



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5579/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Mount Gibson Mining Ltd

1.3. Property details

Property: Mining Lease 70/896
Mining Lease 70/1064
Local Government Area: City of Greater Geraldton
Colloquial name: Talling Peak Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 27 June 2013

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
<p>Beard vegetation associations have been mapped for the whole of Western Australia and are useful to look at vegetation in a regional context. One Beard vegetation association has been mapped within the application area:</p> <p>Beard vegetation association 228: Shrublands; <i>Acacia quadrimarginea</i> scrub (GIS Database).</p> <p>Ecologists from GHD conducted a flora and vegetation survey over the application area and its surrounds in February 2012. The vegetation of the survey area was classified into five vegetation types with three of these occurring within the application area (GHD, 2012, 2013). An additional classification type of 'highly disturbed' was mapped both inside and outside the application area (GHD, 2012, 2013).</p> <p>Shrubland of <i>Acacia ramulosa</i> var. <i>linophylla</i>, <i>Acacia umbraculiformis</i> and <i>Eremophila forrestii</i> subsp. <i>forrestii</i> over sparse heath of <i>Solanum ellipticum</i> and <i>Grevillea stenostachya</i> over sparse grassland of Poaceae sp. and <i>Aristida ?contorta</i>.</p> <p>Sparse shrubland of <i>Ptilotus obovatus</i>, <i>Dodonaea viscosa</i> subsp. <i>mucronata</i> and <i>Sida</i> sp. over grassland of Poaceae sp.</p> <p>Sparse shrubland of <i>Acacia unbraculiformis</i> and <i>Grevillea stenostachya</i> over heathland of <i>Ptilotus obovatus</i> and <i>Dodonaea viscosa</i> subsp. <i>mucronata</i> over sparse herbland of <i>Vittadinia</i> cf. <i>dissecta</i> var. <i>hirta</i> and <i>Crassula colorata</i> var. <i>acuminata</i> over grassland of Poaceae sp.</p> <p>Highly disturbed - no remnant vegetation.</p>	<p>Mount Gibson Mining Ltd has applied to clear up to 17.2 hectares of native vegetation for the purpose of mineral production. The clearing is for the T1 pit area and haul road at Talling Peak minesite. The application area is located approximately 50 kilometres north of Mullewa.</p> <p>Vegetation will be cleared by bulldozers.</p>	<p>Pristine: No obvious signs of disturbance (Keighery, 1994);</p> <p>To:</p> <p>Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).</p>	<p>The vegetation condition was assessed by ecologists from GHD (2012).</p>

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 may be at variance to this Principle

The application area occurs within the Yalgoo Interim Biogeographic Regionalisation of Australia (IBRA) region (GIS Database). The region is an interzone between south-western bioregions and the Murchison. The region is characterised by low woodlands to open woodlands of Eucalyptus, Acacia and Callitris on red sandy plains of the Western Yilgarn Craton and southern Carnarvon Basin (CALM, 2002). The latter has a basement of Phanerozoic sediments. Mulga, Callitris-*Eucalyptus salubris*, and Bowgada open woodlands and scrubs on earth to sandy-earth plains in the western Yilgarn Craton. The subregion is particularly rich in ephemerals (CALM, 2002).

The application area for the T1 pit is located north-east of the existing Talling Peak Mine. Talling Peak is part of the Talling Range, an elevated topographic feature rising 150 metres above the surrounding undulating plains and breakaway country (GHD, 2012). Talling Range is approximately 8 kilometres long and is composed of resistant banded ironstone formations (BIF) (GHD, 2012).

BIFs are characterised by unique geology, soils and relative isolation. As a consequence, BIFs provide unique habitat for flora and fauna species. The biodiversity value of BIFs relates to the endemic plant species, rare and restricted plant species and distinct communities that exist in these unique landscapes. The Department of Environment and Conservation (DEC), in conjunction with the Department of Industry and Resources (DoIR) (now Department of Mines and Petroleum), undertook the "Strategic Review of the Conservation and Resource Values of the Banded Ironstone Formation of the Yilgarn Craton" to identify the biodiversity values and iron prospectivity of various BIF ridges in the Midwest and Goldfields. The purpose of this review was to provide additional information to allow the Western Australian government to take a strategic approach to resource utilisation and biodiversity conservation decision making (DEC & DoIR, 2007). In this review, DEC & DoIR (2007) rate the Talling Peak to be a lower biodiversity value site in comparison to other BIFs in the Yilgarn Craton. This rating acknowledges that significant mining has already taken place at Talling Peak.

