



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 7555/1

Permit type: Purpose

1.2. Proponent details

Proponent's name: Billabong Gold Pty Ltd

1.3. Property details

Property: Mining Lease M52/149
Mining Lease M52/150
Mining Lease M52/309
Mining Lease M52/685
Mining Lease M52/797
Miscellaneous Licence 52/116
Miscellaneous Licence 52/164
Miscellaneous Licence 52/165
Miscellaneous Licence 52/166

Local Government Area: Shire of Meekatharra

Colloquial name: Hermes Gold Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 8 June 2017

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description Beard vegetation associations have been mapped for the whole of Western Australia. The clearing permit application area has been broadly mapped as the following Beard vegetation associations (GIS Database):

18: Low woodland; mulga (*Acacia aneura*); and
29: Sparse low woodland; mulga, discontinuous in scattered groups.

A flora and vegetation survey was undertaken over part of the application area by MMWC (2016) during 30 November to 3 December 2015. A total of 4 vegetation communities were identified within M 52/685:

Stony Plain

PL1 - High open shrubland of *Acacia pteraneura* and *Acacia pruinocarpa* over scattered shrubs of *Eremophila longifolia*, *Eremophila forrestii* subsp. *forrestii* and *Eremophila maculata* subsp. *brevifolia* (Majority of the survey area).

Clay Flat

PL2 - Low woodland of *Acacia aptaneura* and *Acacia pteraneura* over shrubland of *Eremophila forrestii* subsp. *forrestii* and *Eremophila spectabilis* subsp. *spectabilis* over low open shrubland of *Ptilotus obovatus* over scattered herbs of *Cheilanthes sieberi* subsp. *sieberi* and **Bidens bipinnata* (2% of survey area).

Creepline

CR1 - Woodland of *Acacia cyperophylla* var. *cyperophylla* and *Corymbia candida* subsp. *dipsodes* over high open shrubland of *Acacia craspedocarpa*, *Acacia kempeana* and *Acacia sclerosperma* subsp. *sclerosperma* over low open shrubland of *Eremophila forrestii* subsp. *forrestii* and *Ptilotus obovatus* over open grassland of *Themeda triandra*, *Tripogon loliiformis* and *Monachather paradoxus* (4% of survey area); and

CR2 - Low woodland of *Acacia pteraneura* and *Acacia citrinoviridis* over high open shrubland of *Acacia tetragonophylla* over low open shrubland of *Eremophila forrestii* subsp. *forrestii* and *Keraudrenia velutina* subsp. *elliptica* over very open grassland of *Themeda triandra* and *Tripogon loliiformis* (1% of survey area).

A flora and vegetation survey was undertaken over the haul road by Mattiske (2016b) from 18 to 21 January 2016. A total of ten vegetation communities were identified:

Scrub/Thickets/Shrublands

S1 - Scrub to thicket of *Acacia aneura* complex with occasional *Acacia pruinocarpa* and *Grevillea ?berryana*

over *Senna ?glaucofolia*, *Ptilotus obovatus* var. *obovatus* and *Solanum lasiophyllum* on red-brown-orange sandy clay flats and undulating plains with quartz and ironstone pebbles;

S2 - Open scrub of *Acacia aneura* complex over *Eremophila ?jucunda*, *Eremophila galeata*, *Senna artemisioides* subsp. *helmsii* and *Senna ?glaucofolia* on red to orange sandy clay flats;

S3 - Open scrub to scrub of *Acacia aneura* complex and *Acacia tetragonophylla* over *Eremophila galeata*, *Senna artemisioides* subsp. *helmsii*, *Ptilotus obovatus* var. *obovatus* and *Senna ?glaucofolia* over *Eriachne ?benthamii* on red to orange sandy clay and clay flats and washout areas;

S4 - Open low shrubland of *Eremophila galeata*, *Solanum lasiophyllum* and *Senna ?glaucofolia* with occasional emergent *Acacia aneura* complex over Poaceae sp. and *Sclerolaena eurotioides* on red-brown-orange sandy clay flats with quartz and ironstone pebbles;

S5 - Open scrub of *Acacia sclerosperma* subsp. *sclerosperma* and *Acacia aneura* complex over *Solanum lasiophyllum* and *Senna ?sp.* Meekatharra (E. Bailey 1-26) over Poaceae sp. and *Sclerolaena cuneata* on red to orange sandy clay flats;

