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

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6635/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Bullseye Mining Limited**

1.3. Property details

Property: Mining Leases: 37/108, 37/519, 37/1167
Miscellaneous Licences: 37/144, 37/145
Local Government Area: Shire of Leonora
Colloquial name: Laverton Gold Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
362.2		Mechanical Removal	Mineral Production and associated activities

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 13 August 2015

2. Background

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

The clearing permit application area has been broadly mapped as the following Beard vegetation associations (GIS Database):
18: Low woodland; mulga (*Acacia aneura*);
39: Shrublands; mulga scrub;
107: Hummock grasslands, shrub steppe; mulga and *Eucalyptus kingsmillii* over hard spinifex;
125: Bare areas; salt lakes; and
676: Succulent steppe; samphire.

A flora and vegetation survey was conducted by Botanica Consulting (Botanica) in October 2014 over the broader Laverton Gold Project tenement areas covering a total area of approximately 8,324 hectares, which included the current clearing permit application area (Botanica, 2015).

The following vegetation communities were recorded within the broader survey area, grouped according to landform types (Botanica, 2015):

Clay-Loam Plain
CLP-AFW1: Low woodland of *Acacia caesaneura / A. incurvaneura / A. mulganeura* over low scrub of *Eremophila* spp. and low grass of *Eragrostis eriopoda* on clay-loam plain.
CLP-AFW2: Dense low forest of *Acacia caesaneura / A. incurvaneura* over open low scrub of *Eremophila latrobei* subsp. *latrobei / Psydrax* spp. and low grass of *Eragrostis eriopoda* on clay-loam plain.
CLP-AFW3: Low woodland of *Acacia incurvaneura / A. pruinocarpa* over open low scrub of *Eremophila spectabilis* subsp. *brevis / Ptilotus obovatus / Sida calyxhymenia* and low grass of *Eragrostis eriopoda* on clay-loam plain.
CLP-OS1: Open scrub of *Hakea preissii* over low scrub of *Maireana pyramidata / Senna* sp. Meekatharra (E. Bailey 1-26) and dwarf scrub of *Maireana glomerifolia* on clayloam plain.

Sand-Loam Plain
SLP-MWS1: Very open shrub mallee of *Eucalyptus youngiana* over low scrub of *Acacia effusifolia / A. ligulata* and mid-dense hummock grass of *Triodia basedowii* on sand-loam plain.
SLP-MWS2: Open shrub mallee of *Eucalyptus lucasii / E. youngiana* over low scrub of *Eremophila forrestii* subsp. *forrestii/ Senna artemisioides* subsp. *filifolia* and mid dense hummock grass of *Triodia basedowii* on sand-loam plain.
SLP-OFW1: Open low woodland of *Hakea lorea* over open low scrub of regrowth *Melaleuca* spp. and dense hummock grass of *Triodia desertorum* on sand-loam plain.
SLP-AOW1: Open low woodland of *Acacia caesaneura* over scrub of *A. burkittii / Senna artemisioides* subsp. *filifolia* and mid-dense hummock grass of *Triodia desertorum* on sand-loam plain.
SLP-AFW1: Low forest of *Acacia caesaneura/ A. incurvaneura* over scrub of *Acacia ramulosa* var. *ramulosa* and dwarf scrub of *Ptilotus obovatus* over mid-dense hummock grass of *Triodia desertorum* on sand-loam plain.

Open Depression
OD-AFW1: Low woodland/ forest of *Acacia caesaneura / A. incurvaneura* over open mixed low scrub of *Acacia/*

Eremophila/ Sida spp. and low grass of *Eragrostis eriopoda / Eriachne* spp. in drainage depression.