Ecologists from GHD conducted a Level 2 flora and vegetation survey over the application area and its surrounds in February 2012. The survey covered the surrounds of the proposed T1 area and not the existing Talling Peak mine area, which has been covered by other flora surveys. A total of 75 native plant taxa, representing 43 genera from 24 families, were recorded in the survey area (GHD, 2012). The dominant families were Fabaceae, Myrtaceae and Poaceae (GHD, 2012).

No Threatened Flora or Threatened Ecological Communities were recorded within the application area during the flora survey or have previously been recorded within the application area (GHD, 2012; GIS Database).

Four Priority Flora species were identified during the survey and three of these species occurred within the application area. *Eremophila* sp. Talling (P1), *Micromyrtus placooides* (P3) and *Prostanthera petrophila* (P3) were recorded within the application area (GHD, 2012, 2013).

Eremophila sp. Talling has only been recorded from the Talling Peak area. GHD (2012) recorded an additional 650 plants to the previously recorded 315 plants located by Coffey (2008) in the survey area. This species was found growing along the ridge top and drainage lines within the survey area (GHD, 2012).

Micromyrtus placooides has been previously recorded through the Murchison and Yalgoo IBRA regions (GHD 2012; Western Australian Herbarium, 2013). GHD (2012) recorded an additional 8,094 plants to the previously recorded 92 plants located by ATA Environmental (2006) and Muir Environmental (2000) within the survey area. The plant was found growing throughout most of the survey area (GHD, 2012).

Prostanthera petrophila has been recorded in various locations in the Murchison and Yalgoo IBRA regions (GHD, 2012; Western Australian Herbarium, 2013). GHD (2012) found an additional 60 plants to the 7 plants previously recorded within the survey area by ATA Environmental (2006) and Muir Environmental (1998, 2000). This species was found growing along the ridge top in areas associated with iron outcropping (GHD, 2012). This species was observed to be heavily grazed by goats at the time of the survey (GHD, 2012).

GHD (2012) estimated the impact to conservation significant flora based on information in the Western Australian Herbarium's Florabase, the GHD survey, and previously recorded priority plant locations by Coffey (2008, 2010), ATA Environmental & Muir (2007), Muir Environmental (2000) and GHD (2007b). The results of the GHD assessment are shown in the table below. The number of plants in the application area and the figures for *Micromyrtus placooides* are from GHD (2013), while the figures for *Eremophila* sp. Talling and *Prostanthera petrophila* are from GHD (2012).

Species	Status	No. of plants in survey area	No. of plants in application area	No. of known records regionally*	No. of known records locally (Talling Peak Mine)	Percentage loss regionally (%)
<i>Eremophila</i> sp. Talling (J.D. Start & M.J. Greeve D 516)	P1	950	25	11,789	9,379	0.2
<i>Micromyrtus placoides</i>	P3	25,163	3,186	25,466	25,439	12.6
<i>Prostanthera petrophila</i>	P3	67	16	660	396	2.4

* Records based on Florabase, previous surveys for Talling Peak and GHD (2012) survey

The proposed clearing will only impact on a small percentage (<2.5%) of the known populations for *Eremophila* sp. Talling and *Prostanthera petrophila* and a moderate percentage (12.6%) of the known population of *Micromyrtus placoides* (GHD, 2012, 2013). Mount Gibson Mining has established a number of Flora Management Zones at the Talling Peak Mine to protect Priority and significant flora and their habitats, and Priority Ecological Communities (PEC). All of the above listed Priority Flora species have populations within Flora Management Zones at the Talling Peak Mine (GHD, 2012). The proposed clearing would not result in a significant decline for *Eremophila* sp. Talling and *Prostanthera petrophila* and while the clearing will have some impact on *Micromyrtus placoides*, there is protection for the species within the Flora Management Zones.

