



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4580/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Mount Gibson Mining Limited**

1.3. Property details

Property: Mining Lease 70/896
 Mining Lease 70/1062
 Local Government Area: City of Greater Geraldton
 Colloquial name: Talling Peak T4 Waste Dump Expansion Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
15.4		Mechanical Removal	Waste Dump Expansion

1.5. Decision on application

Decision on Permit Application: Grant
 Decision Date: 17 November 2011

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. Two Beard vegetation associations have been mapped within the application area (GIS Database; Shepherd, 2009):

40: Shrublands; acacia scrub, various species; and
 228: Shrublands; *Acacia quadrimarginea* scrub.

Numerous flora and vegetation surveys have been conducted over the Talling Peak mine site between 1992 and 2010, however no surveys have been conducted to specifically define the vegetation units within the application area (GHD, 2011). Through revision of existing reports and knowledge of the local area, GHD (2011) have defined one vegetation community within the application area:

Acacia shrublands – dominated by *Acacia quadrimarginea*/*Acacia ramulosa* var. *linophylla*.

Clearing Description Mount Gibson Mining Limited is proposing to clear up to 15.4 hectares of native vegetation for the purpose of expanding the existing Talling Peak mine site T4 waste dump.

Clearing will be conducted by mechanical means and vegetation stockpiled and retained for rehabilitation purposes.

Vegetation Condition Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994);

To

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

Comment The application area is located within the Yalgoo region of Western Australia and is situated approximately 47 Kilometres north of Mullewa.

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 applied to clear is within the Yalgoo Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The Yalgoo bioregion is an interzone between the south-western and Murchison bioregions, and whilst it is rich and diverse in flora and fauna, most species are wide ranging and typically occur in one or more adjoining bioregions (CALM, 2002). Pastoralism is the dominant land use in the Yalgoo, comprising approximately 76% of the total land area (CALM, 2002). However, mining also has an increasing interest in the bioregion (CALM, 2002).

Numerous flora and vegetation surveys have been conducted over the Tallering Peak mine site between 1992 and 2010 (GHD, 2011). No flora surveys have been undertaken to specifically define the vegetation within the application area (GHD, 2011). Previous surveys of the Tallering Peak mine site were used to define the vegetation within the application area as *Acacia* shrublands dominated by *Acacia quadrimarginea* and *Acacia linophylla* (GHD, 2011). This vegetation is common locally and regionally and is unlikely to contain higher biodiversity than the surrounding areas.

A Declared Rare Flora (DRF) search was undertaken over the Tallering Peak mine site, including the application area, by Muir Environmental (2000) in June 2000. A further targeted search for two conservation significant flora species, *Hemigenia* sp. Tallering (Priority 1) and *Eremophila* sp. (Locally Significant), was undertaken by GHD (2007) in August 2007. No DRF, Priority Flora or locally significant flora species were recorded within the application area (Muir Environmental, 2000; GHD, 2007).

The application area lies within the buffer zone of Priority Ecological Community (PEC) Tallering Peak vegetation complexes (Priority 1) (GIS Database). This PEC is known to occur on the southern and eastern slopes of Tallering Range (GHD, 2011; J.E. Foster, pers comm., 2 November 2011). As the application area is on the lower western slopes of the Tallering Range, it is considered unlikely that the PEC will be impacted by the proposed clearing.

Four introduced taxa, *Acetosa vesicaria*, *Carthamus lanatus*, *Emex australis* and *Solanum hystrix*, have been recorded within the Tallering Peak mine area (Mount Gibson Mining Limited, 2010). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This can in turn lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. Two of these species, *Carthamus lanatus* and *Emex australis* are listed as a 'Declared Plant' species under the *Agriculture and Related Resources Protection Act 1976* by the Department of Agriculture and Food. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

The faunal habitats within the application area are well represented on a regional scale and are therefore unlikely to be significant (Bamford Consulting Ecologists, 2003; 2008). It is therefore considered unlikely that the proposed clearing will impact on faunal diversity locally or regionally.

