



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 9500/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Evolution Mining (Phoenix) Pty Ltd

### 1.3. Property details

Property: Mining Leases 16/15, 16/19, 16/24, 16/40, 16/140, 16/152, 16/189, 16/195, 16/198, 16/444, 16/526, 16/532, 16/533, 16/537, 16/538  
Miscellaneous Licences 16/84, 16/97, 16/101, 16/108, 16/113, 16/126, 16/128  
Local Government Area: Shire of Coolgardie  
Colloquial name: Castle Hill Project

### 1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of:                          |
|--------------------|-----------|--------------------|--|
| 800                |           | Mechanical Removal | Mineral Production and Associated Activities |

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 10 June 2022

## 2. Site Information

### 2.1. Existing environment and information

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

**Vegetation Description** The vegetation of the application area is broadly mapped as the following Beard vegetation associations:  
9: Medium woodland; coral gum (*Eucalyptus torquata*) & goldfields blackbutt (*E. le soufii*), (also some e10,11);  
221: Succulent steppe; saltbush;  
460: Medium woodland; salmon gum & goldfields blackbutt;  
520: Shrublands; *Acacia quadrimarginea* thicket; and  
936: Medium woodland; salmon gum (GIS Database).

A detailed flora and vegetation survey was conducted over the application area by Botanica Consulting during November, 2020 (Botanica, 2021). The following vegetation associations were recorded within the application area (Botanica, 2021):

- CLP-EW1: Low woodland of *Eucalyptus campaspe* / *E. salmonophloia* over mid shrubland of *Eremophila* spp. and low chenopod shrubland on clay-loam plain;
- CLP-EW2: Low woodland of *Eucalyptus ravida* / *E. salmonophloia* over mid shrubland of *Eremophila* spp. and low chenopod shrubland on clay-loam plain;
- CLP-OS1: Mid sparse shrubland of *Atriplex nummularia* subsp. *spathulata* subsp. *spathulata* / *Eremophila dempsteri* over sparse tussock grassland of *Austrostipa nitida* on clayloam plain;
- CLP-OS2: Mid open shrubland of *Eremophila alternifolia* / *E. interstans* subsp. *virgata* over low chenopod shrubland on clay-loam plain;
- CoAtEd: Low to mid *Casuarina obesa* and *Eucalyptus griffithsii* woodland over mid to tall open *Acacia tetragonophylla*, *Exocarpos aphyllus* and *Cratystylis subspinescens* shrubland over isolated low *Eremophila decipiens* subsp. *decipiens*, *Grevillea acuaria* and *Rhagodia drummondii* shrubs;
- EcDIOM: Mid *Eucalyptus clelandiorum* woodland with other *Eucalyptus* trees, frequently *E. celastroides* subsp. *celastroides* or *E. griffithsii*, over isolated shrubs to mid open *Dodonaea lobulata*, *Eremophila scoparia* and *Exocarpos aphyllus* shrubland over isolated low to sparse *Olearia muelleri*, *Ptilotus obovatus* and *Westringia rigida* shrubland;
- EgAhOm: Mid *Eucalyptus griffithsii* woodland with other *Eucalyptus* trees including *E. oleosa* subsp. *oleosa* and *E. longicornis* over isolated shrubs to mid open *Acacia hemiteles*, *Exocarpos aphyllus* and *enna artemisioides* subsp. *filifolia* shrubland over isolated low *Olearia muelleri*, *Scaevola spinescens* and *Westringia rigida* shrubs;
- EIEaAv: Mid *Eucalyptus longicornis* woodland with *E. clelandiorum* and *E. griffithsii* trees over mid to tall open *Exocarpos aphyllus*, *Eremophila glabra* and *Senna artemisioides* subsp. *filifolia* shrubland over isolated low *Atriplex vesicaria*, *Ptilotus obovatus* and *Rhagodia drummondii* shrubs;
- EsEsAb: Mid *Eucalyptus salmonophloia* and *E. salubris* woodland over mid *Eremophila scoparia*, *Senna artemisioides* subsp. *filifolia* and *Exocarpos aphyllus* shrubland over low open *Atriplex bunburyana*, *Maireana trichoptera* and *Ptilotus obovatus* shrubland;
- OD-EW1: Low woodland of *Eucalyptus salmonophloia* / *E. transcontinentalis* / *E. clelandiorum* over mid shrubland of *Eremophila* spp. and low samphire shrubland in open depression;
- RH-AFW1: Low woodland of *Acacia quadrimarginea* over mixed mid open shrubland and low open shrubland of *Ptilotus obovatus* on greenstone hillslope;