The application area is within the buffer of the PEC 'Talling Peak vegetation complexes' (GIS Database). Talling Peak in the northwest is a massif of banded ironstone and jaspilite, with outcropping masses of rock along the spine. Vegetation is sparse and includes shrubs of only 1.2 metres of *Acacia quadrimarginea*, *Acacia ?coolgardiensis*, *Eremophila leucophylla*, *Thryptomene johnsonii*, a smaller *Baeckea* or *Thryptomene* sp. and *Ptilotus obovatus* (DEC, 2012). The flora and vegetation survey did not identify flora communities similar in species composition to the PEC (GHD, 2012). The survey area ridge top was dominated by the vegetation type 'Acacia umbraculiformis, Acacia andrewsii and Eremophila spp.' (GHD, 2012). Mount Gibson Mining has protected remnant vegetation within this PEC and its surrounds in a Flora Management Zone and a small part of one of these zones is intersected by the current application area. The intersected portions of the zone consisted of shrubland of *Grevillea stenostachya*, *Baeckea pentagonantha* and *Dodonaea phachyneura* over isolated grasses of *Cymbopogon ambiguous* over sparse herbs of *Olearia stuartii*, *Lepidium* sp. and *Lobelia* sp. Areas where the Flora Management Zone intersected the survey area were not consistent with the Talling Peak PEC (GHD, 2012).

Three introduced flora species and one native weed species were recorded during the flora survey. The weed species *Aira caryophylla* was recorded throughout the survey in low to medium densities (GHD, 2012). Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Grazing by goats is a major issue at Talling Peak with the mine surrounded by pastoral lease. During the flora survey, some plants were not able to be positively identified to species level as they were too heavily grazed upon (GHD, 2012). A fence has been erected around the mine site to prevent goats from entering and grazing on Priority Flora and rehabilitation. While the fence has been successful in restricting access to the site, there were goats trapped within the fence when it was built so goats remain a problem on site (B. O'Grady, pers. comm.). Mount Gibson Mining has been undertaking a goat trapping program and will continue to remove as many goats as possible in order to protect Priority Flora and rehabilitation (B. O'Grady, pers. comm.).

The application area is considered to be of medium biodiversity based on the flora taxa and presence of BIF. The elevated value assets associated with the BIF, such as the Priority Flora and PECs, have populations protected outside the application area in Talling Peak Flora Management Zones.

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

Methodology ATA Environmental (2006)
ATA Environmental & Muir (2007)
CALM (2002)
Coffey (2008)

Coffey (2010)
DEC (2012)
DEC & DoIR (2007)
GHD (2007b)
GHD (2012)
GHD (2013)
Muir Environmental (1998)
Muir Environmental (2000)
Western Australian Herbarium (2013)
GIS Database:
- IBRA WA (Regions - Subregions)
- 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 may be at variance to this Principle

A Level 1 fauna survey was conducted by ecologists from GHD over the application area and its surrounds consisting of an inventory of fauna species in the study area and the identification of fauna habitat types for conservation significant fauna species. The survey area for the fauna survey was the same as for the GHD (2012) flora survey and covered the surrounds of the proposed T1 area and not the existing Tallering Peak mine area, which has been covered by other fauna surveys. The site reconnaissance field survey was undertaken in February 2012.

The survey area contained three broad fauna habitat types based on predominant landforms, soil and vegetation structure in the area (GHD, 2012). Two of these fauna habitat types were identified within the application area:

- *Acacia* shrublands on mid-level to low-lying grasslands with abundant rock rubble; and
- Banded ironstone outcropping on mid-level to hilltop (GHD, 2013).

The proximity of the survey area to mining operations, roads and accommodation at the adjacent Tallering Peak Mine has somewhat reduced the habitat value of the survey area. The vegetation within the area is generally intact, however, vehicle tracks and drill pads dissect the survey area (GHD, 2012). Areas that have been previously cleared would offer little habitat value to native species (GHD, 2012).

The majority of the survey area is *Acacia* shrublands, which have habitat value for a number of fauna species (GHD, 2012). The vegetation communities present within the application area occur in the surrounding region, in ranges located with 5 kilometres, in similar and/or better condition to that within the survey area. These areas are not considered a significant habitat type (GHD, 2012).