Closed Depression
CD-AFW1: Low woodland of *Acacia caesaneura* over mixed low scrub of *Eremophila/Senna* spp. and dwarf scrub of *Frankenia setosa* on salt playa edge.
CD-AOW1: Open low woodland of *Acacia caesaneura* over dwarf scrub of *Atriplex vesicaria / Cratystylis subspinescens / Frankenia setosa* and dense hummock grass of *Triodia desertorum* in salt playa.
CD-CSSSF1: Low heath of *Tecticornia pruinosa / Tecticornia undulata* in salt playa.

Rocky Hillslope
RH-AFW1: Low woodland of *Acacia ayersiana / A. incurvaneura / A. mulganeura* over open mixed low scrub of *Thryptomene* spp./ *Eremophila* spp. and dwarf scrub of *Ptilotus obovatus / Sida* sp. Golden calyces glabrous (H.N. Foote 32) on rocky ridge.
RH-AFW2: Low woodland of *Acacia incurvaneura* over low scrub of *Thryptomene decussata* and low grass of *Eriachne mucronata* on rocky ridge.
RH-AFW3: Low woodland of *Acacia incurvaneura* over low scrub of *Dodonaea petiolaris* and dwarf scrub of *Ptilotus obovatus/ Sida calyxhymenia* on rocky ridge.
RH-AOW1: Open low woodland of *Acacia ayersiana / A. quadrimarginea* over scrub of *A. burkittii / Hakea kippistiana* over low scrub of *Senna* spp. and low scrub of *Ptilotus obovatus* on rocky hillslope.
RH-AOW2: Open low woodland of *Acacia incurvaneura / A. mulganeura / A. pruinocarpa* over low scrub of *Acacia* / *Eremophila* spp. and mixed dwarf scrub on rocky hillslope / rocky plain.

Breakaway
B-AOW1: Open low woodland of *Acacia incurvaneura / A. pruinocarpa / Callitris columellaris* over low scrub of *Dodonaea petiolaris / Thryptomene decussata* and dwarf scrub of *Ptilotus obovatus /* low grass of *Eragrostis eriopoda* on breakaway.

Rocky Plain
RP-AFW1: Low woodland of *Acacia incurvaneura / Hakea preissii* over open low scrub of *Senna* spp. and low scrub of *Ptilotus obovatus /* mixed Chenopods on rocky plain.
RP-AFW2: Low woodland of *Acacia incurvaneura / A. pruinocarpa* over low scrub of *Eremophila* spp. and dwarf scrub of *Ptilotus obovatus / Sida calyxhymenia* on quartz plain.

Clearing Description

Laverton Gold Project.
Bullseye Mining Limited proposes to clear up to 362.2 hectares of native vegetation within a boundary of approximately 362.2 hectares, for the purposes of mineral production and mining-related infrastructure. The project is located approximately 80-100 kilometres northeast of Laverton, within the Shire of Leonora.

Vegetation Condition

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

To

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

Comment

The vegetation condition was derived from a vegetation survey conducted by Botanica Consulting (Botanica) in October 2014 (Botanica, 2015).

The proposed clearing is for the development of the Laverton Gold Project minesite and a connecting haulroad, approximately 26 km long which extends to the west from the minesite area (Botanica, 2015).

3. Assessment of application against Clearing Principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments

Proposal is not likely to be at variance to this Principle

The application area is located within the Eastern Murchison subregion of the Murchison Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). The Eastern Murchison subregion is characterised by broad plains of red-brown soils and breakaway complexes as well as red sandplains. The vegetation of this subregion is dominated by Mulga Woodlands often rich in ephemerals; hummock grasslands, saltbush shrublands and Halosarcia shrublands (CALM, 2002). The Eastern Murchison subregion supports a rich and diverse flora and fauna, however most species are wide ranging and not restricted to the subregion (CALM, 2002).

Flora and vegetation surveys were conducted by Botanica Consulting (Botanica) over the greater Laverton Gold Project area, which included the current application area, during 2014 (Botanica, 2015). A total of 148 flora taxa were recorded during the survey, representing 26 families and 56 Genera (Botanica, 2015).