S6 - Scrub of *Acacia aneura* complex, *Acacia tetragonophylla* and *Psydrax latifolia* over *Eremophila forrestii*, *Senna artemisioides* subsp. *helmsii* and *Eremophila latrobei* subsp. *latrobei* over *Cheilanthes sieberi* subsp. *sieberi* on red-orange sandy clay soils along drainage lines;

S7 - Open scrub of *Acacia pyrifolia* var. *pyrifolia* and *Codonocarpus cotinifolius* over *Solanum lasiophyllum*, *Eremophea spinosa* and *?Enneapogon* sp. on red-orange clay flats;

S8 - Thicket of *Melaleuca glomerata* over *Enteropogon ramosus*, *Pterocaulon sphacelatum* and *Pluchea rubelliflora* on red sandy clay in washout creeks; and

S9 - Open scrub of *Acacia cuspidifolia*, *Acacia aneura* complex and *Acacia tetragonophylla* over *Eremophila ?phyllopoda*, *Enchylaena tomentosa* var. *tomentosa*, *Rhagodia eremaea* and *Tecticornia ?disarticulata* over *Sclerolaena cuneata* on red-brown sandy clay soils with quartz and ironstone pebbles on low rises.

Woodlands

W1 - Low woodland of *Acacia cyperophylla* var. *cyperophylla* and *Corymbia candida* subsp. *dipsodes* over *Acacia tetragonophylla* over *Cheilanthes sieberi* subsp. *sieberi*, *Themeda triandra* and *Eriachne* sp. on red-orange-brown gravelly, clayey sand along larger drainage lines and creeks.

Clearing Description	Hermes Gold Project. Billabong Gold Pty Ltd proposes to clear up to 428.51 hectares of native vegetation within a total boundary of approximately 489.68 hectares, for the purpose of mineral production and associated activities. The project is located approximately 17.5 kilometres north-east of Peak Hill, in the Shire of Meekatharra.
Vegetation Condition	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994); to: Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).
Comment	The vegetation conditions were described using a scale based on Trudgen (1988) and has been converted to the corresponding conditions from the Keighery (1994) scale.

3. Assessment of application against clearing principles

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

Comments	<p>Proposal is not likely to be at variance to this Principle</p> <p>The application area occurs within the Augustus subregion of the Gascoyne Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by Mulga woodland with <i>Triodia</i> occurring on shallow stony loams on rises, while the shallow earthy loams over hardpan on the plains are covered by Mulga parkland (CALM, 2002).</p> <p>MMWC (2016) conducted a Level 1 flora and vegetation survey over Mining Lease 52/685 and identified four vegetation types with 76 flora taxa representing 21 families and 42 genera. Species composition and vegetation types within the application area are typical of the local region and not considered to be unusually diverse (MMWC, 2016). The area proposed to be cleared is not considered to be remnant vegetation and areas have been disturbed by historical exploration activities (GIS Database).</p> <p>A search of the Department of Parks and Wildlife's Threatened and Priority Flora databases revealed no records of Threatened Flora or Priority Flora species within a 5 kilometre radius of the application area (GIS Database). Based on habitat type within the application area, it is unlikely that any Threatened flora species would occur within the application area (GIS Database). No Threatened or Priority Flora species, Threatened or Priority Ecological Communities were identified within the application area (Mattiske, 2016b; MMWC, 2016).</p> <p>There were two weed species identified by MMWC (2016). Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to the biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management</p>
----------	---

condition.

The faunal habitat types recorded within the application area are considered to be common and widespread within the subregion and faunal assemblages are unlikely to be different to those found in similar habitat located elsewhere in the region (Mattiske, 2016a; MMWC, 2016; GIS Database).

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

Methodology CALM (2002)
Mattiske (2016a)
Mattiske (2016b)
MMWC (2016)

GIS Database:
- Threatened Fauna
- Threatened and Priority Flora
- TEC/PEC – Buffer
- TEC/PEC – Boundaries

(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 survey was conducted over Mining Lease 52/685 within the application area on from 30 November to 3 December 2015 by MMWC (2016) which mapped four broad habitats within the application area:

- 1 - Stony Hill;
- 2 - Riverine;
- 3 - Stony Plain; and
- 4 - Major Drainage Line.

