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

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6182/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **MacPhersons Resources Limited**

1.3. Property details

Property: Mining Lease 25/355
Miscellaneous Licence 25/32
Local Government Area: City of Kalgoorlie-Boulder
Colloquial name: Nimbus Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 28 August 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):

468: Medium woodland; salmon gum & goldfields blackbutt.

A flora and vegetation survey was undertaken over the Nimbus Project area by Mattiske Consulting Pty Ltd (Mattiske) on 20 to 22 June 2012 (Mattiske, 2013). This covered the majority of the 507 hectare application area with aerial imagery indicating vegetation within the unsurveyed portion is likely to be similar to vegetation in the surveyed portion (GIS Database). Mattiske (2013) identified the following eight vegetation communities within the application area:

1. E1: Very Open Woodland of *Eucalyptus ravida*, *Eucalyptus salmonophloia*, *Eucalyptus stricklandii* and *Eucalyptus transcontinentalis* over *Eremophila interstans* subsp. *virgata* and mixed *Eremophila* species over *Atriplex vesicaria*, *Atriplex nummularia* and mixed shrubs on flats with red/brown clay soils and scattered quartz pebbles.

2. E2: Dense Low Forest of *Eucalyptus ravida* and *Eucalyptus celastroides* over *Eremophila interstans* subsp. *virgata* and mixed *Eremophila* species, *Exocarpos aphyllus* and occasional mixed shrubs on flats with red/brown clay soils.

3. E3: Open Woodland of *Eucalyptus stricklandii* with occasional *Eucalyptus ravida* and *Eucalyptus salmonophloia* over *Casuarina pauper* over *Eremophila interstans* subsp. *virgata* and *Exocarpos aphyllus* over *Atriplex nummularia*, *Atriplex vesicaria* and mixed shrubs on flats with rocky red/brown clay soils.

4. E4: Open Woodland of *Eucalyptus salmonophloia* over *Atriplex nummularia*, *Atriplex vesicaria*, *Exocarpos aphyllus* and *Eremophila interstans* subsp. *virgata* and mixed shrubs adjacent to drainage lines on flats with red/brown clay soils.

5. E5: Open Low Woodland of *Eucalyptus stricklandii* and *Casuarina pauper* over *Santalum spicatum* and *Acacia burkittii* over *Dodonaea lobulata*, *Eremophila oldfieldii* subsp. *angustifolia*, and other mixed shrubs over occasional *Triodia scariosa* on flats with red/brown clay soils with scattered ironstone and quartz pebbles.

6. E6: Open Woodland of *Eucalyptus celastroides*, *Eucalyptus ravida*, *Eucalyptus salmonophloia* and *Eucalyptus stricklandii* over *Eremophila interstans* subsp. *virgata*, *Atriplex vesicaria*, *Atriplex nummularia*, *Exocarpos aphyllus*, *Maireana sedifolia* and mixed shrubs and Chenopods on flats with red/brown clay soils with scattered ironstone pebbles.

7. C1: Open Chenopod Shrubland of *Atriplex nummularia*, *Atriplex vesicaria* and *Senna artemisioides* subsp. *filifolia* and *Eremophila scoparia* over *Scaevola spinescens* and mixed *Maireana* species on seasonally inundated drainage lines with red/brown clay soils.

8. A1: Closed Shrubland of *Acacia burkittii* with emergent *Eucalyptus stricklandii* over *Eremophila granitica* and *Eremophila decipiens* on flats with red/brown clay soils.

Clearing Description Nimbus project.
MacPhersons Resources Limited proposes to clear up to 160 hectares of native vegetation within a total boundary of approximately 507 hectares, for the purpose of recommencing mining at the Nimbus Project. The project is located approximately 17 kilometres east, south east of Kalgoorlie, in the City of Kalgoorlie-Boulder.

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

To

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

Comment The proposed clearing is for an administration office complex, contractor's laydown yard, integrated tailings storage and waste rock landform and other mining support infrastructure.

Vegetation condition was determined by Mattiske (2013). Aerial imagery indicates the unsurveyed portion is likely to have a similar condition rating (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 within the Eastern Goldfield subregion of the Coolgardie Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). This subregion is characterised by gently undulating plains interrupted in the west with low hills and a series of large playa lakes in the western half (CALM, 2002). The vegetation is dominated by Mallees, *Acacia* thickets and shrub-heaths on sandplains, diverse Eucalyptus woodlands occur around salt lakes, on ranges, and in valleys, and dwarf shrublands of samphire around salt lakes (CALM, 2002).