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

Methodology Bamford Consulting Ecologists (2003)
Bamford Consulting Ecologists (2008)
CALM (2002)
GHD (2007)
GHD (2011)
Mount Gibson Mining Limited (2010)
Muir Environmental (2000)
GIS Database:
- IBRA WA (regions – subregions)
- 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**

Bamford Consulting Ecologists (2003) undertook a fauna review and targeted fauna survey of the Tallering Peak area between 15 and 19 May 2003. The fauna review involved studying existing fauna information for the Tallering Peak area, whilst the targeted fauna survey entailed searching for conservation significant fauna which Ninox Wildlife Consulting (1995) had earlier identified as possibly occurring in the Tallering Peak area (Bamford Consulting Ecologists, 2003).

The targeted fauna survey conducted by Bamford Consulting Ecologists (2003) included a range of survey methods such as Elliott trapping, harp trapping, spotlighting, systematic searches and opportunistic sightings, anabat recording, roost/nest searching and invertebrate pit trapping (Bamford Consulting Ecologists, 2003). The survey was hampered by inclement weather and limited by time constraints (Bamford Consulting Ecologists, 2003).

On the basis of existing records, species distributions and habitat preferences, a total of 247 fauna species may occur in the Tallering Peak area, with a further 17 species now believed to be extinct (Bamford Consulting Ecologists, 2003). The targeted fauna survey conducted by Bamford Consulting Ecologists located 13 species not recorded by Ninnox Wildlife Consulting in 1995, bringing the total number of fauna species actually recorded at the site to 116 (Bamford Consulting Ecologists, 2003).

The following conservation significant fauna taxa protected under the *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* and/or the *Western Australian Wildlife Conservation Act 1950* were the subject of a targeted fauna search by Bamford Consulting Ecologists (2003): Malleefowl (*Leipoa ocellata*), Black-flanked Rock Wallaby (*Petrogale lateralis lateralis*), Peregrine Falcon (*Falco peregrinus*), Major Mitchell's Cockatoo (*Cacatua leadbeateri*) and the Western Spiny-tailed Skink (*Egernia stokesii badia*). Species listed on the Department of Environment and Conservation's (DEC's) Priority fauna list were also the subject of targeted searches and included: Bush Stone-curlew (*Burhinus grallarius*), Australian Bustard (*Ardeotis australis*), Crested Bellbird (*Oreoica gutturalis gutturalis*), skink (*Cyclodomorphus branchialis*), and skink (*Lerista yuna*).

The Malleefowl (*Leipoa ocellata*) (Vulnerable and Schedule 1) is not likely to be impacted by the proposed clearing. The application area is likely to be suitable habitat for this species however, Bamford Consulting Ecologists (2003) spent approximately 13 person hours searching for the presence of Malleefowl mounds, of which none were located.

The Black-flanked Rock Wallaby (*Petrogale lateralis lateralis*) (Vulnerable and Schedule 1) is deemed to be locally extinct from the Tallering Peak area (Bamford Consulting Ecologists, 2003). While the application area provides suitable habitat for this species, no sightings were made despite exhaustive searches of rocky outcrops in the area (Bamford Consulting Ecologists, 2003).

A pair of Peregrine Falcons (*Falco peregrines*) (Schedule 4) were observed in the Tallering Peak area during the fauna survey by Bamford Consulting Ecologists, with a possible nest recorded on a rocky outcrop to the south of the Tallering Hill Trig point (Bamford Consulting Ecologists, 2003). A Spring survey would be required to determine whether this species is breeding in the area (Bamford Consulting Ecologists, 2003). The Peregrine Falcon was also observed during the 1995 fauna survey of the Tallering Peak area by Ninnox Wildlife Consulting. Given that the Peregrine Falcon is a mobile and wide-ranging species, it is not likely that the proposed clearing will result in a loss of significant habitat for this species.

