



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 9070/2

Permit type: Purpose

### 1.2. Proponent details

Proponent's name: Big Bell Gold Operations Pty Ltd

### 1.3. Property details

Property: General Purpose Lease 51/9  
Mining Lease 51/6, 51/12, 51/31, 51/33, 51/53, 51/62, 51/75, 51/96, 51/203, 51/320, 51/321, 51/334, 51/374, 51/486, 51/496, 51/524, 51/568, 51/569, 51/572, 51/575, 51/581, 51/793, 51/794, 51/795, 51/819, 51/820  
Miscellaneous Licence 51/18, 51/33, 51/34

Local Government Area: Shire Meekatharra

Colloquial name: Nannine Project

### 1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of:                           |
|--------------------|-----------|--------------------|---|
| 1,581.75           |           | Mechanical Removal | Mineral Production and Associated Activities. |

### 1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 30 April 2021

## 2. Site Information

### 2.1. Existing environment and information

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

**Vegetation Description** The clearing permit application area has been broadly mapped as the following Beard vegetation associations:

18: Low woodland; mulga (*Acacia aneura*);  
39: Shrublands; mulga scrub;  
125: Bare areas; salt lakes; and  
1128: Mosaic: Succulent steppe with open scrub; scattered *Acacia sclerosperma* & bowgada over saltbush & bluebush/Succulent steppe; samphire (GIS Database).

Several flora and vegetation surveys have been conducted over the original permit area by MWH (2015; 2017), NVS (2018), Spectrum Ecology (2020), and subsequently for the amendment application area by Western Ecological (2021).

The following vegetation associations were recorded over the existing permit area and surrounding areas MWH (2015), between 14 to 17 July 2015:

**LB:** Bare lake bed (playa) - Bare lake bed (playa).

**VA01:** Maireana chenopod shrubland - Scattered shrubs of *Maireana pyramidata* and *Cratystylis subspinescens* over low chenopod shrubland of *Maireana tomentosa*, *Maireana triptera* and *Dissocarpus paradoxus* over scattered low tussock grassland of *Aristida contorta* on red/brown sandy, clay loam.

**VA02a:** Acacia scattered tall shrubland - Scattered tall shrubs of *Acacia pteraneura* and *Acacia tetragonophylla* over scattered mid shrubs of *Senna* sp. Meekatharra (E. Bailey 1-26) and *Senna artemisioides* subsp. *helmsii* over open low shrubland of *Maireana triptera*, *Eremophila ?jucunda* subsp. *jucunda* and *Ptilotus obovatus* over very open low tussock grassland of *Aristida contorta* on red/brown loamy sand with stony surface.

**VA02b:** Acacia scattered tall shrubland - Scattered tall shrubs of *Acacia pteraneura* over open low chenopod shrubland of *Maireana pyramidata*, *Maireana triptera* and *Rhagodia eremaea* over very open low tussock grassland of *Aristida contorta* on red/brown stony, loamy sand with stony surface.

**VA03:** Tecticornia samphire shrubland - Mosaic of mid to tall samphire shrubland dominated by Tecticornia species on moist clay.

**VA04:** Acacia open tall shrubland - Open tall shrubland to scattered tall shrubs of *Acacia fuscaneura*

and occasional *Acacia synchronicia* over open mid shrubland of *Eremophila latrobei* subsp. *latrobei*, *Senna* sp. Meekatharra (E. Bailey 1-26) and *Eremophila* spp. over scattered low shrubs of *Ptilotus obovatus* and *Solanum lasiophyllum* over open low chenopod shrubland of *Maireana triptera* and *Sclerolaena* spp. over very open low tussock grassland of *Aristida contorta* and *Enneapogon caerulescens* on skeletal red/brown loamy sand with ironstone outcropping.

**VA05:** *Hakea* open tall shrubland - Open tall shrubland to isolated patches of tall shrubs of *Hakea preissii* and *Acacia sclerosperma* subsp. *sclerosperma* over open mid shrubland to scattered mid shrubs of *Dodonaea viscosa* subsp. *angustissima*, *Maireana pyramidata* and *Cratystylis subspinescens* over scattered mid chenopod shrubs of *Maireana triptera* and *Atriplex vesicaria* over scattered low tussock grassland of *Aristida contorta* on red/orange loamy sand.