A total of eight vegetation communities were identified by Mattiske in the application area (Mattiske, 2013). The survey area (approximately 630.98 hectares) mostly consisted of Eucalyptus woodlands with undulated drainage lines. Mattiske (2013) states the species and vegetation communities occurring within the impact area were found to be well represented outside the survey area. Mattiske (2013) rated vegetation condition as 'very good' to 'excellent' which takes into account the disturbances caused by grazing and mining activities. Aerial imagery shows the existing Nimbus mine site is located adjacent to the south west boundary of the application area (GIS Database).

A total of 78 vascular plant taxa from 43 genera and 25 families were recorded in the survey area (Mattiske, 2013). Two weed species, Pimpernel (*Lysimachia arvensis*) and Small Burr Medic (*Medicago minima*) were identified within the survey area. These occurred once near drainage lines (Mattiske, 2013). Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts from weeds as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Available databases show no Threatened Flora, Priority Flora, Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) are known to occur within the application area (GIS Database). No Threatened or Priority Flora or PECs or TECs were recorded by Mattiske (2013). Approximately 60 hectares of the application area occurs outside the area surveyed by Mattiske (2013). Some of this area (approximately 30 hectares) has been covered by another flora and vegetation survey conducted by Recon Environmental (Recon) on 9 and 10 April 2010 (Recon, 2010). No TECs or PECs or Threatened or Priority Flora Species were recorded during this survey. According to Naturemap (DPaW, 2014), four Priority Flora species have been recorded within a 20 kilometre radius of the approximate centrepoint of the application area. Based on species habitat and/or record details (Western Australian Herbarium, 2014) and the absence of these species during the Mattiske (2013) and Recon (2010) surveys it is considered unlikely the proposed clearing would have a significant impact on these species. No Threatened Flora species have been recorded within 40 kilometres of the application area (DPaW, 2014).

A targeted Malleefowl (*Leipoa ocellata*) (Vulnerable; Schedule 1) survey undertaken on the 16 and 17 December 2013 identified two broad fauna habitats within the application area including Eucalypt woodland on red loamy clay and open shrubland on red loamy clay (Outback Ecology, 2014). The Eucalypt woodland on red loamy clay habitat was aligned to vegetation communities E1, E2, E3, E4 and E6 and the open shrubland on red loamy clay habitat was aligned to vegetation communities E5, C1 and A1 (Outback Ecology, 2014). These vegetation communities are considered well represented outside the application area (Mattiske, 2013) indicating the application area is unlikely to support a high level of fauna diversity.

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

Methodology CALM (2002)
DPaW (2014)
Mattiske (2013)

Outback Ecology (2014)
Recon (2010)
Western Australian Herbarium (2014)
GIS Database:
- IBRA WA (Regions – Sub Regions)
- Kanowna 1.4m Orthomosaic - Landgate 2003
- 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 general field fauna survey has not been conducted over the application area. However, a desktop fauna review was undertaken by Ninox Wildlife Consulting (Ninox) in 2012 and a targeted Malleefowl (*Leipoa ocellata*) (Vulnerable; Schedule 1) survey was undertaken by Outback Ecology on 16 and 17 December 2013.

The targeted Malleefowl survey mapped two broad fauna habitats within the application area including Eucalypt woodland on red loamy clay (329.2 hectares or 65% of the survey area) and open shrubland on red loamy clay (126.5 hectares or 25% of the survey area) (Outback Ecology, 2014). The Eucalypt woodland on red loamy clay habitat aligned with vegetation communities E1, E2, E3, E4 and E6 and the open shrubland on red loamy clay habitat aligned with vegetation communities E5, C1 and A1 (Outback Ecology, 2014). These vegetation communities are considered well represented outside the survey area (Mattiske, 2013) indicating fauna habitats are also likely to be well represented in the local area.

According to Naturemap (DPaW, 2014), 11 mammal, 75 bird, 2 amphibian, 14 invertebrate and 43 reptile species have been recorded within a 20 kilometre radius of the approximate centrepoint of the application area. Of these the following five conservation significant fauna species have been recorded:

- Western Spiny-tailed Skink (*Egernia stokesii badia*) – Endangered; Schedule 1;
- Malleefowl (*Leipoa ocellata*) – Vulnerable; Schedule 1;
- Bilby (*Macrotis lagotis*) – Vulnerable; Schedule 1;
- Wood Sandpiper (*Tringa glareola*) – Marine; Migratory under *EPBC Act*; Schedule 3; and
- Carpet Python (*Morelia spilota* subsp. *imbricata*) – Schedule 4.

