



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 7407/1

Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Northern Star Resources Limited

### 1.3. Property details

Property: Mining Lease 16/309

Local Government Area: Shire of Coolgardie

Colloquial name: Kundana Operations Project

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 2 February 2017

## 2. Site Information

### 2.1. Existing environment and information

#### 2.1.1. Description of the native vegetation under application

**Vegetation Description** The application area has been mapped as the following three Beard vegetation associations (GIS Database):

- 125: Bare areas; salt lakes;
- 468: Medium woodland; salmon gum and goldfields blackbutt; and
- 540: Succulent steppe with open low woodland; sheok over saltbush.

A Level 1 Flora and Vegetation Survey of the application area was undertaken by Botanica Consulting (Botanica, 2016) during the period 23 and 28 November 2016. The vegetation survey identified the following 12 vegetation communities in the application area:

#### Clay-Loam Plain:

1. **CLP - CFW1** - Casuarina Forests and Woodlands - Low forest of *Casuarina pauper* over mixed low scrub and dwarf scrub of *Olearia muelleri* on clay-loam plain,
2. **CLP - EW1** - Eucalypt Woodlands - Low forest of *Eucalyptus lesouefii* over low scrub of *Eremophila* spp. and open dwarf scrub of *Olearia muelleri*/*Maireana georgei* on clay-loam plain,
3. **CLP-EW2** - Eucalypt Woodlands - Forest of *Eucalyptus lesouefii* over low scrub of *Eremophila ionantha*/*Senna artemisioides* subsp. *x artemisioides*/*Eremophila scoparia* and dwarf scrub of *Eremophila parvifolia* subsp. *auricampa*/*Olearia muelleri* on clay- loam plain,
4. **CLP - RMNV1** - Regrowth, Modified Native Vegetation - Regrowth open low scrub of *Acacia hemiteles*/*Cratystylis microcephala* over dwarf scrub of *Maireana triptera*/*Sclerolaena diacantha* on clay-loam plain,

#### Closed Depression:

5. **CD- CSSSF1** - Chenopod Shrublands, Samphire Shrublands and Forblands - Low scrub of *Dodonaea lobulata* over low heath of *Tecticornia indica* subsp. *bidens* on playa edge,

#### Rocky Hillslope:

6. **RH-AS1** - Acacia Shrublands - Thicket of *Acacia ramulosa* var. *ramulosa* over low scrub of *Melaleuca hamata* and dwarf scrub of *Ptilotus obovatus* on rocky hillslope,
7. **RH-MWS1** - Mallee Woodlands and Shrublands - Open tree mallee of *Eucalyptus clelandii*/*Eucalyptus griffithsii* over thicket of *Acacia acuminata* and open dwarf scrub of *Atriplex vesicaria*/*Maireana sedifolia* on greenstone hill,

#### Sand Dune:

8. **SD-EW1** - Eucalypt Woodlands - Low woodland of *Eucalyptus clelandii* over low scrub of *Halgania andromedifolia*/*Cratystylis microcephala* and open hummock grass of *Triodia scariosa* on sand dune,

#### Sand-Loam Plain:

9. **SLP-CFW1** - Casuarina Forests and Woodlands - Open low woodland of *Casuarina pauper* over low scrub of *Eremophila scoparia* and low heath of *Cratystylis microphylla* on sand - loam plain,
10. **SLP-EW1** - Eucalypt Woodlands - Low woodland of *Eucalyptus* spp. over low scrub of *Eremophila scoparia*/*Senna artemisioides* subsp. *filifolia* and open dwarf scrub of *Eremophila parvifolia* subsp. *auricampa*/*Olearia muelleri* on sand-loam plain,

11. **SLP- LCFTCS1** - Low Closed Forests and Tall Closed Shrublands - Heath of *Melaleuca lateriflora* subsp. *lateriflora* over dwarf scrub of *Rhagodia drummondii*/*Sclerolaena diacantha* on sand- loam plain,
12. **SLP- MWS1** - Mallee Woodlands and Shrublands - Open tree mallee of *Eucalyptus celastroides* over low scrub of *Exocarpos aphyllus* and open dwarf scrub of *Eremophila interstans*/*Eremophila scoparia* on sand-loam plain.