**VA06:** *Salsola* low chenopod shrubland - Scattered mid shrubs of *Maireana pyramidata* and *Eremophila longifolia* over low chenopod shrubland to low open chenopod shrubland of *Salsola australis*, *Sclerolaena diacantha* and *Dissocarpus paradoxus* over scattered low herbs of *Swainsona paradoxa* on red/orange fine clayey loam.

**VA07a:** *Acacia* scattered low trees - Scattered low trees of *Acacia fusca* over open tall shrubland to isolated patches of tall shrubs of *Acacia sclerosperma* subsp. *sclerosperma* and *Hakea preissii* over open mid shrubland of *Eremophila* sp. B, *Senna artemisioides* subsp. *filifolia* and *Senna artemisioides* subsp. *helmsii* over scattered low shrubs of *Ptilotus obovatus* on orange/red clayey sand.

**VA07b:** *Acacia* scattered low trees - Scattered low trees of *Acacia pteraneura* over scattered tall shrubs of *Hakea preissii* over mid shrubland of *Senna* sp. Meekatharra (E. Bailey 1-26), *Senna* sp. Billabong (J.D. Alonzo 721) and *Eremophila* sp. A on red/orange loamy sand.

**VA07c:** *Acacia* scattered low trees - Open tall shrubland of *Acacia fusca* over open mid shrubland of *Eremophila* sp. A over scattered mid chenopod shrubs of *Salsola australis*, *Maireana pyramidata* and *Maireana tomentosa* over scattered mid tussock grasses of *Eragrostis* sp. on red loamy sand.

**VA08:** *Acacia* scattered tall shrubland - Isolated patches of mid shrubs of *Acacia sclerosperma* subsp. *sclerosperma* over scattered low shrubs to open low shrubland of *Frankenia laxiflora*, *Sclerolaena fimbriolata* and *Enchylaena tomentosa* var. *tomentosa* over open low tussock grassland of *Eragrostis eriopoda* and *Enneapogon caerulescens* on orange/red loamy sand with gypsum outcropping.

**VA10:** *Maireana* chenopod shrubland - Scattered mid shrubs of *Lawrenzia helmsii* and *Maireana pyramidata* over low chenopod shrubland of *Atriplex vesicaria* and *Maireana amoena* on red/brown clayey sand.

**VA11:** *Acacia* open tall shrubland - Open tall shrubland of *Acacia fusca* over scattered mid shrubs to open mid shrubland of *Eremophila macmillaniana* and *Eremophila latrobei* subsp. *latrobei* over open low shrubland of *Ptilotus obovatus*, *Solanum lasiophyllum* and *Maireana pyramidata* over very open low tussock grassland of *Aristida contorta* and *Enneapogon caerulescens* on red/orange/white skeletal sandy loam with quartz outcropping.

The following vegetation associations were recorded within the central to northern section of the application area by (MWH, 2017) between 31 January to 2 February 2017:

**VT01:** *Acacia fusca* tall sparse shrubland over *Eremophila macmillaniana* and *Senna glutinosa* subsp. *x luerssenii* mid sparse shrubland over *Ptilotus obovatus* and *Senna artemisioides* subsp. *helmsii* low sparse shrubland on low stony hills.

**VT02:** *Acacia sclerosperma* subsp. *sclerosperma*, *Acacia synchronicia* and *Acacia fusca* tall open shrubland over *Eremophila scoparia* and *Senna artemisioides* subsp. *helmsii* mid sparse shrubland over *Sclerolaena cuneata* and *Sclerolaena diacantha* sparse dwarf chenopod shrubland on stony undulating plains, with *Tecticornia disarticulata* (glaucous form) low sparse samphire shrubland in lower drainage areas.

**VT03:** *Acacia fusca*, *Acacia grasbyi* and *Acacia aptaneura* over *Senna* sp. Meekatharra (E. Bailey 1-26) mid sparse shrubland over *Sclerolaena diacantha* and *Sclerolaena cuneata* dwarf chenopod shrubland on undulating stony plains.