Major Mitchell's Cockatoo (*Cacatua leadbeateri*) (Schedule 4) is likely to occur in the Tallering Peak area only as a vagrant (Bamford Consulting Ecologists, 2003). Whilst Tallering Peak is within the known distribution of Major Mitchell's Cockatoo, the habitat is likely to be unsuitable (Bamford Consulting Ecologists, 2003). Major Mitchell's Cockatoo is dependent on tree hollows including large Mallee Eucalypts for nesting (Pizzey & Knight, 1997), however vegetation in the Tallering Peak area typically consists of Mulga scrub which is unsuitable for nesting.

The Western Spiny-tailed Skink (*Egernia stokesii badia*) (Endangered and Schedule 1) was not recorded during the May 2003 fauna survey despite trapping and hand searching (Bamford Consulting Ecologists, 2003). This species was not found in the 1995 fauna survey by Ninnox Wildlife Consulting, despite intensive trapping and searching. According to the Department of Sustainability, Environment, Water, Population and Communities (2011) this species is known to inhabit York Gum, Salmon Gum and Gimlet woodlands. Given that these vegetation types do not exist in the application area, it is unlikely that the Western Spiny-tailed Skink will be impacted by the proposed clearing.

The Bush Stone-curlew (*Burhinus grallarius*) (Priority 4) was not recorded from the Tallering Peak area in 1995, but was heard calling to the south-west of Tallering Peak in the May 2003 fauna survey (Bamford Consulting Ecologists, 2003). The proposed clearing area is not likely to provide suitable habitat for this species. The Bush Stone curlew prefers to inhabit sandplain areas with Spinifex grasses, Mallee woodlands, dry and lightly timbered watercourses and coastal scrub (Pizzey & Knight, 1997). Suitable habitat does exist to the south-west of Tallering Peak along minor watercourses (Bamford Consulting Ecologists, 2003). The proposed clearing is not likely to result in a loss of significant habitat for the Bush Stone-curlew.

The Australian Bustard (*Ardeotis australis*) (Priority 4) was not recorded in the fauna survey by Ninnox Wildlife Consulting in 1995, or the May 2003 survey by Bamford Consulting Ecologists. This species is not likely to occur in the application area as the habitat is largely unsuitable, however the Australian Bustard may occur in the general area on a semi-regular basis. It is not likely to be significantly impacted by the proposed clearing (Bamford Consulting Ecologists, 2003).

The Crested Bellbird (*Oreoica gutturalis gutturalis*) (Priority 4) was heard calling throughout the study area by Bamford Consulting Ecologists (2003). The Tallering Peak area is within the intergrade zone between the south-western subspecies (*Oreoica gutturalis gutturalis*) and the inland subspecies (*Oreoica gutturalis pallescens*). Based on this information, the birds which were heard calling are likely to have been intermediate in character and therefore not belonging to the Priority taxon (Bamford Consulting Ecologists, 2003).

The skink *Cyclodomorphus branchialis* (Vulnerable) was not located in the Tallering Peak area despite intensive searches of suitable habitat in 1995 and 2003 (Ninnox Wildlife Consulting, 1995; Bamford Consulting Ecologists,

2003). On this basis, it would appear unlikely to occur in the proposed clearance area (Bamford Consulting Ecologists, 2003).

The skink *Lerista yuna* (Priority 3) is known only from areas north-east and south-east of Yuna (DEC, 2007) located approximately 65km south west of the proposed clearing area (GIS Database). *Lerista yuna* was not found despite intensive searching of apparently suitable habitat in 1995 and 2003 (Ninox Wildlife Consulting, 1995; Bamford Consulting Ecologists, 2003). Based on this information, *Lerista yuna* is not likely to be present or subsequently impacted by the proposed clearing.

The four most important habitats identified in the Talling Peak area by Bamford Consulting Ecologists (2003) include a mine adit in the Talling Peak (located north-east of the proposed clearing area), breakaway areas, rocky outcrops on the Talling Hill range and watercourses. Numerous fauna species rely on these habitats for roosting/nesting and feeding (Bamford Consulting Ecologists, 2003). As the application area is located on lower slopes, none of these fauna habitat types are present.