<b>Clearing Description</b>	Kundana Operations Project Northern Star Resources Limited proposes to clear up to 100 hectares of native vegetation within a boundary of approximately 938.97 hectares for the purposes of mineral production, mining related infrastructure including roads, power generation infrastructure and ancillary infrastructure. The project is located approximately 19.5 kilometres north-west of Kalgoorlie-Boulder in the Shire of Coolgardie.
<b>Vegetation Condition</b>	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994);  to  Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).
<b>Comment</b>	The application area has been previously disturbed by historical mining, vegetation clearing, road and access track development, logging, grazing and past fire events (Botanica, 2016; GIS Database).

### 3. Assessment of application against clearing principles

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

<b>Comments</b>	<p><b>Proposal is not likely to be at variance to this Principle</b></p> <p>The application area is located within the Eastern Goldfield sub-region of the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Eastern Goldfield subregion is characterised by subdued relief and consists of undulating plains, low hills and ridges of Archaean greenstones and basic granulite. Calcareous earths are the dominant soil group. The vegetation of the bioregion includes Mallees, Acacia thickets and shrub-heaths on sandplains (CALM, 2002).</p> <p>The flora and vegetation survey undertaken by Botanica (2016), identified no Threatened Ecological Communities (TEC's) and no Priority Ecological Communities (PEC's) occurring within the application area. The flora and vegetation survey identified twelve vegetation communities within the application area (Botanica, 2016).</p> <p>A total of 98 native species (and two introduced species) from 44 genera and 23 families were recorded during the flora survey (Botanica, 2016). No species of Threatened flora or Priority flora were recorded during the flora survey (Botanica, 2016).</p> <p>Surrounding and adjacent areas have been previously disturbed by mining operations. This includes open pits, roads, access tracks, waste rock dumps, laydown areas and areas of regrowth vegetation from past mining operations (Botanica, 2016). The vegetation of the application area ranges in condition from good to degraded condition (Botanica, 2016). Two introduced (weed) species were recorded during the flora survey. <i>Nicotiana glauca</i> (Tree Tobacco) and <i>Citrullus lanatus</i> (Pie Melon) were recorded in three vegetation communities within the application area (Botanica, 2016). Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.</p> <p>A desktop fauna survey identified 204 fauna species potentially occurring within the application area (Botanica, 2016). The fauna database search revealed records of five amphibian, 66 reptile, 103 bird and 30 mammal species potentially occurring within a 20 kilometre radius of the application area (Botanica, 2016). Botanica (2016) report a low probability of conservation significant species being present in the application area as the habitat is not suitable or large areas of suitable habitat are common and widespread in the region (Botanica, 2016). No fauna habitat in the application area is critical to the survival of conservation significant fauna species.</p> <p>Vegetation of the application area has been previously disturbed and the vegetation proposed to be cleared is well represented in the surrounding area (Government of Western Australia, 2015; GIS Database). It is unlikely the proposal will result in the clearing of native vegetation that has high biodiversity values. Surrounding, undisturbed vegetation is likely to contain areas of greater biodiversity value.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
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<b>Methodology</b>	Botanica (2016) CALM (2002) Government of Western Australia (2015)  GIS Database: - IBRA WA (Regions - Sub Regions) - Pre-European Vegetation
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- Threatened Fauna
- Threatened and Priority Flora
- TEC/PEC – Boundaries
- TEC/PEC – Buffer

**(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 of the application area was undertaken by Botanica (2016). Based on the results of this fauna survey the following broad habitat types have been identified within the application area (Botanica, 2016):

1. Clay-Loam Plains;
2. Closed Depressions;
3. Rocky Hillslope;
4. Sand Dunes;
5. Sand-Loam Plain.

The most widespread fauna habitat type of the application area was sand-loam plain comprised of (*Casuarina* forests and woodlands, Eucalypt woodlands, low closed forests and tall closed shrublands, mallee woodlands and shrublands) (632 hectares) and the least widespread fauna habitat was sand dunes (20 hectares) (Botanica, 2016). No Threatened or Priority fauna were recorded in the application area as part of the fauna survey (Botanica, 2016).