There was no fauna survey undertaken over the haul road, however an opportunistic assessment was made for faunal habitats and obvious fauna species during the flora and vegetation survey by Mattiske (2016b) over the haul road (Mattiske, 2016a). A vegetation survey by Mattiske (2016b) was undertaken over the haul road which defined 10 vegetation communities, consisting of seven Acacia scrub communities (predominantly *Acacia aneura* complex) associated with a range of *Ptilotus*, *Eremophila* and *Senna* species, one low shrubland community consisting of *Eremophila* and *Senna* species with occasional emergent *Acacia* species, one *Melaleuca glomerata* thicket community and one *Acacia cyperophylla* var. *cyperophylla* and *Corymbia candida* subsp. *dipsodes* woodland community. These vegetation communities were based on flats, drainage lines-creeks and some stony low rises (Mattiske, 2016a).

MMWC (2016) found that the Stony Plain and Riverine habitats were the most extensive over the application area. The application area does not contain habitats or faunal assemblages that are ecologically significant, and the fauna assemblage of the study area is considered common and typical of the region and is not specifically dependent on the habitats within the application area (Mattiske, 2016a; MMWC, 2016; GIS Database).

Riparian vegetation within the Riverine habitat may provide important habitat for fauna, as the vegetation can provide faunal habitat of a moderate range of microhabitats with logs, leaf litter and tree hollows (GIS Database). Provided disturbance to riparian habitats is avoided or minimised where possible, and strict weed hygiene procedures are followed, the proposed works are not expected to substantially impact this vegetation association. Potential impacts to riparian vegetation may be minimised through the implementation of a vegetation management condition.

The level 1 fauna survey by MMWC (2016) recorded 48 fauna species, comprising of 31 avifauna species, nine reptiles and 8 mammals. There was one species of conservation significance identified; the Rainbow Bee-eater (*Merops ornatus*) (Migratory). Based on habitat type, it is also possible for the Peregrine Falcon (*Falco peregrinus*) (Other specially protected fauna) and the Grey Falcon (*Falco hypoleucos*) (Vulnerable) to occur, as foraging habitat is present (MMWC, 2016). These birds could potentially use the application area and adjoining areas for foraging, roosting and possibly breeding; however given the high mobility of these species, it is not likely that the proposed clearing will significantly impact the conservation significance of this species.

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

Methodology Mattiske (2016a)
Mattiske (2016b)
MMWC (2016)

GIS Database:
- Threatened Fauna

(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 search of the available databases showed that there are no known Threatened Ecological Communities (TEC's) situated within 200 kilometres of the application area (GIS Database).

Based on flora and vegetation surveys conducted by MMWC (2016) and Mattiske (2016b), no TEC's were recorded within the application area.

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

Methodology Mattiske (2016b)
MMWC (2016)

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 the available databases showed that there are no known Threatened Ecological Communities (TEC's) situated within 200 kilometres of the application area (GIS Database).

Based on flora and vegetation surveys conducted by MMWC (2016) and Mattiske (2016b), no TEC's were recorded within the application area.

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

Methodology Mattiske (2016b)
MMWC (2016)

GIS Database:
- TEC/PEC - Buffers
- TEC/PEC - Boundaries

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments **Proposal is not at variance to this Principle**
The application areas fall within the Gascoyne Interim Biogeographic Regionalisation of Australia bioregion (GIS Database). The vegetation within the application areas is recorded as:

18: Low woodland; mulga (*Acacia aneura*); and
29: Sparse low woodland; mulga, discontinuous in scattered groups.

The above Beard vegetation associations retain approximately 99% or above of their pre-European extent at both the state and bioregion level (Government of Western Australia, 2016). The areas proposed to be cleared are not a significant remnant of native vegetation.

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

Methodology Government of Western Australia (2016)

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**
According to the available databases, several ephemeral watercourses intersect the application area, particularly the haul road, one watercourse which has an annual flow (GIS Database). Based on vegetation mapping by MMWC (2016), there are two vegetation types identified to grow in association with a watercourse; CR1 and CR2. Vegetation type CR1 is associated with the watercourse with an annual flow, whereas the vegetation type CR2 is more associated with minor creek lines, representing more of a gully (MMWC, 2016).

As the majority of these watercourses are only likely to inundate following significant rainfall or cyclonic events, the proposed clearing is unlikely to result in any significant impact to any watercourse or wetland provided

natural surface water flow patterns are not disturbed. Potential impacts to riparian vegetation may be minimised through the implementation of a vegetation management condition.