**VT04:** *Acacia fusca* and *Acacia grasbyi* tall sparse shrubland over *Eremophila fraseri* subsp. *fraseri* and *Acacia tetragonophylla* mid sparse shrubland over *Ptilotus obovatus* low sparse shrubland on undulating stony plains.

**VT05:** *Acacia fusca* and *Acacia grasbyi* tall sparse shrubland over *Eremophila latrobei* subsp. *latrobei*, *Senna* sp. Meekatharra (E. Bailey 1-26) and *Ptilotus obovatus* mid to low shrubland over *Maireana triptera* and *Sclerolaena diacantha* dwarf chenopod shrubland on rocky ironstone hill.

**VT06:** *Acacia fusca* tall sparse shrubland over *Eremophila spathulata* mid sparse shrubland over *Ptilotus obovatus* low sparse shrubland on quartz and ironstone stony low slopes and plains.

**VT07:** *Acacia aptaneura* tall open shrubland over *Eremophila scoparia* and *Senna* sp. Meekatharra (E. Bailey 1-26) mid sparse shrubland on low stony rises.

**VT08:** *Acacia fusca* tall sparse shrubland over *Eremophila glutinosa* and *Eremophila latrobei* subsp. *latrobei* mid sparse shrubland over *Senna artemisioides* subsp. *helmsii* and *Ptilotus obovatus* on low rocky quartz hills.

**VT09:** *Acacia paraneura* and *Acacia aptaneura* tall shrubland over *Eremophila glutinosa* and

*Eremophila latrobei* subsp. *latrobei* mid open shrubland over *Cymbopogon ambiguus* isolated clumps of tussock grasses in narrow drainage channels.

**VT10:** *Hakea preissii* tall open shrubland over *Eremophila scoparia* mid sparse shrubland over *Atriplex codonocarpa*, *Sclerolaena diacantha* and *Sclerolaena cuneata* dwarf *chenopod shrubland* on stony undulating plains adjacent to drainage.

**VT11:** Mosaic of mid to tall samphire shrubland dominated by *Tecticornia* species on moist clay. This vegetation comprises a complex array of samphire communities dependant on separate zonation requirements.

The following vegetation associations were recorded within the north-west section of the application area by NVS (2018) between 5 to 6 March 2018

**Open Mulga Shrubland:** Dominant species were *Acacia aneura*, *Acacia mulganeura*, *Acacia victoriae* subsp. *victoriae*, *Senna glutinosa* subsp. *chatelainiana* and *Eremophila fraseri* subsp. *fraseri*.

**BIF Outcrop Vegetation:** Dominant species were *Acacia aneura*, *A. tetragonophylla*, *Psyrdrax rigidula*, *Ptilotus obovatus*, *Eremophila latrobei* subsp. *latrobei* and *Ptilotus rotundifolius*.

**Mulga Creekline shrubland:** Dominant species were *Acacia quadrimarginea*, *A. tetragonophylla*, *A. pteraneura*, *Hibiscus coatesii*, *Eremophila forrestii* subsp. *forrestii*, *Boerhavia repleta*, *Iseilema membranaceum* and *Tragus australianus*.

The following vegetation associations were recorded within the western and north eastern sections of the application area by Spectrum Ecology (2020) between 19 to 21 April 2020;

**D1 (Drainage: drainage line on flat):** *Acacia aptaneura*, *Acacia caesaneura* and *Acacia macraneura* tall open shrubland, over  $\pm$ *Eremophila pantonii*,  $\pm$ *Eremophila youngii* subsp. *youngii* and *Acacia tetragonophylla* mid sparse shrubland, over  $\pm$ *Aristida contorta* and  $\pm$ *Setaria dielsii* low sparse tussock grassland.

**D2 (Drainage: salt pan):** *Tecticornia peltata*, *Tecticornia* sp. 1 and *Tecticornia pergranulata* subsp. *pergranulata* low sparse shrubland, over *Eragrostis pergracilis* low sparse tussock grassland, over *Heliotropium curassavicum* and *Dysphania plantaginella* low isolated clumps of forbs.

