Government of Western Australia
Department of Mines and Petroleum

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3823/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Minjar Gold Pty Ltd**

1.3. Property details

Property: Mining Lease M59/420
Mining Lease M59/458
Local Government Area: Shire of Yalgoo
Colloquial name: Monaco Mining Project

1.4. Application

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

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
Beard Vegetation Associations have been mapped at a 1:250,000 scale for the whole of Western Australia and are useful to look at vegetation extent in a regional context. One Beard Vegetation Association is located within the proposed clearing area (GIS Database): 1. Beard Vegetation Association 202 - Shrublands; Mulga & *Acacia quadrimarginea* scrub. Mattiske Consulting Pty Ltd (2009) undertook a flora and vegetation survey of the Monaco project area (including the proposed clearing area) in July 2009. The following seven vegetation communities were described from the proposed clearing area: **Woodlands** E1 - Low Open Woodland of *Eucalyptus horistes* over *Acacia ramulosa var. ramulosa* with *Melaleuca lateriflora subsp. acutifolia* with mixed shrubs over *Maireana georgei, Eremophila georgei, Olearia humilis, Ptilotus obovatus, Rhagodia drummondii* and mixed low shrubs on orange sandy loam on flats; C2 - Woodland of *Callitris columellaris* and *Allocasuarina acutivalvis subsp. prinsepi*ana over *Eremophila forrestii* with *Aluta aspera subsp. hesperia* and mixed low shrubs on deep orange sandy loams on flats; **Acacia Shrublands** A6 - Tall Open Scrub of *Acacia ramulosa var. ramulosa* with *Acacia burkittii, Acacia tetragonophylla* and *Grevillea obliquistigma subsp obliquistigma* over *Philotheca brucei subsp. brucei* and *Scaevola spinescens* over annuals on orange brown sandy loam with rock cover on flats; A7 - Tall Shrubland of *Acacia ramulosa var. ramulosa* with *Acacia sibina* over *Eremophila forrestii* with *Hibbertia stenophylla* and mixed shrubs over *Monachather paradoxus* and *Amphipogon caricinus var. caricinus* on orange sandy loam on flats;	Minjar Gold Pty Ltd have recently acquired the Minjar Gold Mine Project (located 50 kilometres south of Yalgoo) from Golden Stallion Resources Pty Ltd and are looking to re-establish open pit mining and gold processing in the area. One particular area (colloquially named Monaco) has been selected as one of the start-up mining locations. Minjar Gold Pty Ltd have applied to clear up to 30.69 hectares of native vegetation at the Monaco project area to expand an existing open cut pit and waste rock dump, and to establish an ore transfer station, access roads and associated infrastructure (Minjar Gold Pty Ltd, 2010). Native vegetation and topsoil removed during clearing operations will be stockpiled separately for use in future rehabilitation works (Minjar Gold Pty Ltd, 2010).	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).	The vegetation condition rating is derived from information provided by (Minjar Gold Pty Ltd, 2010), Mattiske Consulting Pty Ltd (2009) and analysis of aerial photography and satellite imagery.

A8 - Tall Shrubland of *Acacia ramulosa var. ramulosa* with *Allocasuarina acutivalvis subsp. prinsepiana, Grevillea obliquistigma subsp. obliquistigma, Acacia sibina* and *Acacia burkittii* over *Aluta aspera subsp. hesperia, Eremophila latrobei subsp. latrobei* and *Drummondita fulva* (P3) over *Monachather paradoxus, Cheilanthes adiantoides* and mixed low shrubs and annuals on orange brown sandy loam with rock cover on flats and slopes;

A10 - Open Shrubland of *Acacia burkittii* with *Acacia sibina* and *Grevillea obliquistigma subsp. obliquistigma* over *Aluta aspera subsp. hesperia* with *Eremophila forrestii* and *Baeckea benthamii* (ms) on orange sandy loam on flats;

Shrublands

S3 - Tall Shrubland of *Allocasuarina acutivalvis subsp. prinsepiana* over *Acacia sibina, Acacia ramulosa var. ramulosa, Melaleuca lateriflora subsp. acutifolia* and *Acacia assimilis subsp. assimilis* over *Eremophila forrestii, Prostanthera althoferi subsp. althoferi* on deep orange sandy loam on flats

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 bioregion, comprising approximately 76% of the total land area (CALM, 2002). However, mining also has an increasing interest in the bioregion (CALM, 2002).