- RH-CFW1: Low open woodland of *Allocasuarina acutivalvis*/*Casuarina pauper* over low mixed scrub on greenstone hillslope;
- RH-EW1: Low woodland of *Eucalyptus clelandiorum* over mid shrubland of *Eremophila* spp. shrubland and low chenopod shrubland on greenstone hillslope;
- RH-EW2: Low woodland of *Eucalyptus clelandiorum* / *Eucalyptus torquata* over low shrubland of *Eremophila* spp. on greenstone hillslope;
- RH-MWS1: Open mallee woodland of *Eucalyptus griffithsii* over mid shrubland of *Eremophila* / *Dodonaea* spp. and low mixed shrubland on greenstone hillslope;
- SLP-AS1: Tall open shrubland of *Acacia acuminata* over low mixed shrubland on sandy-loam plain;
- SLP-MWS1: Tall mallee woodland of *Eucalyptus griffithsii* over mid open shrubland of *Eremophila*/*Senna* spp. And hummock grassland of *Triodia irritans* on sand-loam plain.

|                             |   |
|-----------------------------|---|
| <b>Clearing Description</b> | Castle Hill Project.<br>Evolution Mining (Phoenix) Pty Ltd proposes to clear up to 800 hectares of native vegetation within a boundary of approximately 1,072 hectares, for the purpose of mineral production and associated activities. The project is located approximately 23 kilometres west of Kalgoorlie, within the Shire of Coolgardie. |
| <b>Vegetation Condition</b> | Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994);<br><br>To<br><br>Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).   |
| <b>Comment</b>              | The vegetation condition was derived from a vegetation survey conducted by Botanica (2021).   |

### 3. Assessment of application against Clearing Principles

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

|                 |  |
|-----------------|--|
| <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 subregion of the Coolgardie Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). This subregion is characterised by gently undulating plains interrupted in the west with low hills and a series of large playa lakes in the western half (CALM, 2002). The vegetation is dominated by Mallees, <i>Acacia</i> thickets and shrub-heaths on sandplains, diverse <i>Eucalyptus</i> woodlands occur around salt lakes, on ranges, and in valleys, and dwarf shrublands of sapphire around salt lakes (CALM, 2002).</p> <p>A desktop review and detailed flora and vegetation survey was conducted over the application area by Botanica Consulting during November, 2020 (Botanica, 2021). The desktop review identified 780 vascular flora species as occurring within 40 kilometres of the survey area, representing 303 genera from 76 families (Botanica, 2021). The most diverse families were Asteraceae (104 species), Fabaceae (99 species) and Myrtaceae (88 species). Significant genera include <i>Acacia</i> (54 species), <i>Eucalyptus</i> (47 species) and <i>Eremophila</i> (35 species) (Botanica, 2021).</p> <p>Available databases show no known Threatened flora, Priority Ecological Communities (PECs) or Threatened Ecological Communities (TECs) have been recorded within the application area (GIS Database). No Threatened flora, TECs or PECs were recorded by Botanica (2021).</p> <p>One Priority flora species has previously been recorded within the application area:</p> <ul style="list-style-type: none"> <li>• <i>Eremophila praecox</i> (Priority 2).</li> </ul> <p><i>Eremophila praecox</i> is a broom-shaped shrub which grows to a height of between 0.3 and 1.5 m. The flowers are purple, tinged white on the outside. There are 34 collections of <i>Eremophila praecox</i> in the Western Australian Herbarium, and together with records from DBCA's Threatened and Priority Flora database (TPFL), these represent approximately 13 populations (Botanica, 2021). 12 of these populations are within a 50 kilometre radius of Kalgoorlie-Boulder, with another one of these populations being approximately 40 kilometres south-east of Kambalda (Botanica, 2021). It generally grows in red-brown sandy loam with other <i>Eremophila</i> species.</p> <p>It has been identified that two individuals of <i>Eremophila praecox</i> are within the disturbance footprint for the proposed haul road (Botanica, 2021). An 'Application to Take Priority Flora' has been submitted by Botanica Consulting on behalf of Evolution Mining (Phoenix) Pty Ltd to impact these individuals (Botanica, 2021). It is considered unlikely that the loss of these two individuals would be a significant to this species in a local or regional context.</p> <p>Based on vegetation and associated landforms identified during the flora and vegetation assessment, eight broad scale terrestrial fauna habitats were identified as occurring within the broader survey area (Botanica, 2021). No significant fauna habitats were observed within the application area (Botanica, 2021).</p> <p>The desktop review identified 71 introduced flora (weed) species as potentially occurring in the vicinity of the survey area. Weeds have the potential to out-compete native flora and reduce the biodiversity of an area.</p> |
|-----------------|--|

Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

The vegetation associations, fauna habitats and landform types present within the application area, are well represented in surrounding areas (Botanica, 2021; 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** Botanica (2021)  
CALM (2002)

GIS Database:

- IBRA Australia
- Pre-European Vegetation
- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities Buffers
- Threatened and Priority Flora
- Threatened Fauna

**(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.**

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

A basic fauna survey was undertaken in conjunction with the flora and vegetation survey during November 2020 (Botanica, 2021). Vegetation and landform units identified during the flora assessment were used to define broad fauna habitat types across the site.

The following eight fauna habitats have been recorded within the application area (Botanica, 2021):

- *Eucalypt* woodland on clay-loam plain/open depression;
- Open mixed shrubland on clay-loam plain;
- *Eucalypt* woodland/ Mallee woodland on greenstone hillslope;
- *Acacia/Casuarina* woodland on greenstone hillslope;
- *Acacia* shrubland on sandy-loam plain;
- Mallee woodland over spinifex grassland on sand-loam plain;
- Open *Eucalypt* woodland; and
- Shrubland.

These habitats are common and widespread in the local and regional area (Botanica, 2021; GIS Database).

According to the results of the NatureMap search (Botanica, 2021), a total of 261 terrestrial vertebrate fauna taxa have been recorded within a 40 km radius of the survey area, consisting of 158 bird, 26 mammal, 71 reptile and six amphibian taxa. This total includes seven introduced (feral) species (Botanica, 2021).

The desktop review identified 22 terrestrial vertebrate fauna species of conservation significance as previously being recorded in the regional area, consisting of seven Threatened, one Priority 3, one Priority 4 and three migratory or otherwise protected species. In addition, ten migratory wading/shorebird species were assessed collectively due to their similar habitat requirements. Habitat and distribution data was used to determine the likelihood of occurrence within the survey area. The assessment identified three significant fauna species as potentially occurring:

- Malleefowl (*Leipoa ocellata*) – Threatened;
- Central Long-eared Bat (*Nyctophilus major tor*) – Priority 4;
- Peregrine Falcon (*Falco peregrinus*) – Other Specially Protected Species.

Two inactive (historical) Malleefowl mounds were observed within the broader survey area (Botanica, 2021). It was estimated that these mounds were at least 20 years old and in fact maybe much older than this as they deteriorate slowly. No active Malleefowl mounds or other evidence of Malleefowl activity (tracks, feathers or bird observations etc.) were observed during the field survey (Botanica, 2021). Available information therefore suggests that a breeding population of this species is unlikely to be present in the survey area, though transient non-breeding individuals may occasionally occur. It is considered unlikely that the proposed clearing will have a significant impact on the conservation status of this species or its habitat.