A search of available biological databases was undertaken and no known records of Threatened fauna occur within the application area (GIS Database). A desktop survey of fauna species potentially occurring in the region was undertaken prior to the fauna survey (Botanica, 2016). The desktop survey identified 204 fauna species potentially occurring within a 20 kilometre radius of the application area (Botanica, 2016). Seven fauna species of conservation significance had the potential to occur within the application area due to suitable habitat being present (Botanica, 2016). The majority of these conservation fauna species were migratory bird species and include the Rainbow Bee-eater (*Merops ornatus*), Fork-tailed Swift (*Apus pacificus pacificus*), Grey Falcon (*Falco hypoleucos*), and Peregrine Falcon (*Falco peregrinus*) (Botanica, 2016). In addition to these species, the following conservation significant mammal species were recorded as potentially occurring in the application area; the Chuditch (*Dasyurus geoffroii* – Threatened), Numbat (*Myrmecobius fasciatus* - Threatened) and the Central Long-eared Bat (*Nyctophilus major tor* – Priority 4) (Botanica, 2016).

The desktop survey reported the possibility of conservation significant species being present in the application (Botanica, 2016). However, fauna habitats located within the application area are common and widely distributed across the Coolgardie region and suitable fauna habitats are well represented outside of the proposal area (Botanica, 2016; Northern Star Resources, 2016). No fauna habitat in the application area is considered to be critical to the survival of conservation significant fauna species.

Botanica (2016) report potential foraging and breeding habitat for the Rainbow Bee-eater (*Merops ornatus* – Migratory) may occur in the application area. It is unlikely Rainbow Bee-eater individuals would rely solely on the application area as the application area contains cleared vegetation and has been subjected to previous disturbance. The species also require close proximity to a permanent water source (DotEE, 2017). No permanent water sources are located in or near the application area. Rainbow Bee-eaters are highly mobile and widely distributed around Australia, therefore the application area is not considered to be significant habitat for the species (DotEE, 2017).

Botanica (2016) considered that individuals of Central Long-eared Bat (*Nyctophilus major tor*) individuals could possibly utilise the application area. However, while a small area of potential habitat exists in the application area, this species has rarely been recorded in this distribution range and may only occur infrequently (Botanica, 2016). Therefore, the application area is not considered to be significant habitat for this species.

The area proposed to be cleared does not contain habitat critical for fauna species and the proposed clearing will not impact significant fauna habitat.

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

**Methodology**

Botanica (2016)  
 DotEE (2017)  
 Northern Star Resources Ltd (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 available databases was undertaken and no Threatened flora were located in the application area (GIS Database). A flora survey was also undertaken by Botanica (2016) which did not record species of Threatened flora in the application area. The native vegetation proposed to be cleared is not likely to contain or is not necessary for the continued existence of rare flora.

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

**Methodology** Botanica (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**

According to available databases, there are no Threatened Ecological Communities (TEC's) occurring within or near the application area (GIS Database). Botanica (2016) reported no vegetation communities considered to be a TEC within or near the application area as a result of the flora survey.

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

**Methodology** Botanica (2016)

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

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

**Comments Proposal is not at variance to this Principle**

The application area falls within the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 97.96% of the pre-European vegetation remains in Western Australia (refer to table below) (Government of Western Australia, 2015; GIS Database).