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

Methodology Bamford Consulting Ecologists (2003).
Bamford Consulting Ecologists (2008).
DEC & DoIR (2007).
Department of Sustainability, Environment, Water, Population and Communities (2011).
Ninox Wildlife Consulting (1995).
Pizzey & Knight (1997).

(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**
There are no known records of Declared Rare Flora (DRF) species within the application area (GIS Database). Numerous flora and vegetation surveys conducted at Talling Peak between 1992 and 2010 have not identified any DRF within the area (GHD, 2011).

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

Methodology GHD (2011)
GIS Database:
- Threatend and Priotiy 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 known records of Threatened Ecological Communities (TEC's) within the application area (GIS Database). The nearest known TEC is approximately 103 kilometres south southeast of the application area (GIS Database). At this distance, there is little likelihood of any impact to the TEC as a result of the proposed clearing.

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

Methodology 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 Yalgoo Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). Shepherd (2009) reports that approximately 98.68% of the pre-European vegetation remains within the Pilbara bioregion.

The vegetation in the application area has been broadly mapped as Beard vegetation associations:

40: Shrublands; acacia scrub, various species; and
228: Shrublands; *Acacia quadrimarginea* scrub.

According to Shepherd (2009) approximately 94.01% and 100% of Beard vegetation associations 40 and 228 remain within the Yalgoo bioregion respectively (see table on next page).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves (and post clearing %)
IBRA Bioregion - Yalgoo	5,057,315	4,990,570	~98.68	Least Concern	~9.86 (~9.86)
IBRA Subregion - Talling	3,498,944	3,451,791	~98.65	Least Concern	~2.14 (~2.17)
Local Government – Mullewa	811,059	395,442	~48.76	Depleted	~1.79 (~3.60)
Beard vegetation associations - State					
40	369,056	350,245	~94.90	Least Concern	~1.53 (~1.59)
228	10,384	10,384	~100	Least Concern	n/a
Beard vegetation associations - Bioregion					
40	301,713	287,220	~94.01	Least Concern	~1.87 (~1.97)
228	3,586	3,586	~100	Least Concern	n/a
Beard vegetation associations - subregion					
40	301,699	283,620	~94.01	Least Concern	~1.87 (~1.97)
228	3,586	3,586	~100	Least Concern	n/a

* Shepherd (2009)

** Department of Natural Resources and Environment (2002)

The vegetation within the application area is not considered to be a remnant of native vegetation in an area that has been extensively cleared.

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 Proposal is not likely to be at variance to this Principle

There are no permanent wetlands or watercourses within the application area, however there is one ephemeral watercourse (GIS Database).

Numerous ephemeral streams originate from Talling Peak but there is no riparian vegetation associated with these streams due to a combination of their ephemeral nature, the predominantly rocky substrate and the harsh dry climate of the Talling Peak area (GHD, 2011).

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

Methodology GHD (2011)
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 intersects the following two land systems (GIS Database):

The Talling land system is characterised by prominent ridges and hills of banded ironstone, dolerite and

sedimentary rocks supporting bowgada and other acacia shrublands (Payne et al., 1998). This land system is not susceptible to erosion (Payne et al., 1998).

The Tindalarra land system is characterised by hardpan plains supporting acacia shrublands with sparse drainage channels and associated drainage floors supporting saltbush/bluebush shrubs under snakewood (Payne et al., 1998). This land system is moderately susceptible to erosion (Payne et al., 1998).

Within the application area, the gently to moderately inclined hillslope soils within the Talling land system are shallow (40 cm deep) with abundant rock rubble (GHD, 2011). These soils grade into sandy surfaced plain soils of the Tindalarra land system with similar profile depths (GHD, 2011). Potential wind erosion impacts may be minimised by the implementation of a staged clearing condition.