The Central Long-eared Bat and Peregrine Falcon have the potential to utilise the application area, however both are generally wide ranging and uncommon in this area (Botanica, 2021). Aerial imagery indicates fauna habitats within the application area are likely to be similar to those in the surrounding area (GIS Database). It is considered unlikely that the proposed clearing will have a significant impact on the conservation status of these species or their habitat.

Further to the fauna assessment, Botanica was also engaged to complete a targeted survey for the Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*) (Botanica, 2021). The Arid Bronze Azure Butterfly (ABAB) is listed as critically endangered due to its severely fragmented distribution. The ABAB has an obligate association with a sugar ant *Camponotus sp. nr. terebrans*. The ABAB's larvae live entirely within the ant's nest during their development (Botanica, 2021). A total of 265 trees were searched for the host ant *Camponotus sp. nr. Terebrans*, however none were identified. Based on the above, it is considered unlikely that the proposed clearing would have an impact on the ABAB.

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

**Methodology** Botanica (2021)

GIS Database:

- Imagery
- Pre-European Vegetation
- Threatened Fauna

**(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.**

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

There are no known records of Threatened flora within the application area (GIS Database). A flora survey of the application area did not record any species of Threatened flora (Botanica, 2021).

The vegetation associations within the application area are common and widespread within the region (Botanica, 2021; GIS Database), and the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened flora.

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

**Methodology** Botanica (2021)

GIS Database:

- Pre-European Vegetation
- 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**

There are no known Threatened Ecological Communities (TECs) located within or in close proximity to the application area (GIS Database).

A flora and vegetation survey of the application area did not identify any TECs (Botanica, 2021).

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

**Methodology** Botanica (2021)

GIS Database:

- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities 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 Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 98% of the pre-European vegetation still exists in the IBRA Coolgardie Bioregion (Government of Western Australia, 2019). The application area is broadly mapped as Beard vegetation associations 9: Medium woodland; coral gum (*Eucalyptus torquata*) & goldfields blackbutt (*E. le soufii*), (also some e10,11); 221: Succulent steppe; saltbush; 460: Medium woodland; salmon gum & goldfields blackbutt; 520: Shrublands; *Acacia quadrimarginea* thicket; and 936: Medium woodland; salmon gum (GIS Database). Approximately 94% or more of the pre-European extent of each of these vegetation associations remains uncleared at both the state and bioregional level (Government of Western Australia, 2019).

Therefore, the application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared.

|  | Pre-European area (ha)* | Current extent (ha)* | Remaining %* | Conservation Status** | Pre-European % in DBCA managed lands |
|--|-------------------------|----------------------|--------------|-----------------------|--------------------------------------|
| IBRA Bioregion – Coolgardie                          | 12,912,204              | 12,648,491           | ~98          | Least Concern         | 16.37                                |
| Beard vegetation associations – WA                   |                         |                      |              |                       |                                      |
| 9  | 240,509                 | 235,162              | ~98          | Least Concern         | 7.89                                 |
| 221  | 63,720                  | 59,923               | ~94          | Least Concern         | 16.92                                |
| 460  | 2,796,806               | 2,794,878            | ~99          | Least Concern         | 0.86                                 |
| 520  | 37,923                  | 37,370               | ~99          | Least Concern         | 44.88                                |
| 936  | 698,752                 | 676,689              | ~97          | Least Concern         | 4.01                                 |
| Beard vegetation associations – Coolgardie Bioregion |                         |                      |              |                       |                                      |
| 9  | 240,442                 | 235,101              | ~98          | Least Concern         | 7.90                                 |
| 221  | 19,498                  | 19,305               | ~99          | Least Concern         | 10.14                                |
| 460  | 4,616                   | 4,557                | ~99          | Least Concern         | 6.48                                 |
| 520  | 37,129                  | 36,576               | ~99          | Least Concern         | 44.92                                |
| 936  | 586,792                 | 584,336              | ~99          | Least Concern         | 3.09                                 |

\* Government of Western Australia (2019)

\*\* 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 (2019)

GIS Database:

- IBRA Australia
- Pre-European Vegetation

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

**Comments** **Proposal is at variance to this Principle**

There are no permanent watercourses or wetlands within the area proposed to clear (Botanica, 2021; GIS Database). Numerous seasonal creek lines pass through the application area (GIS Database). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall (BoM, 2022). Of the 17 vegetation types identified, one was identified as growing in association with a watercourse; OD-EW1 which represents 3.9% of the total broader survey area.