The banded ironstone outcropping that occurs along the ridge are the areas of highest habitat value within the survey area (GHD, 2012). Rocky outcrops provide shelter for a number of fauna species including reptiles and small mammals. However, this type of habitat also occurs within the surrounding area and is not unique to the survey area (GHD, 2012).

No fauna species of conservation significance were recorded during the February 2012 survey (GHD, 2012). Four significant fauna species have previously been recorded within the Tallering Peak area from earlier fauna surveys by Ninnox Wildlife Consulting (1995), GHD (2007a) and Bamford Consulting Ecologists (2003):

- Peregrine Falcon (*Falco peregrinus*) - Schedule 4 *Wildlife Conservation Act 1950* (WC Act);
- Rainbow Bee-eater (*Merops ornatus*) - *Migratory Environment Protection and Biodiversity Conservation Act 1999*;
- Bush Stone-curlew (*Burhinus grallarius*) - Department of Environment and Conservation Priority 4; and
- Lesser Stick-nest Rat (*Leporillus apicalis*) - Schedule 2 WC Act.

Suitable habitat for the Peregrine Falcon and Bush Stone-curlew is present within the T1 survey area, however, no nesting activity or evidence of these species was observed during the GHD (2012) survey. The Rainbow Bee-eater potentially occurs within the survey area (GHD, 2012). Each of the avifauna species are highly mobile with wide distributions and the proposed clearing is unlikely to impact on the species. Evidence of the Lesser Stick-nest Rat was noted during Ninnox surveys in 1995 (Ninnox, 1995 as quoted in GHD, 2012). This species was known to build nests, which can remain in place for long periods of time. The Lesser Stick-nest Rat was last collected in 1933 and the last active nest site was recorded in 1970 along the Canning Stock Route (Van Dyke, 2008 as quoted in GHD, 2012). This species is now considered extinct.

Invertebrate fauna surveys by Bamford Consulting Ecologists (2008a, 2008b) in the the adjacent Tallering Peak recorded the snail *Pleuroxia bethana*, the millipede *Antichiropus* sp. nov. Tallering Peak, and unidentified slater and the spider *Idiosoma nigrum* (Schedule 1 WC Act). Regionally, the population of *Idiosoma nigrum* is far greater than previously reported from Wheatbelt populations with the discovery of the spider in many ranges

throughout the Murchison (GHD, 2012). GHD recorded two locations of the snail *Pleuroxia bethana* in the T1 survey area (GHD, 2012). The snail, millipede and slater species are potential Short Range Endemic (SRE) invertebrates as they have restricted distributions (Bamford Consulting Ecologists, 2008b). The habitat at the Talling Peak site supports significant invertebrates, however, the significant invertebrates all appear to be locally common and widespread in the rocky hills in the Talling region (Bamford Consulting Ecologists, 2008b).

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

Methodology Bamford Consulting Ecologists (2003)
Bamford Consulting Ecologists (2008a)
Bamford Consulting Ecologists (2008b)
GHD (2007a)
GHD (2012)
GHD (2013)

(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 within the application area (GIS Database). Three Threatened Flora species were identified as potentially occurring within 10 kilometres of the application area: *Eremophila viscida*, *Pityrodia axillaris* and *Roycea pycnophylloides* (GHD, 2012).

Ecologists from GHD conducted a Level 2 flora and vegetation survey over the application area and its surrounds in February 2012. Numerous other flora and vegetation surveys have been undertaken in the wider Talling Peak area and some of these overlapped the GHD (2012) survey area. No Threatened Flora were recorded within the application area (GHD, 2012).

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

Methodology GHD (2012)
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

A search of available databases revealed there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest recorded TEC is located approximately 105 kilometres south-east of the application area (GIS Database).

No TECs were identified during the flora and vegetation surveys conducted by GHD botanists (GHD, 2012).

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

Methodology GHD (2012)
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 clearing application area falls within the Yalgoo Interim Biogeographic Regionalisation for Australia (IBRA) bioregion in which approximately 97.4.0% of the pre-European vegetation remains (see table) (Government of Western Australia, 2013; GIS Database). This gives it a conservation status of 'Least Concern' according to the Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment, 2002).

