australian Heritage Database – Place Details - Lake Grace - Lake Chinocup Area, Chinocup Rd, Chinocup via Lake Grace, WA, Australia. URL: http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place_detail;place_id=9924, viewed May 2014. Department of the Environment.

Department of the Environment (2014b) Directory of Important Wetlands – Lake Grace System. URL: http://www.environment.gov.au/cgi-bin/wetlands/search.pl?smode=DOIW, viewed May 2014. Department of the Environment.

DPaW (2014) Advice to the assessing officer for clearing permit application CPS 6087/1. Received on 5 June 2014.

EPA (2000) Environmental Protection of Native Vegetation in Western Australia. Clearing of Native Vegetation, with Particular Reference to the Agricultural Area. Position Statement No. 2. December 2000. Environmental Protection Authority, Western Australia.

Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. WA Department of Environment and Conservation, Perth.

Great Southern Gypsum Limited (2014) Further Information provided by Great Southern Gypsum Limited on 8 and 10 June 2014.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Mattiske (2013) Flora and Vegetation Survey of the Lake Grace North Survey Area. Unpublished report prepared by Mattiske Consulting Pty Ltd for Great Southern Gypsum Ltd. Dated October 2013.

Schoknecht (2002) Soil Groups of Western Australia. A simple guide to the main soils of Western Australia. Resource Management Technical Report 246. Edition 3.

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.