Based on the above, the proposed clearing is at variance to this Principle. Potential impacts to vegetation growing in association with watercourses may be minimised by the implementation of a watercourse management condition.

**Methodology** BoM (2022)

GIS Database:

- Hydrography, 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 lies within the Coolgardie bioregion (GIS Database), on the Yilgarn Craton's 'Eastern Goldfields Terrains' (CALM, 2002). Landforms of the Coolgardie bioregion include granite rocky outcrops, low greenstone hills, laterite uplands and broad plains (Bastin, G., and the ACRIS Management Committee, 2008).

According to Botanica (2021), the soils of the area are red/brown sandy loam, shallow soils, granite rocks, red clay and loamy soils, and red sand in disturbed areas. The majority of the application area is relatively flat (GIS Database) and the area experiences a low annual rainfall with Kalgoorlie recording an annual average rainfall of 265.6 millimetres (BoM, 2022).

The Department of Agriculture of Western Australia (DAWA) (now Department of Primary Industries and Regional Development) has provided advice on underlying clearing permit CPS 462/2. This permit covers most of the application area, therefore, the advice provided by DAWA is considered applicable. According to the decision report for CPS 462/2, DAWA (2005) (cited in DEC, 2006) considered the ironstone flats and broad salmon gum valley vegetation communities identified by Jims Seeds, Weeds and Trees (2004) as slightly prone to erosion if the vegetation or drainage is disturbed. Both these vegetation communities have been mapped within the application area (Jims Seeds, Weeds and Trees, 2004). Based on this and given the size of the proposed clearing (800 hectares) there is the potential for land degradation to occur. Potential impacts from erosion may be minimised by the implementation of a watercourse management condition and a staged clearing condition.

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

**Methodology** Bastin, G., and the ACRIS Management Committee (2008)  
BoM (2022)  
Botanica (2021)  
CALM (2002)  
DEC (2006)  
Jims Seeds, Weeds and Trees (2004)

GIS Database:  
- Landsystem Rangelands  
- Soils, Statewide  
- Topography

**(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**

There are no conservation areas in the vicinity of the application area. The nearest DBCA (formerly DPaW) managed land is the former Credo Pastoral Lease which is located approximately 16 kilometres west, north-west of the application area (GIS Database). The proposed clearing is unlikely to impact on the environmental values of any 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 area proposed to clear (GIS Database). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall. The proposed clearing is unlikely to result in significant changes to surface water flows.

The proposed clearing is unlikely to cause deterioration in the quality of underground water.

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

**Methodology** 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 265.6 millimetres per year (BoM, 2022). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall (BoM, 2022; Botanica, 2021).

There are no permanent water courses or waterbodies within the application area (GIS Database). Seasonal drainage lines are common in the region and temporary localised flooding may occur briefly following 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** BoM (2022)  
Botanica (2021)

GIS Database:  
- Hydrographic Catchments - Catchments  
- Hydrography, linear

## Planning Instrument, Native Title, previous EPA decision or other matter.

### Comments

The clearing permit application was advertised on 4 February 2022 by the Department of Mines, Industry Regulation and Safety (DMIRS), inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim (WC2017/007) over the area under application (DPLH, 2022). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. 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 (DPLH, 2022). 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 Water and Environmental Regulation and the Department of Biodiversity, Conservation and Attractions, 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** DPLH (2022)