**F1 (Flat: plains):** *Acacia aptaneura*,  $\pm$ *Hakea preissii* and  $\pm$ *Acacia ?demissa* tall sparse shrubland, over  $\pm$ *Eremophila fraseri* subsp. *fraseri*, *Acacia tetragonophylla* and  $\pm$ *Santalum lanceolatum* mid sparse shrubland, over  $\pm$ *Enneapogon caerulescens* and  $\pm$ *Aristida contorta* low sparse tussock grassland.

**F2 (Flat: plains):** *Senna glutinosa*, *Acacia synchronicia* and *Rhagodia drummondii* mid sparse shrubland, over *Ptilotus obovatus* and *Solanum lasiophyllum* low sparse shrubland, over *Aristida contorta* and *Enneapogon caerulescens* isolated tussock grasses.

**S1 (Hill: ridges and crests):** *Acacia aptaneura* tall sparse shrubland, over *Senna artemisioides* and *Eremophila macmilliana* mid sparse shrubland, over *Ptilotus obovatus* low sparse shrubland.

The following five vegetation associations were recorded within the amendment application area by Western Ecological (2021) on 5 November 2020:

**VT1:** *Acacia aptaneura* tall sparse shrubland over *Senna artemisioides* subsp. *helmsii*, *S. sp. Meekatharra*, *S. glutinosa* subsp. *chatelainiana* isolated shrubs over *Maireana triptera*, *Ptilotus obovatus*, *Senna sp. Meekatharra*, *S. artemisioides* subsp. *helmsii* low sparse shrubland over low isolated grass tussocks (dried).

**VT2:** *Acacia synchronicia*, *A. aptaneura* isolated low trees over *Eremophila lachnocalyx*, *Senna sp. Meekatharra*, *A. synchronicia* open shrubland over *Dactyloctenium radulans*, *Aristida contorta* low isolated grass tussocks.

**VT3:** *Acacia tetragonophylla*, *A. caesaneura*, *A. aptaneura*, *A. fuscaneura*, *Eremophila longifolia* tall shrubland to tall open shrubland over *Acacia tetragonophylla*, *Eremophila forrestii* subsp. *forrestii*, *Ptilotus obovatus*, *Eremophila fraseri* subsp. *fraseri*, *E. lachnocalyx* open shrubland over *Cymbopogon ambiguus* and *Eriachne flaccida* low open tussock grassland.

**VT4:** *Acacia aptaneura*, *A. tetragonophylla*, *A. grasbyi* isolated tall shrubs or low trees over *Acacia grasbyi*, *Senna sp. Meekatharra*, *Senna artemisioides* subsp. *helmsii*, *Ptilotus obovatus*, *Maireana triptera*, *Sclerolaena cuneata* isolated low shrubs over *Dactyloctenium radulans*, *Aristida contorta*, *Ptilotus aervoides* dried grasses low open tussock grassland.

**VT5:** *Acacia aptaneura* isolated low trees over *Eremophila galeata*, *Acacia synchronicia* isolated shrubs over *Eremophila galeata*, *Senna sp. Meekatharra*, *Senna artemisioides* subsp. *oligophylla* low sparse shrubland.

**Clearing Description**

Nannine Project.  
Big Bell Operations Pty Ltd (Big Bell Gold) proposes to clear up to 1,581.75 hectares of native vegetation within a boundary of approximately 1,691.8 hectares, for the purposes of mineral production and associated activities. The project is located approximately 35 kilometres south-west of Meekatharra, within the Shire of Meekatharra.

**Vegetation Condition**

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).

To;

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).

#### Comment

The vegetation condition was derived from flora and vegetation surveys conducted by MWH (2015; 2017), NVS (2018), Spectrum Ecology (2020) and Western Ecological (2021).

Degraded areas within the application area have resulted from historical mining and grazing (Western Ecological, 2021).

Clearing permit CPS 9070/1 was granted by the Department of Mines, Industry Regulation and Safety on 3 December 2020 and was valid from 26 December 2020 to 25 December 2025. The permit authorised the clearing of up to 1,581.75 hectares of native vegetation within a boundary of approximately 1,616 hectares, for the purposes of mineral production and associated activities.

On 2 March 2021, the Permit Holder applied to amend CPS 9070/1 to increase the permit boundary by approximately 75.8 hectares, to establish a haul road providing an improved access option to the Nannine Mining Area.