Mattiske Consulting Pty Ltd (2009) recorded 32 families, 56 genera and 95 flora species within the Monaco project area, including one weed species, *?Monoculus monstrosus*, which could not be positively identified as it was a juvenile form. Species representation was greatest amongst the Mimosaceae (13 taxa), Myrtaceae (9 taxa) and Chenopodiaceae (6 taxa) families (all of which are typical of the Eremaean Botanical Province). Ten plant communities were recorded during the survey, seven of which occur in the proposed clearing area. None of the vegetation communities present are Threatened Ecological Communities (TEC's), Priority Ecological Communities (PEC's) or ecosystems at risk (GIS Database; CALM, 2002). Mattiske Consulting Pty Ltd (2009) noted that communities E1, E2, A6, A7, A8, A9, A10, S3 and S4 may be considered locally significant as they support Priority Flora.

In summary, the proposed clearing area consists mostly of Acacia shrublands on loamy flats on the de-stocked Badja Pastoral Lease. Previous mining disturbances are clearly evident upon examination of aerial photography. The floristic diversity of the proposed clearing area is not likely to be higher than other areas of native vegetation elsewhere in the bioregion.

From a faunal perspective, the greater Yalgoo bioregion is known to support a rich and diverse array of fauna, some of which are habitat specific. A desktop study revealed that the proposed clearing area may support up to 128 bird species, 36 mammal species (including 11 introduced species), 69 reptile species and 6 amphibian species (Mattiske Consulting Pty Ltd, 2009). Fauna habitats within the proposed clearing area are not unique and are likely to be represented elsewhere. In addition, previous mining and pastoral-related disturbances are likely to have diminished the habitat values of the area to some extent. On this basis, the proposed clearing area is unlikely to support a high level of faunal diversity.

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

Methodology

EPA (2004).
Mattiske Consulting Pty Ltd (2009).
GIS Database:
- 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

Mattiske Consulting Pty Ltd (2009) contracted Aquila Wildlife Fieldwork to undertake a Level 1 fauna survey of the Monaco project area in accordance with EPA Guidance Statement No. 56 and EPA Position Statement No. 3. The survey found that the Monaco project area does not contain unique fauna habitats, and most habitats are likely to be represented elsewhere in the bioregion (Mattiske Consulting Pty Ltd, 2009). The assessing officer also notes that fauna habitat values within the proposed clearing area have been compromised to some

extent by previous mining-related disturbances. This is clearly evident upon examination of aerial and site photography.

Of significance, the Malleefowl (*Leipoa ocellata*) listed as 'Vulnerable' under the *Environment Protection and Biodiversity Conservation* (EPBC) *Act 1999* and Schedule 1 'Fauna that is rare or is likely to become extinct', *Wildlife Conservation (Specially Protected Fauna) Notice 2008* is known from the local area.

One active Malleefowl mound was located approximately 175 metres north-west of the proposed clearing footprint area at its nearest point (Mattiske Consulting Pty Ltd, 2009). Much of the Monaco project area provides suitable habitat for the Malleefowl (Mattiske Consulting Pty Ltd, 2009). Impacts to Malleefowl can be reduced by implementing a strict no disturbance buffer around active nests. In addition, vegetation clearing should take place outside of the nesting season (August to April) (Mattiske Consulting Pty Ltd, 2009).

Minjar Gold Pty Ltd will not undertake any native vegetation clearing within 175 metres of the known active nest, however there are plans to undertake clearing activities during the nesting season (Minjar Gold Pty Ltd, 2010). It is therefore recommended that detailed searches of the proposed clearing area be undertaken for Malleefowl nests prior to vegetation clearing. If found, Ministerial approval is required to disturb Malleefowl and their nesting mounds (Mattiske Consulting Pty Ltd, 2009).

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

Methodology Minjar Gold Pty Ltd (2010).
Mattiske Consulting Pty Ltd (2009).

(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

Mattiske Consulting Pty Ltd (2009) undertook a flora and vegetation survey of the Monaco project area (including the proposed clearing area) between 6 and 10 July 2009. The survey timing was consistent with the Environmental Protection Authority (EPA) recommendations that flora and vegetation surveys in the Eremaean Botanical Province be conducted following seasonal winter rains (EPA, 2004). More than 100 millimetres of rainfall was recorded at Yalgoo in the months preceding the survey (Golden Stallion Resources Pty Ltd, 2009).