## 4. References

- Bastin, G., and the ACRIS Management Committee (2008) Rangelands 2008 - Taking the Pulse; Coolgardie Bioregion. Published on behalf of the Australian Collaborative Rangeland Information System (ACRIS) Management Committee by the National Land and Water Resources Audit, Canberra.
- BoM (2022) Bureau of Meteorology Website – Climate Data Online, Kalgoorlie. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 7 June 2022).
- Botanica (2021) Castle Hill Project - Detailed Flora / Vegetation Survey and Basic Fauna Survey. Unpublished report prepared by Botanica Consulting for Evolution Mining (Phoenix) Pty Ltd, March 2021.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- DEC (2006) Clearing Permit Decision Report for CPS 462/2. Prepared by the Department of Environment and Conservation, 3 March 2006.
- 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.
- DPLH (2022) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 8 June 2022).
- Government of Western Australia (2019) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions, Perth. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Jims Seeds, Weeds and Trees (2004) Flora Survey for Cazaly Resources of the Kunanalling Project. Unpublished report prepared by Jims Seeds, Weeds and Trees Pty Ltd for Cazaly Resources dated December 2004.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

## 5. Glossary

### Acronyms:

|               |  |
|---------------|--|
| <b>BC Act</b> | <i>Biodiversity Conservation Act 2016</i> , Western Australia  |
| <b>BoM</b>    | Bureau of Meteorology, Australian Government                   |
| <b>DAA</b>    | Department of Aboriginal Affairs, Western Australia (now DPLH) |

|                 |   |
|-----------------|---|
| <b>DAFWA</b>    | Department of Agriculture and Food, Western Australia (now DPIRD)   |
| <b>DAWE</b>     | Department of Agriculture, Water and the Environment, Australian Government   |
| <b>DBCA</b>     | Department of Biodiversity, Conservation and Attractions, Western Australia   |
| <b>DER</b>      | Department of Environment Regulation, Western Australia (now DWER)  |
| <b>DMIRS</b>    | Department of Mines, Industry Regulation and Safety, Western Australia  |
| <b>DMP</b>      | Department of Mines and Petroleum, Western Australia (now DMIRS)  |
| <b>DoEE</b>     | Department of the Environment and Energy (now DAWE)   |
| <b>DoW</b>      | Department of Water, Western Australia (now DWER)   |
| <b>DPaW</b>     | Department of Parks and Wildlife, Western Australia (now DBCA)  |
| <b>DPIRD</b>    | Department of Primary Industries and Regional Development, Western Australia  |
| <b>DPLH</b>     | Department of Planning, Lands and Heritage, Western Australia   |
| <b>DRF</b>      | Declared Rare Flora (now known as Threatened Flora)   |
| <b>DWER</b>     | Department of Water and Environmental Regulation, Western Australia   |
| <b>EP Act</b>   | <i>Environmental Protection Act 1986</i> , Western Australia  |
| <b>EPA</b>      | Environmental Protection Authority, Western Australia   |
| <b>EPBC Act</b> | <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)  |
| <b>GIS</b>      | Geographical Information System   |
| <b>ha</b>       | Hectare (10,000 square metres)  |
| <b>IBRA</b>     | Interim Biogeographic Regionalisation for Australia   |
| <b>IUCN</b>     | International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union |
| <b>PEC</b>      | Priority Ecological Community, Western Australia  |
| <b>RIWI Act</b> | <i>Rights in Water and Irrigation Act 1914</i> , Western Australia  |
| <b>TEC</b>      | Threatened Ecological Community   |

### Definitions:

{DBCA (2019) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia):-

#### **T** Threatened species:

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

**Threatened fauna** is that subset of ‘Specially Protected Fauna’ listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

**Threatened flora** is that subset of ‘Rare Flora’ listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

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.

#### **CR** Critically endangered species

Threatened species considered to be “*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

#### **EN** Endangered species

Threatened species considered to be “*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

#### **VU** Vulnerable species

Threatened species considered to be “*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

### Extinct Species:



**EX Extinct species**  
Species where “*there is no reasonable doubt that the last member of the species has died*”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).  
Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

**EW Extinct in the wild species**  
Species that “*is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*”, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).  
Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

**Specially protected species:**

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

**MI Migratory species**  
Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).  
Includes 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 fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.  
Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

**CD Species of special conservation interest (conservation dependent fauna)**  
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).  
Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

**OS Other specially protected species**  
Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).  
Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

**P Priority species:**  
Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.  
Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species 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.

**P1 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 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.