The native vegetation located in the application area has been mapped as the following Beard vegetation associations:

**125:** Bare areas; salt lakes,

**468:** Medium woodland; salmon gum and goldfields blackbutt,

**540:** Succulent steppe with open low woodland; sheoak over saltbush (GIS Database).

These vegetation associations have not been extensively cleared as over 90% remains at both state and bioregional levels (refer to table) (Government of Western Australia, 2015). The conservation status of these vegetation associations in the Coolgardie bioregion are considered to be of least concern (Department of Natural Resources and Environment, 2002). The area proposed to be cleared is not considered to be significant as a remnant in an area that has been extensively cleared (GIS Database).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in All DPaW Managed Land
IBRA Bioregion – Coolgardie	12,912,204	12,648,491	~ 97.96	Least Concern	15.89
<b>Beard veg assoc. – State</b>					
125	3,485,786	3,146,496	~90.27	Least Concern	9.28
468	592,022	583,903	~98.63	Least Concern	22.86
540	202,423	200,158	~98.88	Least Concern	27.87
<b>Beard veg assoc. – Bioregion</b>					
125	545,717	506,802	~92.87	Least Concern	6.57
468	583,358	575,361	~ 98.63	Least Concern	22.43
540	75,810	73,619	~97.11	Least	0.00

\* Government of Western Australia (2015)

\*\* 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 (2015)

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 two, small, ephemeral water bodies mapped within the application area (GIS Database). These waterbodies are associated with salt lakes and are located in the north-east and south-east portions of the application area (Botanica, 2016; GIS Database). The flora survey prepared by Botanica (2016) recorded one vegetation community (CD-CSSSF1; Low Scrub of *Dodonaea lobulata* over low heath of *Tecticornia indica* subsp. *bidens* on playa edge) which is growing in association with in an environment associated with a waterbody in the application area (Botanica, 2016).

The application area contains wetland dependent vegetation which will be cleared as part of the proposal. However, vegetation community (CD-CSSSF1) is considered to be small portion (6.9%) of the application area (Botanica, 2016). The clearing footprint is considered to be a small portion of a large area of similar vegetation which is located in the surrounding area (GIS Database). The clearing is considered to be at variance to this Principle, although the clearing is not likely to significantly impact the ecological or hydrological functions of waterbodies in the area. Native vegetation clearing will not have a detrimental impact on vegetation types located in the area.

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

**Methodology** Botanica (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 is not likely to be at variance to this Principle**

Northcote, et al. (1960-68) describe the soils in the application area as shallow, calcareous, loamy soils with shallow, grey-brown calcareous earths to alkaline red earths with limestone on gently undulating valley plains and pediments (Botanica, 2016; GIS Database). These soils do not readily erode but may be subjected to minor wind erosion once vegetation has been cleared. A small south-western portion of the application area consists of gypseous and saline loams and soils on lake beds (Northcote, et al. 1960-68; GIS Database). Localised surface water run-off may occur following heavy rainfall events and if surface water drainage on-site is not managed. It is unlikely the proposal will change soil salinity levels or impact on-site or off-site nutrient export. Clearing activities are not likely to cause adverse land degradation impacts.

The surrounding and regional areas have not been extensively cleared of native vegetation. It is unlikely that the clearing required for the proposal (100 hectares) within a 938.97 hectare boundary area will cause appreciable land degradation.

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

**Methodology** Botanica (2016)  
Northcote, et al. (1960-68)

GIS Database:  
- Hydrography, linear  
- Topographic Contours, Statewide

**(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 at variance to this Principle**

The application area does not lie within any conservation areas or Department of Parks and Wildlife managed

lands (Botanica; 2016; GIS Database). The nearest conservation area is the Kurrawang Nature Reserve which is located approximately 11 kilometres south-east of the application area (GIS Database). As this conservation area is located a considerable distance from the application area, the proposed clearing is not likely to have any impacts on the environmental values of this or any other conservation area.