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

Methodology MMWC (2016)

GIS Database:
- Hydrography, linear

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

Comments **Proposal may be at variance to this Principle**

According to the available datasets the application area intersects the Beasley, Durlacher, Flood, Horseshoe, Phillips, Three Rivers, and Warri land systems (GIS Database).

The Beasley land system consists of low ridges, hills and lateritised residuals above stony footslopes and broad, stony lower plains, which support scattered mulga and snakewood-dominated shrublands. This land system is mostly resistant to erosion, however minor erosion is possible on drainage tracts (Hennig et al., 1994).

The Durlacher land system consists of stony plains, lower tributary drainage plains and low stony rises, which support scattered tall shrublands of mulga and other Acacias. In some areas pasture degradation has led to serious erosion by sheeting and gullying (Payne et al., 1987).

The Flood land system consists of hardpan wash plains with long, interconnected wanderrie banks supporting mulga and wanderrie shrublands. This system is moderate susceptibility to erosion on drainage tracts (Hennig et al., 1994).

The Horseshoe land system consists of gently undulating stony plains and low rounded hills and is generally not susceptible to erosion (Hennig et al., 1994).

The Phillips land system consists of low hills and undulating uplands of crystalline rocks supporting mulga and other acacia-dominated tall shrublands. This land system is susceptible to erosion (Payne et al., 1987).

The Three Rivers land system consists of hardpan plains and minor sandy banks supporting sparse mulga shrublands. Any disturbances (such as roads and tracks) which alter sheet water flow processes on the plains of this system are likely to have adverse impacts on the vegetation. Much of the system is slightly to moderately susceptible to erosion (Payne et al., 1988).

The Warri land system consists of low calcrete platforms and plains supporting mulga and cassia shrublands. Units with duplex soils are moderately susceptible to erosion, those with loam over hardpan are less susceptible and calcrete tables are not normally susceptible though widely degraded (Payne et al., 1988).

The proposal to clear 428.51 hectares of native vegetation is considered to be a relatively large area and may lead to land degradation through soil erosion. Although typical surface runoff would be minimal given the climate, high rainfall events may cause short-term erosion through the transportation of sediments in surface flows. Potential impacts from land degradation as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

The application area has an annual average evaporation rate that highly exceeds the annual average rainfall (BoM, 2017). Based on this information, surface flows during normal rainfall events are likely to be short lived and recharge to groundwater would be considered minimal. This would reduce the likelihood of salinity increasing as a result of the proposed clearing.

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

Methodology BoM (2017)
Hennig et al (1994)
Payne et al (1987)
Payne et al (1988)

GIS Database:
-Groundwater Sallinity, Statewide
- Hydrography, linear

(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 at variance to this Principle**

The application area falls within the former leasehold ex-Doolgunna which is managed by the Department of

Parks and Wildlife (DPaW) (GIS Database). This former pastoral lease was purchased by the Department of Environment and Conservation (DEC) (now DPaW) and is managed by DPaW for conservation.

DPaW (2016) provided advice on a recent clearing proposal in the same location. DPaW (2016) advised that this former pastoral lease is a priority for reservation as the area contains significant and representative conservation values and are unrepresented or underrepresented in the conservation reserve system. It is recommended that any activities undertaken within this area are managed in a manner consistent with the current and intended future land use (DPaW, 2016).

The application area sits at the edge of the former leasehold, and the majority of the haul road is located outside the area. Although the proposed clearing of 428.55 hectares of native vegetation will have an impact on the former leasehold, it is unlikely to impact on significant values of the lease based on the results of the surveys (MMWC, 2016) and the leasehold is over 64,000 hectares in size (GIS Database). Following the cessation of mining and closure, the proposed activities are not expected to significantly impact on the former leasehold being managed for conservation purposes.

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

Methodology DPaW (2016)

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**

The application area is not located within a Public Drinking Water Source Area (GIS Database). The application area is located within the proclaimed East Murchison groundwater area under the *Rights in Water and Irrigation Act 1914* (GIS Database). Any groundwater extraction and/or taking or diversion of surface water for the purposes other than domestic and/or stock watering is subject to licence by the Department of Water.

The annual evaporation rate significantly exceeds the annual average rainfall for local area (BoM, 2017; GIS Database). Any surface water within the application area is likely to only remain for short periods following significant rainfall events. The proposed clearing is not likely to cause deterioration in the quality of any surface water within or outside of the application area.