A desktop assessment revealed that there are 11 species of Declared Rare Flora (DRF) known to occur in the Yalgoo bioregion. However, Mattiske Consulting Pty Ltd (2009) did not record any DRF during the July 2009 field survey.

Based on Rare and Priority Flora database searches, 19 Priority Flora species may occur within the Yalgoo bioregion. Mattiske Consulting Pty Ltd (2009) recorded three of these Priority Flora species in the Monaco project area during its July 2009 survey:

1. *Drummondita fulva (*P3)
2. *Grevillea globosa* (P3)
3. *Micromyrtus trudgenii* (P3)

Drummondita fulva was recorded from 22 separate locations in the Monaco project area from vegetation communities E1, A6, A8, A9, S3 and S4. However, only three of these 22 locations are within the footprint area for this clearing permit application (Mattiske Consulting Pty Ltd, 2009). Two small populations of an estimated 2-5 plants and one small population of 6-10 plants will be removed should a clearing permit be granted. Mattiske Consulting Pty Ltd (2009) recorded several hundred *Drummondita fulva* individuals outside of the proposed clearing area, including estimated population sizes of 51-100, 26-50 and numerous populations of 11-25 individuals. *Drummondita fulva* is known from 12 records at the Western Australian Herbarium (Mattiske Consulting Pty Ltd, 2009). On this basis, it is unlikely that the proposed clearing will significantly impact this species locally or regionally.

Grevillea globosa was recorded from six separate locations in the Monaco project area from vegetation communities E1, E2, A7 and A10. However, none of these six locations occur within the footprint area for this clearing permit application (Mattiske Consulting Pty Ltd, 2009). It is therefore unlikely that the proposed clearing will significantly impact this species locally or regionally.

Micromyrtus trudgenii was recorded from six separate locations in the Monaco project area from vegetation communities A6, A8 and A9. However, only one of these six locations was within the footprint area for this clearing permit application (Mattiske Consulting Pty Ltd, 2009). A population of an estimated 11-25 individuals will be lost should a clearing permit be granted. Given that *Micromyrtus trudgenii* is known from 29 records at the Western Australian Herbarium and was recorded outside of the clearing footprint area, it is unlikely that the proposed clearing will significantly impact this species locally or regionally.

Chamelaucium sp. Yalgoo (P3) has previously been recorded from two locations in the Monaco project area by Woodman Environmental Consulting. Neither location is within the footprint area for this clearing permit application (Mattiske Consulting Pty Ltd, 2009).

None of the habitats within the proposed clearing area are restricted or unique (Mattiske Consulting Pty Ltd,

2009). It is therefore unlikely that the vegetation in the application area is necessary for the continued existence of DRF or Priority Flora.

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

Methodology EPA (2004).
Mattiske Consulting Pty Ltd (2009).

(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 Threatened Ecological Communities (TEC's) within the proposed clearing area (GIS Database).

A number of flora surveys have been undertaken in the Minjar Gold Project area since 2000, including Hart, Simpson and Associates Pty Ltd (2000), Woodman Environmental Consulting Pty Ltd (2003), Ecotec Pty Ltd (2006) and most recently, Mattiske Consulting Pty Ltd (2009). No TEC's have been recorded during any of these surveys.

Two Priority Ecological Communities (PEC's) are known from the Minjar area - 'Minjar/Gnows Nest vegetation complex (banded ironstone formation)' (Mattiske Consulting Pty Ltd, 2009), as well as 'Warriedar Hill/Pinyalling vegetation complexes (banded ironstone formation)' (GIS Database). Given that the proposed clearing area is located on flat plains and not a banded ironstone formation, it is unlikely that these PEC's would be impacted (Mattiske Consulting Pty Ltd, 2009).

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

Methodology Ecotec Pty Ltd (2006).
Hart, Simpson and Associates Pty Ltd (2000).
Mattiske Consulting Pty Ltd (2009).
Woodman Environmental Consulting Pty Ltd (2003).
GIS Database:
- Threatened Ecological Sites Buffered.
- Threatened Ecological Sites Buffered _1 (CT Desc).