### 3. Assessment of application against Clearing Principles

#### Comments

Big Bell Gold has applied to amend the permit to increase the permit boundary by approximately 75.8 hectares, in order to accommodate the construction and maintenance of a haulage road (no more than 30 metres wide) to provide alternative access options to the Nannine mining area and improve existing open pit mining operations (Westgold, 2021). No increase in the amount of approved clearing was requested.

The clearing permit application area is located within the Western Murchison subregion of the Interim Biogeographic Regionalisation for Australia Murchison Bioregion (GIS Database). The Western Murchison subregion is characterised by Mulga low woodlands, often rich in ephemerals (usually with bunch grasses). Surfaces associated with the occluded drainage occur throughout with hummock grasslands on Quaternary sandplains, saltbush shrublands on calcareous soils and Tecticornia low shrublands on saline alluvia (CALM, 2002).

The amendment area is broadly mapped as Beard vegetation association 18, which is consistent with the original permit area (GIS Database). Approximately 99% of the pre-European extent of Beard vegetation association 18 remains uncleared at both the state and bioregional level (Government of Western Australia, 2019). Hence, the vegetation proposed to be cleared does not represent a significant remnant of native vegetation in an area that has been extensively cleared.

Western Ecological (2021) conducted a reconnaissance flora and vegetation survey of the amendment area during November 2021. A total of 44 vascular taxa from eleven families and twenty-three genera were recorded in the area. No Threatened or Priority flora have been recorded within the amendment area (DBCA, 2007-; GIS Database), and none were found during the flora and vegetation surveys (Western Ecological, 2021).

None of the vegetation communities within the application area were identified as a Threatened or Priority Ecological Community (PEC) (GIS Database). The amendment area sits partially within the buffer of the Austin System (Priority 3) PEC, which has been described for the original permit (Spectrum Ecology, 2020) however the amendment area is not within its mapped extent (GIS Database). Furthermore, the vegetation and landform types identified within the amendment area do not correspond with the characteristics of the Austin System PEC, which is described as 'saline stony plains with low rises and drainage foci supporting low halophytic shrublands with scattered Mulga and Snakewood (*Acacia eremaea*)' (Spectrum Ecology, 2020; Western Ecological, 2021).

Analysis of aerial imagery indicates that the vegetation associations and landform types occurring within the amendment area are similar to those occurring within the original permit boundary and are well represented in the region (GIS Database). The amendment area is unlikely to represent an area of higher biodiversity than the original permit area or surrounding areas.

Three fauna habitats were described for the amendment area, as part of the fauna assessment completed by Western Ecological (2021):

- Stony Plains;
- Drainage areas; and
- Cleared (disturbed) areas

Given that the application area is adjacent to an existing operational mine site that is highly disturbed and well vegetated areas of similar native vegetation occur throughout the local area and bioregion (GIS Database; Western Ecological (2021), the vegetation under application is unlikely to provide significant habitat for local fauna species.

A total of 16 fauna species, from 13 families were recorded during the field fauna survey (Western Ecological, 2021). No species of conservation significance were recorded during the field survey and all fauna species recorded were considered relatively common and widespread (Western Ecological, 2021). Two conservation

significant fauna species were targeted during the field survey, the Malleefowl (*Leipoa ocellata*, T) and the Night Parrot (*Pezoporus occidentalis*, T), as the amendment area is part of their known distribution range (DAWE, 2021; DBCA, 2007-). No evidence of these species was observed, and the survey area was considered unsuitable due to a lack of adequate canopy cover and absence of spinifex (Western Ecological, 2021).

The West Coast Mulga Slider (*Lerista eupoda*, P1) is a snake species of conservation significance deemed likely to occur within the application area, based on distribution records and available habitats (DBCA, 2007-; Western Ecological, 2021). However, the species is mobile and the restricted proposed clearing to establish a haulage road is unlikely to impact the conservation status of this species.

There are no permanent watercourses or wetlands within the amendment area (GIS Database). The application area is dissected by two ephemeral drainage lines which have already been intersected by the nearby Great Northern Highway, and the western most drainage line has already been cleared by historical mining (Westgold, 2021). While the mapped vegetation types have not been identified as riparian, potential local impacts to vegetation growing in association with the drainage lines can be minimised by the continued implementation of a vegetation management condition.