The application area has a groundwater salinity that is marginal (500 to 1,000 milligrams/Litre Total Dissolved solids (TDS) (GIS Database). With high annual evaporation rates and low annual rainfall, there is little recharge into regional groundwater. The proposed clearing is unlikely to further deteriorate the quality of underground water (GIS Database).

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

Methodology BoM (2017)

GIS Database:
- Groundwater Salinity, Statewide
- 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 application area is located within the Gascoyne River catchment area (GIS Database). Given the size of the area to be cleared (428.51 hectares) in relation to the size of the catchment area (8,037,381 hectares) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a local or catchment scale.

With an average annual rainfall of 231.7 millimetres and an average annual evaporation rate of between 3,200 and 3,600 millimetres there is likely to be little surface flow during normal seasonal rains (BoM, 2017). Whilst large rainfall events may result in flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding.

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

Methodology BoM (2017)

GIS Database:
- Hydrography, linear

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

Comments There is one Native Title claim over the area under application (DAA, 2017). 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 four registered Aboriginal Sites of Significance within the application area (DAA, 2017). 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, Department of Parks and Wildlife and the Department of Water, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

The clearing permit application was advertised on 15 May 2017 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received.

Methodology DAA (2017)

4. References

- BoM (2017) Climate Statistics for Australian Locations. A Search for Climate Statistics for Three Rivers, Australian Government Bureau of Meteorology. http://reg.bom.gov.au/climate/averages/tables/cw_007080.shtml (Accessed 1 June 2017).
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management.
- DAA (2017) Aboriginal Heritage Inquiry System. Department of Aboriginal Affairs. <http://maps.dia.wa.gov.au/AHIS2/> (Accessed 2 June 2017).
- DPaW (2016) Advice received in relation to Clearing Permit Application CPS 7249/1. Environmental Management Branch, Department of Parks and Wildlife, Western Australia, October 2016.
- Government of Western Australia (2016) 2016 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Western Australian Department of Parks and Wildlife, Perth, Western Australia.
- Hennig, P, Curry, P J, Blood, D A, and Leighton, K A. (1994) An inventory and condition survey of the Murchison River catchment, Western Australia. Department of Agriculture and Food, Western Australia.
- 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 (2016a) Fauna Assessment of the Hermes Project Haul Road. Report prepared for Northern Star Resources Ltd, by Mattiske Consulting Pty Ltd, February 2016.
- Mattiske (2016b) Flora and Vegetation Assessment of the Hermes Project Haul Road. Report prepared for Northern Star Resources Ltd, by Mattiske Consulting Pty Ltd, February 2016.
- MMWC (2016) Hermes Mining Area Flora, Vegetation and Fauna Assessment. Report prepared for Northern Star Resources Ltd, by MMWC Environmental Pty Ltd, March 2016.
- Payne, A.L., Curry, P.J. and Spencer, G.F. (1987) An Inventory and Condition Survey of Rangelands in the Carnarvon Basin, Western Australia. Department of Agriculture, Western Australia.
- Payne, A. L., Mitchell A. A. and Holman, W.F. (1988) An inventory and condition survey of the rangelands in the Ashburton River Catchment, Western Australia. Department of Agriculture, Western Australia.

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
DotEE	Department of the Environment and Energy, 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 DotEE)
EPA	Environmental Protection Authority, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (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

PEC	World Conservation Union
RIWI Act	Priority Ecological Community, Western Australia
TEC	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia Threatened Ecological Community

Definitions:

{DPaW (2017) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

T	<p>Threatened species: Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).</p> <p>Threatened fauna is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the Wildlife Conservation Act.</p> <p>Threatened flora is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the Wildlife Conservation Act.</p> <p>The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.</p>
CR	<p>Critically endangered species Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.</p>
EN	<p>Endangered species Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.</p>
VU	<p>Vulnerable species Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.</p>
EX	<p>Presumed extinct species Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.</p>
IA	<p>Migratory birds protected under an international agreement Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.</p>
CD	<p>Conservation dependent fauna Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.</p>
OS	<p>Other specially protected fauna Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.</p>
P	<p>Priority species Species which are poorly known; or Species that are adequately known, are rare but not threatened, and require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.</p>
P1	<p>Priority One - Poorly-known species: Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or</p>

pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

P2 Priority Two - Poorly-known species:

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

P3 Priority Three - Poorly-known species:

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations 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 locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

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 are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Principles for clearing native vegetation:

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (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.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare 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.
- (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.
- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (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.
- (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.
- (j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