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

Methodology Payne et al. (1998)
GIS Database:
- Rangeland Land System Mapping

(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 proposed clearing is not located within a conservation reserve (GIS Database). The nearest conservation reserve is Urawa Nature Reserve, located approximately 5 kilometres south west of the application area (GIS Database). At this distance it is unlikely that the proposed clearing will impact on the environmental values of any conservation reserve.

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

There are no permanent wetlands or watercourses within the application area (GIS Database). The climate within the application area is dry with an average annual rainfall of approximately 339 millimetres recorded at the Mullewa weather station (BoM, 2011). Given the low annual rainfall and the lack of permanent water bodies within the application area it is considered unlikely that the proposed clearing will cause the deterioration of any surface water.

The application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is the Wicherina Catchment Area, located approximately 76 kilometres south west of the application area (GIS Database). At this distance it is unlikely that the proposed clearing will impact on the water quality of the Wicherina Catchment Area.

The groundwater salinity within the application area is approximately 3,000 – 7,000 milligrams/Litre total Dissolved Solids (TDS) (GIS Database). It is considered unlikely that the proposed clearing of approximately 15.4 hectares of native vegetation within the Yilgarn-Murchison Groundwater Province (10,136,099 hectares) (GIS Database) will cause salinity levels within the application area to rise significantly.

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

Methodology BoM (2011)
GIS Database:
- Groundwater Provinces
- Groundwater Salinity, Statewide
- Hydrography, linear
- Public Drinking Water Source Area (PDWSA)

(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 experiences an arid to semi-arid warm Mediterranean climate with an average annual rainfall of approximately 339 millimetres recorded at Mullewa weather station (BoM, 2011; CALM, 2002). The average annual evaporation rate for the area is between 2,800 and 3,000 millimetres (GIS Database).

Due to the low average rainfall and high evaporation rates, it is expected that there would be little surface water flow generated during normal seasonal rains (GHD, 2011).

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

Methodology BoM (2011)
CALM (2002)
GHD (2011)
GIS Database:
- Evaporation Isopleths

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

Comments

There are three Native Title Claims (WC97/72, WC96/93 and WC04/10) over the area under application (GIS Database). These claims have been registered with the Native Title Tribunal on behalf of the claimant groups. 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*.

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 and Conservation 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 12 September 2011 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the proposed clearing.

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

4. References

- Bamford Consulting Ecologists (2003) Tallering Peak Fauna Review and Investigations into Significant Species. Unpublished report dated June 2003.
- Bamford Consulting Ecologists (2008) Mount Gibson Mining: preliminary surveys for significant invertebrates at Tallering Peak in conjunction with proposed mine approvals. Preliminary Draft Report.
- BoM (2011) BoM Website - Climate Averages by Number, Averages for MULLEWA. www.bom.gov.au/climate/averages/tables.shtml (Accessed 3 November 2011)
- DEC (2007) Biodiversity advice for land clearing application. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR), received 2 April 2007. Biodiversity Coordination Section, Department of Environment and Conservation, Western Australia.
- Department of Conservation and Land Management (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions.
- 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 Sustainability, Environment, Water, Population and Communities (2011). *Egernia stokesii badia* in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. Available from: <http://www.environment.gov.au/sprat>. Accessed 3 Nov 2011.
- GHD (2007) Mount Gibson Mining Ltd Report for Tallering Peak Flora Survey Targeted Search for *Eremophila* sp. and *Hemigenia* sp. Tallering. Unpublished report dated October 2007.
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- Mount Gibson Mining Limited (2010) Environmental Management Plan Tallering Peak Iron Ore Mine. Unpublished report dated December 2010.
- Muir Environmental (2000) Rare Flora Search on Exploration and Mining Leases in the General Area of Tallering Peak, Mid-West Region, Western Australia. Unpublished report prepared for ATA Environmental dated July 2000.
- Ninox Wildlife Consulting (1995) Tallering Peak Iron Ore Mine - NOI. Unpublished report.
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- Pizzey, G & Knight, F (1997) The Graham Pizzey and Frank Knight Field Guide to the Birds of Australia, Angus and Robertson, Sydney Australia.
- Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.

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.