The database search returned one record of Malleefowl within 20 kilometres of the application area (DPaW, 2014). The Malleefowl occurs in semi-arid and arid zones of temperate Australia, where it occupies shrublands and low woodlands that are dominated by mallee vegetation (Department of the Environment, 2014a). According to Outback Ecology (2014), a recent survey has revealed that, regionally, this species favours shrubby areas with heights reaching two to four metres, as opposed to open areas or woodlands (Benshemesh et al. 2007) (cited in Outback Ecology, 2014). The targeted Malleefowl survey did not identify any Malleefowl mounds or evidence of Malleefowl. Habitat within the application area was found to be unsuitable for Malleefowl due to a lack of available ground and/or litter cover and because the soils comprised heavy red clays, which are unsuitable for building mounds (Outback Ecology, 2014). Outback Ecology (2014) concluded that the proposed clearing is highly unlikely to have any impact on the Malleefowl.

According to Naturemap, there is one record of the Western Spiny-tailed Skink and Bilby within 20 kilometres of the application area (DPaW, 2014). However, these records were collected in 1929 and 1930 (DPaW, 2014) and Ninox (2012) considered both these species as extremely unlikely to occur within the application area.

The Carpet Python and several other species identified by Ninox (2012) may utilise the application area. However, given the availability of similar habitat in the surrounding areas it is unlikely the application area comprises significant habitat for these species. The Wood Sandpiper uses well-vegetated, shallow, freshwater wetlands, such as swamps, billabongs, lakes, pools and waterholes (Department of the Environment, 2014b). Given the absence of these waterbodies it is unlikely this species occurs within the application area.

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)
Mattiske (2013)
Ninox (2012)
Outback Ecology (2014)

(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, there are no known records of Threatened Flora species within the application area (GIS Database). A search of the online website Naturemap shows no Threatened Flora species have been recorded within 40 kilometres of the approximate centre point of the application area

(DPaW, 2014). No Threatened Flora species were recorded during the flora and vegetation surveys conducted by Mattiske (2013) and Recon (2010).

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

Methodology DPaW (2014)
Mattiske (2013)
Recon (2010)
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 over 300 kilometres from the application area (GIS Database).

Mattiske (2013) did not record any TECs during the flora and vegetation survey.

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 at variance to this Principle**
The application area is located within the Coolgardie Interim Biogeographical Regionalisation for Australia (IBRA) bioregion (GIS Database). Approximately 97.96% of the pre-European vegetation remains within the Coolgardie bioregion (Government of Western Australia, 2013).

The vegetation of the application area has been mapped as Beard vegetation association 468 (GIS Database). Over 98% of this Beard vegetation association remains at both a state and bioregional level (Government of Western Australia, 2013). Therefore, the area proposed to be cleared does not represent a significant remnant of native vegetation within an area that has been extensively cleared. A review of aerial imagery also shows that vegetation within the application area is not a remnant within the local area (GIS Database).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Current Extent % in DPaW Managed Lands*
IBRA Bioregion - Coolgardie	12,912,204	12,648,491	~97.96	Least Concern	~15.84
Beard vegetation associations - State					
468	592,022	583,903	~98.63	Least Concern	~23.15
Beard vegetation associations - Bioregion					
468	583,358	575,361	~98.63	Least Concern	~22.72

* Government of Western Australia (2013)
** 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)
Government of Western Australia (2013)
GIS Database:
- IBRA WA (Regions - Sub Regions)
- Kanowna 1.4m Orthomosaic - Landgate 2003
- 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

There are several minor, non-perennial watercourses that intersect the application area (GIS Database). According to Mattiske (2013), there are minor creek channels and seasonally wet areas (i.e. floodplains) in the survey area which are dry for most of the year and only flow after intermittent rainfall events. Available databases show that numerous minor drainage lines occur in the local area (GIS Database).

Two vegetation communities were identified as growing in association with a watercourse (E4 and C1) (Mattiske, 2013). Vegetation community C1 was described as growing on seasonally inundated drainage lines and vegetation community E4 was described as growing adjacent to drainage lines on flats (Mattiske, 2013). Potential impacts to these watercourses and associated vegetation may be minimised by the implementation of a watercourse management condition.

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

Methodology

Mattiske (2013)
GIS Database:
- Hydrography, linear

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

Comments

Proposal may be at variance to this Principle

The application area is located within the Kambalda Soil-Landscape Zone (Tille, 2006). This zone is characterised by flat to undulating plains (with hills, ranges and some salt lakes and stony plains) on greenstone and granitic rocks of the Yilgarn Craton (Tille, 2006). Soils comprise calcareous loamy earths and red loamy earths with salt lakes soils and some redbrown hardpan shallow loams and red sandy duplexes (Tille, 2006).

The application area is part of a flat, undulating landscape where flooding occurs following intermittent heavy rainfall, typically from cyclonic systems (Mattiske, 2013). The application area experiences an arid to semi arid climate with an average annual rainfall of approximately 267.6 millimetres (CALM, 2002; BoM, 2014). There may be a potential for erosion to occur especially given the large size of the proposed clearing (160 hectares) and presence of drainage areas. Potential impacts from erosion as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

The application area has an annual average evaporation rate of over ten times the annual average rainfall (BoM, 2014; GIS Database). Based on this information, surface flow during normal rainfall events are likely to be shortlived and recharge to groundwater expected to be minimal. This would reduce the likelihood of raised saline water tables occurring as a result of the proposed clearing.