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

**Methodology** Botanica (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**

No Public Drinking Water Source Areas (PDWSA's) are located within or in the vicinity of the application area (GIS Database). There are no permanent watercourses or wetlands located within the application area (GIS Database). The nearest permanent watercourse, Rowles Lagoon, is located approximately 46 kilometres north-west of the application area. Therefore, the clearing of native vegetation required for the proposal will not cause deterioration in the quality of surface water, including sedimentation, erosion, turbidity or eutrophication of water bodies on-site or off-site.

It is not expected that the proposed clearing of 100 hectares within a permit boundary of 938.97 hectares would adversely alter groundwater or surface water quality (Botanica, 2016). The proposed clearing is not likely to have an impact on the quality of groundwater either on-site or off-site of the application area.

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

**Methodology** Botanica (2016)

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 mean annual rainfall recorded at the nearest weather station located at Kalgoorlie- Boulder Airport is 266.3 millimetres (BoM, 2017). Total average annual evaporation for the area is 2,800 millimetres (BoM, 2017). For this reason, there is likely to be little surface flow during normal seasonal rains (BoM, 2017). It is unlikely that the proposed clearing will cause or exacerbate the incidence or intensity of flooding.

The soils of the application area are not subject to waterlogging during normal seasonal rainfall (Northcote, et al. 1960-68; GIS Database). The application area receives low annual rainfall and high average annual evaporation (BoM, 2017). For these reasons, the clearing of 100 hectares of native vegetation is unlikely to increase flooding of the application area. The surrounding area is also well vegetated further reducing the likelihood of or intensity of flooding (GIS Database).

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

**Methodology** BoM (2017)  
Northcote, et al. (1960-68)

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 (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 no 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 2 January 2017 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

**Methodology** DAA (2017)

## 4. References

- Botanica (2016) Level 1 Flora and Fauna Survey, M16/309, Report prepared for Northern Star Resources Limited, Prepared by Botanica Consulting, Boulder, Western Australia, November 2016.
- BoM (2017) Bureau of Meteorology Website - Climate Data Online, Kalgoorlie-Boulder Airport. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/index.shtml>. (Accessed 24 January 2017).
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Coolgardie (COO3 – Eastern Goldfield subregion) Department of Conservation and Land Management, Perth, Western Australia.
- DAA (2017) Aboriginal Heritage Inquiry System. Department of Aboriginal Affairs. <http://maps.dia.wa.gov.au/AHIS2> (Accessed 13 January 2017).
- DotEE (2017) *Merops ornatus* in Species Profile and Threats Database. Department of the Environment and Energy. <http://www.environment.gov.au/sprat>. Department of the Environment, Canberra. (Accessed 17 January 2017).
- 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 (2015) 2015 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Western Australian Department of Parks and Wildlife, Perth, Western Australia.
- Keighery B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of Western Australia (Inc.). Nedlands, Western Australia.
- Northcote, K. H. with Beckmann G. G., Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
- Northern Star Resources Ltd (2016) M16/309 - Clearing Permit Supporting Document. Northern Star Resources Ltd, Western Australia, December, 2016.

## 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)
DotEE	Department of the Environment and Energy, Australian Government
DER	Department of Environment Regulation, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DRF	Declared Rare Flora
DoE	Department of the Environment, Australian Government (now DEE)
DoW	Department of Water, Western Australia
DPaW	Department of Parks and Wildlife, Western Australia
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DEE)
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 World Conservation Union

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

### Definitions:

{DPaW (2015) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

T	<p><b>Threatened species:</b> 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><b>Threatened fauna</b> 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><b>Threatened flora</b> 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><b>Critically endangered species</b> 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><b>Endangered species</b> 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><b>Vulnerable species</b> 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><b>Presumed extinct species</b> 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><b>Migratory birds protected under an international agreement</b> 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><b>Conservation dependent fauna</b> 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><b>Other specially protected fauna</b> 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><b>Priority species</b> 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><b>Priority One - Poorly-known species:</b> 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 pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or</p>



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.