No Threatened flora, Threatened Ecological Communities or Priority Ecological Communities have been recorded within or in close proximity to the application area, and none were found during the survey (GIS Database; Botanica, 2015).

A desktop survey identified eighteen Priority flora species with the potential to occur within the survey area, based on known distributions and habitat preferences (Botanica, 2015). Two of these species, *Grevillea inconspicua* (Priority 4) and *Eremophila pungens* (Priority 4) were recorded during the flora survey, however they were located outside of the current clearing permit application area (Botanica, 2015). Each species was recorded from only one vegetation community within the survey area (RH-AOW1 and B-AOW1, respectively), however these two species both have a broad distribution across the Murchison bioregion (Western Australian Herbarium, 2015).

The vegetation condition within the application area ranged from Good to Very Good with parts of the survey area previously disturbed by access tracks and mineral exploration activities (Botanica, 2015).

The application area falls within the Melrose pastoral lease (GIS Database), and previous vegetation disturbance has occurred from pastoral activities, including weed invasion in some areas (Botanica, 2015). Two weed species were recorded during the flora surveys *Citrullus lanatus* (Pie Melon) and *Cucumis myriocarpus* (Prickly Paddy Melon), neither of which is a declared plant under the *Biosecurity and Agriculture Management Act 2007*. Weeds have the potential to out-compete native flora and reduce the biodiversity of an area. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A Level 1 fauna survey was conducted over the application area and adjacent areas by consulting zoologist Greg Harewood in October 2014, comprising of a desktop review and a five day reconnaissance field survey (Harewood, 2015). The desktop survey identified 218 native fauna species with the potential to occur within the survey area, including seven frogs, 86 reptiles, 110 birds and 15 mammal species. The field survey recorded a total of 80 native fauna species and six introduced fauna species (Harewood, 2015). Harewood (2015) reported that the fauna assemblage within the survey area was typical of the region.

The desktop survey identified 14 fauna species (mostly birds) of conservation significance, with the potential to occur within the survey area based on known distributions (Harewood, 2015). Of these, the following five species were considered most likely to occur within the survey area, based on habitat preferences: *Ardeotis australis,* Australian Bustard; *Falco peregrinus,* Peregrine Falcon; *Merops ornatus,* Rainbow Bee-eater; *Amytornis striatus striatus,* Striated Grasswren (sandplain); and *Dasycercus blythi,* Brush-tailed Mulgara (Harewood, 2015). However no fauna species of conservation significance were recorded during the survey (Harewood, 2015).

The Murchison Bioregion remains largely uncleared (Government of Western Australia, 2014), and the landforms, vegetation associations and fauna habitat types found within the application area are well represented within the region (Botanica, 2015; Harewood, 2015; GIS Database). The application area is unlikely to represent an area of higher biodiversity than surrounding areas, in either a local or regional context.

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

Methodology

CALM (2002)
Botanica (2015)
Government of Western Australia (2014)
Harewood (2015)
Western Australian Herbarium (2015)
GIS Database:
- IBRA WA (Regions - Sub Regions)
- Pre-European Vegetation
- Threatened and Priority Flora
- Threatened Ecological Sites Buffered

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments

Proposal is not likely to be at variance to this Principle

A Level 1 fauna and habitat survey was conducted over the application area and surrounding areas in October 2014 (Harewood, 2015). The survey comprised a desktop search of relevant fauna databases and a field reconnaissance survey.