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

Methodology

BoM (2014)
CALM (2002)
Mattiske (2013)
Tille (2006)
GIS Database:
- Evaporation Isopleths

(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 conservation areas or Department of Parks and Wildlife managed lands (GIS Database). The nearest conservation area is the Lakeside Timber Reserve located approximately 5 kilometres south west of the application area (GIS Database). Based on the distance between the application area and the timber reserve, the proposed clearing is not likely to impact the environmental values of any conservation area.

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

Methodology

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 (GIS Database). There are no permanent waterbodies or watercourses within the application area, however, there are several minor non perennial watercourses (GIS Database). Clearing in the vicinity of these may result in localised erosion and sedimentation, particularly following heavy seasonal rainfall. Potential impacts to the surface water quality as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition and a watercourse management condition.

The climate of the area is arid to semi-arid with rainfall that usually occurs in winter but sometimes occurs in summer (CALM, 2002). The application area receives an average annual rainfall of approximately 267.6 millimetres with an average annual evaporation rate of between 2,600 and 2,800 millimetres (BoM, 2014; GIS Database). Any surface flows are therefore likely to be short lived.

Groundwater salinity in the local area is estimated to be between 14,000 – 35,000 milligrams/Litre Total Dissolved Solids (TDS), which is considered saline (GIS Database). The proposed clearing is not likely to significantly alter groundwater salinity levels within the application area.

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

Methodology

BoM (2014)
CALM (2002)
GIS Database:
- Evaporation Isopleths
- Groundwater Salinity, Statewide
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)

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

Comments

Proposal is not likely to be at variance to this Principle

The application area is located within the Raeside-Ponton catchment area (GIS Database). Given the size of the area to be cleared (160 hectares) in relation to the size of the catchment area (11,589,533 hectares) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a local or catchment scale.

With an average annual rainfall of 267.6 millimetres and an average annual evaporation rate of between 2,600 and 2,800 millimetres there is likely to be little surface flow during normal seasonal rains (BoM, 2014; GIS Database). Whilst large rainfall events may result in flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding.

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

Methodology

BoM (2014)
GIS Database:
- Evaporation Isopleths
- Hydrographic Catchments – Catchments

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

Comments

There is one native title claim over the area under application: WC2013/009 (GIS Database). This claim has been filed at the federal court 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 21 July 2014 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

Methodology

GIS Database:

- Aboriginal Sites of Significance
- Native Title Claims – Filed at the Federal Court

4. References

BoM (2014) Climate Statistics for Australian Locations. A Search for Climate Statistics for Kalgoorlie-Boulder Airport, Australian Government Bureau of Meteorology, viewed 1 August 2014, <http://www.bom.gov.au/climate/averages/tables/cw_012038.shtml>.

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

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) *Leipoa ocellata — Malleefowl*. URL: http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=934, viewed 1 August 2014. Department of the Environment.

Department of the Environment (2014b) *Tringa glareola — Wood Sandpiper*. URL: http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=829, viewed 1 August 2014. Department of the Environment.

DPaW (2014) NatureMap - Mapping Western Australia Biodiversity, Department of Environment and Conservation. http://naturemap.dec.wa.gov.au/default.aspx, viewed 1 August 2014.

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.

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 Nimbus Project Area. Unpublished report prepared by Mattiske Consulting Pty Ltd for MacPhersons Resources dated April 2013.

Ninox (2012) A Level 1 Vertebrate Fauna Desktop Review of the Nimbus Project Area, East of Kalgoorlie, Western Australia. Unpublished report prepared by Ninox Wildlife Consulting for LJ Environmental Consulting dated August 2012.

Outback Ecology (2014) MacPhersons Resources Ltd Nimbus Project Targeted Malleefowl (*Leipoa ocellata*) Survey. Unpublished report prepared by Outback Ecology (MWH Australia Pty Ltd) for MacPhersons Resources Ltd dated January 2014.

Recon (2010) Nimbus Vegetation Survey. Unpublished report prepared by Recon Environmental for Reed Resources Ltd dated May 2010.

Tille. P. (2006) Soil-landscapes of Western Australia's Rangelands and Arid Interior. Technical Report 313. Department of Agriculture and Food, Western Australia. ISSN 1039-7205.

Western Australian Herbarium (2014) FloraBase - the Western Australian Flora. Department of Parks and Wildlife. http://florabase.dpaw.wa.gov.au/.

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 'r`are 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.