(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 area applied to clear is within the Interim Biogeographic Regionalisation of Australia (IBRA) Yalgoo bioregion (GIS Database). According to Shepherd (2007) there is approximately 98.9% of the pre-European vegetation remaining in the Yalgoo bioregion (see table below). The vegetation of the proposed clearing area is classified as Beard Vegetation Association 202: Shrublands; Mulga & *Acacia quadrimarginea* scrub (GIS Database). There is approximately 100% of the pre-European vegetation remaining of Beard Vegetation Association 202 in the Yalgoo bioregion (Shepherd, 2007).

The area proposed to clear does not represent a significant remnant of native vegetation in the wider regional area. The proposed clearing will not reduce the extent of Beard Vegetation Association 202 below the current recognised threshold level of 30% of the pre-clearing extent of the vegetation type (below which species loss accelerates exponentially at an ecosystem level) (EPA, 2000).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Yalgoo	5,057,316	5,001,943	~98.9	Least concern	9.85
Beard vegetation associations - State					
202	448,529	448,529	~100	Least concern	0.4
Beard vegetation associations - Bioregion					
202	45,096	45,096	~100	Least concern	No data available

* Shepherd (2007)
** 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).
EPA (2000).
Shepherd (2007).
GIS Databases:
- IBRA Australia.
- 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

One minor ephemeral drainage line runs through the north-eastern corner of the proposed clearing area (GIS Database). Minjar Gold Pty Ltd (2009) is proposing to clear this area for the purpose of access roads and other general mine infrastructure.

Given that this clearing proposal involves clearing of vegetation growing in, or in association with, an environment associated with a watercourse or wetland, the proposed clearing is at variance to this Principle.

Mattiske Consulting Pty Ltd (2009) has mapped the vegetation of this drainage line as communities C2 and S3. Neither vegetation community is noted as being riparian in nature (Mattiske Consulting Pty Ltd, 2009). Community S3 may be considered locally significant due only to the presence of Priority Flora (Mattiske Consulting Pty Ltd, 2009).

The drainage line in the proposed clearing area is not a conservation category wetland (GIS Database). Analysis of aerial photography indicates that minor ephemeral drainage lines are a common feature both locally (within a 50 kilometre radius) and regionally (within the Yalgoo bioregion) (GIS Database).

Methodology Minjar Gold Pty Ltd (2010).
Mattiske Consulting Pty Ltd (2009).
GIS Database:
- ANCA, wetlands.
- Badja 1.4M Orthomosaic.
- 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

Land system mapping by the Department of Agriculture Western Australia has mapped a variety of land systems for the Yalgoo bioregion. Land systems are mapped based on biophysical features such as soil and landform type, geology, geomorphology and vegetation type (Payne, et. al., 1998). The proposed clearing area includes two land systems (GIS Database). A broad description is given below:

Illaara Land System - This land system is characterised by gravelly plains supporting Mulga-Casuarina shrublands. The Illaara Land System is generally not susceptible to erosion (Payne et. al., 1998).

Watson Land System - This land system is characterised by hills, rises and gravelly plains on sedimentary rocks supporting bowgada shrublands with non-halophytic undershrubs. Stone and gravel surface mantles provide effective protection against erosion, however, disturbance or removal of these mantles may initiate erosion (Payne et. al., 1998). Given that less than one percent of the application area lies within the Watson Land System, the erosion risk associated with this clearing proposal is negligible.

Topsoil and vegetative material removed during clearing operations will be stockpiled for later use in rehabilitation (Minjar Gold Pty Ltd, 2010). This procedure is standard in the Western Australian mining industry and will minimise the risk of appreciable land degradation.

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

Methodology Minjar Gold Pty Ltd (2010).
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 area is not located within a conservation reserve (GIS Database).

Several pastoral leases (Warriedar, Lochada, Thundelarra and Karara) located proximate to the Badja pastoral lease on which clearing is proposed have been purchased by the Department of Environment and Conservation (DEC) and may potentially be added to Western Australia's conservation estate in the future (Minjar Gold Pty Ltd, 2010). At its nearest point, the proposed clearing area is approximately 1 kilometre west of Warriedar Station (GIS Database).

The proposed clearing area cannot be considered as a linkage to, or a buffer for the DEC purchased pastoral stations. It is therefore unlikely that the proposed clearing will impact upon the conservation values of these areas.