Harewood (2015) identified the following seven main fauna habitat types within the broader survey area, (listed in order from most commonly occurring to least common):
1. Clay-Loam Plains: Low forests to open low woodlands of *Acacia* or *Hakea* over low scrub / dwarf scrub over low grass;
2. Rocky Hillslopes: Low woodlands of Acacia or Hakea over low scrub / open low scrub / dwarf scrub of mixed species;
3. Rocky Plains: Low woodlands of Acacia over low scrub / open low scrub over dwarf scrub or mixed chenopods;
4. Open Depressions: Low woodland / Forest of Acacia over open low scrub and low grass;
5. Sand-Loam Plains: Very open / open shrub mallee, low forest and open low woodland of Eucalyptus, Acacia or Hakea over dense hummock grassland or dwarf scrub;
6. Breakaways: Open low woodland of Acacia over low scrub and dwarf scrub of various species over low grass; and
7. Closed Depressions: Low woodland / open low woodland of Acacia over mixed low scrub or low dwarf scrub and low heath in salt playa.

None of these habitat types are restricted to either the clearing permit application area or the broader survey area (Harewood, 2015).

Opportunistic fauna observations, and a series of transects were conducted throughout the survey area, representing the seven main habitat types. Targeted searches for conservation significant fauna were also conducted, by traversing areas of suitable habitat.

Although no fauna species listed as either threatened species under the federal *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or protected under the Western Australian *Wildlife Conservation Act 1950* (WC Act) were recorded during the survey, it was considered that some may occur within the survey area (Harewood, 2015). However, the majority of these species are highly mobile and all have wide distributions, and they are unlikely to be specifically dependant on the habitats within the application area (Harewood, 2015).

The majority of fauna habitats found within the application area are relatively common and widespread in the region (Harewood, 2015; GIS Database). Harewood (2015) concluded that potential impacts to fauna are generally likely to be minor, and although some restricted fauna habitats may be considered locally significant, the vegetation proposed to be cleared is unlikely to represent significant habitat for fauna in a regional context.

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

Methodology

Harewood (2015)
GIS Database:
- Wanggannoo Orthomosaic - Landgate 2011
- Pre-European Vegetation

(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

A flora survey of the application area did not record any species of Threatened flora (Botanica, 2015). The vegetation associations recorded within the application area are well represented in surrounding areas (GIS Database; Botanica, 2015), and the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of threatened (rare) flora.

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

Methodology

Botanica (2015)
GIS Database:
- Declared Rare and Priority Flora List
- Pre-European Vegetation

(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 (TECs) located within a 100 kilometre radius of the application area (GIS Database).

Surveys of the application area did not identify any TECs (Botanica, 2015).

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

Methodology

Botanica (2015)
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 area applied to be cleared is located within the Murchison IBRA bioregion (GIS Database). There is approximately 99% of pre-European vegetation remaining within the bioregion (Government of Western Australia, 2014).

The application area is broadly mapped as Beard vegetation associations: 18: Low woodland; mulga (*Acacia aneura*); 39: Shrublands; mulga scrub; 107: Hummock grasslands, shrub steppe; mulga and *Eucalyptus kingsmillii* over hard spinifex; 125: Bare areas; salt lakes; and 676: Succulent steppe; samphire (GIS Database). Approximately 99% of the pre-European extent of each of these vegetation associations remains uncleared at both the state and bioregional level (Government of Western Australia, 2014). Hence, the vegetation proposed to be cleared does not represent a significant remnant of vegetation in an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DPaW managed lands
IBRA Bioregion - Murchison	28,120,586	28,044,823	~ 99	Least Concern	7.7
Beard vegetation association - State					
18	19,892,304	19,843,727	~ 99	Least Concern	6.29
39	6,613,569	6,602,580	~ 99	Least Concern	12.10
107	2,815,387	2,813,995	~ 99	Least Concern	11.54
125	3,485,786	3,146,497	~ 99	Least Concern	8.99
676	2,063,413	1,963,861	~ 99	Least Concern	11.32
Beard vegetation association - Bioregion					
18	12,403,172	12,363,252	~ 99	Least Concern	4.96
39	1,148,400	1,138,064	~ 99	Least Concern	3.56
107	2,792,383	2,790,992	~ 99	Least Concern	11.6
125	711,483	710,255	~ 99	Least Concern	7.19
676	382,818	382,704	~ 99	Least Concern	2.31

* Government of Western Australia (2014)
** 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 (2014)
GIS Database:

- IBRA WA (Regions - Sub Regions)
- Pre-European Vegetation

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

Comments

Proposal is at variance to this Principle

There are no permanent watercourses or wetlands within or in close proximity to the application area (GIS Database).