Due to the linear nature of the proposed clearing to establish a haul road, and the fact that the ephemeral drainage lines have already been intersected by the Great Northern Highway nearby (Westgold, 2021), the clearing is unlikely to result in appreciable land degradation, degrade surface or groundwater quality, or increase the incidence or intensity of flooding.

The application area is not within or in close proximity to any conservation areas (GIS Database). The nearest DBCA managed land is the former Lakeside ex pastoral lease, located approximately 85 kilometres south-west of the application area, at its nearest point (GIS Database). The proposed clearing is not likely to impact on the environmental values of any conservation area.

Several weed species were identified during previous surveys of the broader project area (Spectrum Ecology, 2020; Westgold, 2021) and these are likely to occur around the amendment area, which is partially disturbed. Weeds have the potential to out-compete native vegetation and reduce biodiversity. Continued implementation of the existing weed management condition may minimise the risk of spread of weeds into the amendment application area.

The vegetation associations, habitat types and landforms found within the amendment area are similar to the original permit area and are well represented in surrounding areas (Western Ecological, 2021; GIS Database). The clearing to be conducted within the amendment application area to construct a haul road is unlikely to have any significant additional impacts.

The amendment application has been assessed against the clearing principles, planning instruments and other matters in accordance with s.51O of the *Environmental Protection Act 1986*. Environmental information has been reviewed, and the assessment of the proposed clearing against the clearing principles remains consistent with the assessment contained in decision report CPS 9070/1.

#### Methodology

CALM (2002)  
DAWE (2021)  
DBCA (2007-)  
Government of Western Australia (2019)  
Spectrum Ecology (2020)  
Western Ecological (2021)  
Westgold (2021)

#### GIS Database:

- DPaW Tenure
- Hydrography, Lakes
- Hydrography, Linear
- IBRA Australia
- Imagery
- Landsystem Rangelands
- Pre-European Vegetation
- Public Drinking Water Source Areas
- Soils, Statewide
- Threatened and Priority Ecological Communities boundaries
- Threatened and Priority Ecological Communities buffers
- Threatened and Priority Flora
- Threatened Fauna

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

### Comments

The amendment application was advertised on 15 March 2021 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim (WC2004/010) over the area under application (DPLH, 2021). This claim has been determined by the Federal Court on behalf of the claimant group (WAD28/2019). 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, 2021). 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 (2020)

## 4. References

- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- DAWE (2021) EPBC Act Protect Matters Search Tool. Department of Agriculture, Water and the Environment. <https://www.environment.gov.au/epbc/protected-matters-search-tool> (Accessed 23 April 2021).
- DBCA (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Biodiversity, Conservation and Attractions. <https://naturemap.dbca.wa.gov.au/> (Accessed 23 April 2021).
- DPLH (2021) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 27 April 2021).
- 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>
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- MWH (2015) Lake Annean Flora and Fauna Assessment. Prepared for Metals X Limited by MWH Australia Pty Ltd, September 2015.
- MWH (2017) Aladdin Project: Reconnaissance Flora and Fauna Assessment. Prepared for Westgold Resources Limited by MWH Australia Pty Ltd, March 2017.
- NVS (2018) Reconnaissance Flora and Vegetation Survey Golden Shamrock Prospect, Central Murchison Gold Project. Prepared for Westgold Resources Limited/Big Bell Gold Operations Pty Ltd, by Native Vegetation Solutions, May 2018.
- Spectrum Ecology (2020) Nannine Mining area Reconnaissance Flora & Level 1 Fauna Assessment. Prepared for Westgold Resources Limited by Spectrum Ecology Pty Ltd, June 2020.
- Western Ecological (2021) Nannine Mining Area and Nannine Haul Road, Reconnaissance Flora and Vegetation Survey and Basic Terrestrial Fauna Survey – Final Report. Prepared for Westgold Resources Limited by Western Ecological Pty Ltd, February 2021.
- Westgold (2021) Supporting additional information received in relation to Big Bell Operations Clearing Permit Application CPS 9070/2. Westgold Resources Limited, 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.

**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.