The vegetation of the clearing application area has been mapped as Beard vegetation association 228 'Shrublands; *Acacia quadrimarginea* scrub' (GIS Database). Approximately 98.2% and 94.8% of this vegetation association remains at a state and bioregional level, respectively (Government of Western Australia, 2013). This vegetation association would be given a conservation status of 'Least Concern' at both a state and bioregional level (Department of Natural Resources and Environment, 2002).

The vegetation under application is not a remnant of vegetation in an area that has been extensively cleared.

	Pre-European Area (ha)*	Current Extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion – Yalgoo	5,057,326	4,924,606	~97.4	Least Concern	10.88
Beard Veg Assoc. – State					
228	10,384	10,199	~98.2	Least Concern	-
Beard Veg Assoc. – Bioregion					
228	3,586	3,401	~94.8	Least Concern	-

* 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 - 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 at variance to this Principle

There are no permanent watercourses or wetlands within the application area (GIS Database). In the local area, numerous ephemeral streams originate from Talling Peak but ephemeral creeklines were not located within the application area during the GHD flora and vegetation survey (GHD, 2013; GIS Database). The vegetation types mapped within the application area were not described as growing in association with watercourses or wetlands (GHD, 2012).

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

Methodology GHD (2012)
GHD (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 is not likely to be at variance to this Principle

The application area is within the Talling Land System (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). Stone mantles provide effective protection against soil erosion, although disturbance or removal of stone mantles may initiate erosion (Payne et al., 1998).

The potential for erosion in the application area will be limited due to the shallow soils and the dry climate of the application area (GHD, 2013). Potential impacts of runoff and sedimentation will be managed through Mount Gibson Mining's Environmental Management Plan (GHD, 2013).

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

Methodology GHD (2013)
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 application area is not within conservation estate (GIS Database). The closest Department of Environment

and Conservation estate is Urawa Nature Reserve, which is located approximately 7 kilometres south-west of the application area (GIS Database). Given the distance between these two areas it is unlikely that the environmental values of the nature reserve will be compromised from the proposed clearing.

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 watercourses or wetlands within the application area (GIS Database). In the local area, numerous ephemeral streams originate from Tallering Peak but ephemeral creeklines were not located within the application area during the GHD flora and vegetation survey (GHD, 2013; GIS Database). The slopes of the application area are relatively steep, however, the climate is dry and local watercourses are ephemeral in nature (GHD, 2013). Surface water is managed in accordance with Mount Gibson Mining's Surface Water Drainage Management Plan (GHD, 2013). The proposed clearing is not likely to cause deterioration to the quality of surface water.

Groundwater in the Tallering Peak area is predominantly brackish, with salinities in the range of 1,000 to 2,000 mg/L (GHD, 2009 as quoted in GHD, 2013). The groundwater table is generally at a depth of more than 30 metres (GHD, 2013). Given the depth and salinity of the groundwater, the proposed clearing is unlikely to have an impact on the quality of groundwater.

The application area is not within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is Wicherina Catchment Area which is located approximately 80 kilometres south-west of the application area (GIS Database).

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

Methodology GHD (2013)
GIS Database:
- 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 Greenough River catchment area (GIS Database). Given the size of the area to be cleared (17.2 hectares) in relation to the size of the catchment area (1,256,387 hectares) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a 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 three Native Title Claims (WC96/93, WC04/10 and WC97/72) over the area under application (GIS Database). These claims have been registered with the National 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 several registered Aboriginal Sites of Significance in the vicinity of 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 6 May 2013 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received.

- Methodology** GIS Database:
- Aboriginal Sites of Significance
 - Native Title Claims - Registered with the NNTT

4. References

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- Payne, A.L., Van Vreeswyk, A.M.E., Pringle, H.J.R., Leighton, K.A. and Hennig, P. (1998) Technical Bulletin - An Inventory and Condition Survey of the Sandstone-Yalgoo-Paynes Find Area, Western Australia, No. 90. Department of Agriculture, Government of Western Australia, Perth, Western Australia.
- Western Australian Herbarium (2013) Florabase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/> Accessed 21 June 2013.

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

RIWI Act	Conservation Union
s.17	Rights in Water and Irrigation Act 1914, Western Australia
TEC	Section 17 of the Environment Protection Act 1986, Western Australia
	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.