Several minor seasonal watercourses and a saline drainage channel pass through the application area (GIS Database). Seasonal watercourses in the region are dry for most of the year, only flowing briefly following significant rainfall events (Botanica, 2015).

Based on the above, the proposed clearing is at variance to this Principle. Potential impacts to vegetation associated with these watercourses, and vegetation downstream from the application area, may be minimised by the implementation of a watercourse management condition.

Methodology

Botanica (2015)
GIS Database:
- Geodata, Lakes
- 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 falls within the Ararak, Brooking, Bullimore, Darlot, Jundee, Laverton, Ranchland, Violet, and Yanganoo land systems (GIS Database). These land systems have been mapped and described in technical bulletins produced by the former Department of Agriculture (now the Department of Agriculture and Food).

The Ararak land system consists of broad plains with mantles of ironstone gravel supporting mulga shrublands with wanderrie grasses (Pringle et. al., 1994). The Darlot Land system consists of salt lakes and fringing saline alluvial plains, with extensive, regularly arranged, sandy banks and numerous claypans and swamps, supporting halophytic shrublands and spinifex and wanderrie grasslands (Pringle et. al., 1994). The Ranchland land system is described as hardpan plains and prominent, broad drainage tracts, supporting dense mulga shrublands (Pringle et. al., 1994). The Yanganoo land system consists of hardpan plains and sandy tracts with groved mulga shrublands, hard spinifex and wanderrie grasses (Pringle et. al., 1994). These four land systems are not generally susceptible to erosion (Pringle et. al., 1994).

The Bullimore land system is described as extensive sandplains supporting spinifex hummock grasslands (Pringle et. al., 1994). This land system may be prone to wind erosion if vegetation cover is removed (Pringle et. al., 1994).

The Violet land system is described as undulating stony and gravelly plains and low rises, supporting mulga shrublands (Pringle et. al., 1994). While generally resistant to erosion, this land system may be moderately susceptible to water erosion if stony mantles are removed (Pringle et. al., 1994).

The Brooking land system includes linear rocky ridges supporting mulga shrublands, often with incised narrow drainage tracts, and with occasional minor halophytic communities. Minor soil erosion may occur if stony mantles are disturbed (Pringle et. al., 1994).

The Laverton land system is dominated by greenstone hills and ridges supporting acacia shrublands (Pringle et. al., 1994). Stony mantels protect most of this land system from erosion, with the exception of narrow drainage tracts which may be mildly susceptible to water erosion (Pringle et. al., 1994).

The Jundee land system consists of hardpan plains with ironstone gravel mantles, supporting mulga shrublands (Pringle et. al., 1994). Gravel mantles generally provide effective protection against soil erosion, however impedance to natural sheet flows can initiate soil erosion and cause water starvation to vegetation downslope (Pringle et. al., 1994).

Based on the above, the proposed clearing may be at variance to this Principle. Potential land degradation as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

Methodology

Pringle et. al. (1994)
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 nearest conservation area is the Wanjarri Nature Reserve (Class A), which is located approximately 37 kilometres east of the eastern end of the haulroad corridor, and approximately 62 kilometres east of the proposed minesite development (GIS Database). The proposed clearing is unlikely to have any impacts on the environmental values of this or any other conservation area.

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

Methodology

GIS Database:
- DPaW 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 Public Drinking Water Source Areas within or in close proximity to the application area (GIS Database). There are no permanent watercourses or wetlands within the application area (GIS Database). Several minor seasonal watercourses and a saline drainage channel pass through the application area (GIS Database). Drainage lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall (CALM, 2002). Management practices will be implemented to minimise the risk of erosion and potential impacts to surface water quality (CALM, 2002).