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

Methodology

Minjar Gold Pty Ltd (2010).
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
One minor ephemeral drainage line runs through the north-eastern corner of the proposed clearing area (GIS Database). Minjar Gold Pty Ltd (2010) is proposing to clear this area for the purpose of access roads and other general mine infrastructure. The transport of sediment in surface water flow over cleared areas will be controlled by the use of channels to divert surface water into silt traps before dispersing into the surrounding shrubland (Minjar Gold Pty Ltd, 2010).

The proposed clearing is not located within a Public Drinking Water Source Area (GIS Database). The proposed native vegetation clearing is unlikely to significantly affect groundwater levels or quality.

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

Methodology

Minjar Gold Pty Ltd (2010).
GIS Database:
- Hydrography, linear.
- Public Drinking Water Source Areas.

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

Comments

Proposal is not likely to be at variance to this Principle
One minor ephemeral drainage line runs through the north-eastern corner of the proposed clearing area (GIS Database). Minjar Gold Pty Ltd (2010) is proposing to clear this area for the purpose of access roads and other general mine infrastructure. Native vegetation clearing is likely to increase surface water run-off, however there is not likely to be an increase in the incidence or intensity of natural flood events in the local or regional area.

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

Methodology

Minjar Gold Pty Ltd (2010).
GIS Database:
- Hydrography, linear.

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

Comments

There are no Native Title Claims over the area under application (GIS Database).

According to available GIS databases, there are no known registered Aboriginal Sites of Significance within the proposed clearing area. 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.

No submissions were received from direct interest parties or members of the public when the clearing permit

application was advertised for comment.

On 26 November 2009, Clearing Permit CPS 3354/1 was issued by the Department of Mines and Petroleum to Golden Stallion Resources. Minjar Gold Pty Ltd (2010) advise that in June 2010, Minjar Gold Pty Ltd acquired the Minjar Gold Project from Golden Stallion Resources. Clearing Permit CPS 3354/1 expired on 30 June 2010 and Minjar Gold Pty Ltd (2010) state that no clearing was previously conducted in accordance with CPS 3354/1. The application area subject to this proposal is the same as that assessed and approved in accordance with CPS 3354/1.

Methodology

Minjar Gold Pty Ltd (2010).
GIS Database:
- Aboriginal Sites of Significance.
- Native Title Claims.

4. Assessor's comments

Comment

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s.51O of the *Environmental Protection Act 1986*, and the proposed clearing is at variance to Principle (f), may be at variance to Principle (b) and is not likely to be at variance to Principles (a), (c), (d), (g), (h), (i) and (j) and is not at variance to Principle (e).

5. References

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

Ecotec Pty Ltd (2006) Desktop Survey of Priority Flora and Fauna: Minjar Project. Prepared for Monarch Gold Mining Company Limited. August 2006.

EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority, Western Australia.

EPA (2004) Guidance for the Assessment of Environmental Factors - Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia. Guidance Statement No 51. Environmental Protection Authority, Western Australia.

Hart, Simpson and Associates Pty Ltd (2000) Gindalbie Gold NL: Minjar North Project. Ecological Survey. September 2000.

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 Consulting Pty Ltd (2009) Flora and Vegetation Survey of the Monaco Project Area within tenements M59/420 and M59/458, Minjar Project Area. Prepared for Golden Stallion Resources Pty Ltd. September 2009.

Minjar Gold Pty Ltd (2010) Monaco Project - Application for a Purpose Clearing Permit. June 2010.

Payne, A.L., Van Vreeswyk, A.M.E., Pringle, H.J.R., Leighton, K.A, Hennig, P (1998) Technical Bulletin No. 90: An inventory and condition survey of the Sandstone-Yalgoo-Paynes Find area, Western Australia. Department of Agriculture, Western Australia, South Perth.

Shepherd, D.P. (2007) 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.

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.

Woodman Environmental Consulting Pty Ltd (2003) Gindalbie Gold NL: Further investigations into Priority Flora populations. Minjar Project. November 2003.

6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAFWA	Department of Agriculture and Food, Western Australia.
DA	Department of Agriculture, Western Australia.
DEC	Department of Environment and Conservation
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DoE), 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, Western Australia.
DoIR	Department of Industry and Resources, Western Australia.
DOLA	Department of Land Administration, Western Australia.
DoW	Department of Water
EP Act	Environment Protection Act 1986, Western Australia.
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System.
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	Rights in Water and Irrigation Act 1914, Western Australia.
s.17	Section 17 of the Environment Protection Act 1986, Western Australia.
TECs	Threatened Ecological Communities.

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.