The proposed clearing is unlikely to result in increased sedimentation of any watercourse, or cause deterioration in the quality of surface or underground water.

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

Methodology

CALM (2002)
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

The climate of the region is semi-arid, with a low average rainfall of approximately 200 millimetres per year (CALM, 2002). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall (CALM, 2002).

There are no permanent water courses or waterbodies within the application area (GIS Database). Several minor seasonal water courses and a saline drainage channel pass through the application area (GIS Database). Temporary localised flooding may occur during heavy rainfall events. However, the proposed clearing is unlikely to increase the incidence or intensity of natural flooding events.

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

Methodology

CALM (2002)
GIS Database:
- Hydrography, linear

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

The clearing permit application was advertised on 6 July 2015 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to this application.

There are no native title claims over the area under application (DAA, 2015). 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 located within or in close proximity to the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

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

Methodology

DAA (2015)
GIS Database:
- Aboriginal Sites of Significance

4. References

Botanica (2015) Level 2 Flora and Vegetation Survey. Laverton Gold Project. Report prepared for Bullseye Mining Limited. Botanica Consulting, January 2015.

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

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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.

Government of Western Australia (2014) 2014 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of June 2014. WA Department of Parks and Wildlife, Perth.

Harewood, G. (2015) Fauna Assessment: Laverton Gold Project. Report prepared for Bullseye Mining Limited. May 2015.

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

Pringle, H.J.R., Van Vreeswyk, A.M.E., and Gilligan, S.A. (1994) An Inventory and Condition Survey of the north-eastern Goldfields, Western Australia. Department of Agriculture, Western Australia.

Western Australian Herbarium (2015) FloraBase - the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DPaW and DER)
DER	Department of Environment Regulation, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DRF	Declared Rare Flora
DotE	Department of the Environment, Australian Government
DoW	Department of Water, Western Australia
DPaW	Department of Parks and Wildlife, Western Australia
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DotE)
EPA	Environmental Protection Authority, Western Australia
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
PEC	Priority Ecological Community, Western Australia
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:

{DPaW (2013) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

T **Threatened species:**
Specially protected under the *Wildlife Conservation Act 1950,* listed under Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna or the Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).

Threatened Fauna and Flora are further recognised by the Department according to their level of threat using IUCN Red List criteria. For example Carnaby's Cockatoo *Calyptorynchus latirostris* is specially protected under the *Wildlife Conservation Act 1950* as a threatened species with a ranking of Endangered.

Rankings:
CR: Critically Endangered - considered to be facing an extremely high risk of extinction in the wild.
EN: Endangered - considered to be facing a very high risk of extinction in the wild.
VU: Vulnerable - considered to be facing a high risk of extinction in the wild.

X **Presumed Extinct species:**
Specially protected under the *Wildlife Conservation Act 1950,* listed under Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora (which may also be referred to as Declared Rare Flora).

IA **Migratory birds protected under an international agreement:**
Specially protected under the *Wildlife Conservation Act 1950,* listed under Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice.
Birds that are subject to an agreement between governments of Australia and Japan, China and The Republic of Korea relating to the protection of migratory birds and birds in danger of extinction.

S **Other specially protected fauna:**
Specially protected under the *Wildlife Conservation Act 1950,* listed under Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice.

P1 **Priority One - Poorly-known species:**
Species that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, rail reserves and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.

P2 **Priority Two - Poorly-known species:**
Species that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, unallocated Crown land, water reserves, etc. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.

P3 **Priority Three - Poorly-known species:**
Species that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.

P4 **Priority Four - Rare, Near Threatened and other species in need of monitoring:**
(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.
(b) Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

P5 **Priority Five - Conservation Dependent species:**
Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.