



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	10242/1
Permit type:	Purpose Permit
Applicant name:	Northern Star Resources Limited
Application received:	15 June 2023
Application area:	350 hectares
Purpose of clearing:	Mineral production and associated activities
Method of clearing:	Mechanical Removal
Tenure:	General Purpose Lease 24/40 Mining Leases 24/462, 24/640, 27/202, 27/493 and 27/497
Location (LGA area/s):	City of Kalgoorlie-Boulder
Colloquial name:	Crossroads Gold Mine Project

1.2. Description of clearing activities

Northern Star Resources Limited proposes to clear up to 350 hectares of native vegetation within a boundary of approximately 385 hectares, for the purpose of mineral production and associated activities. The project is located approximately 18 kilometres north of the City of Kalgoorlie-Boulder, within the City of Kalgoorlie-Boulder.

The application is to allow for the establishment of an open pit mine and associated activities.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	17 August 2023
Decision area:	350 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Mines, Industry Regulation and Safety (DMIRS) on 15 June 2023. DMIRS advertised the application for a public comment for a period of 21 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix D), supporting information provided by the applicant including the results of a flora and vegetation survey, the clearing principles set out in Schedule 5 of the EP Act (Appendix B), proposed avoidance and minimisation measures (Section 3.1), and relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3).

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weed; and
- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.

2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)

Relevant agreements (treatys) considered during the assessment include:

- Japan-Australia Migratory Bird Agreement
- China-Australia Migratory Bird Agreement
- Republic of Korea-Australia Migratory Bird Agreement

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2014)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant has provided the following avoidance and mitigation measures to support this clearing permit application (NSR, 2023a):

- The movement of machines and other vehicles shall be restricted to the limits of the areas to be cleared;
- During site works, areas requiring clearing should be clearly marked and access to other areas restricted to prevent accidental clearing of areas to be retained;
- Topsoil / growth medium vegetation will be stripped and stockpiled separately for later re-use during rehabilitation activities;
- Earth-moving equipment will be free from soil and vegetation prior to and leaving the area to be cleared (wash down facilities are available at the site); and
- Dust suppression activities will be controlled to ensure that surrounding vegetation is not sprayed with saline water.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix A) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix B) identified the impacts of the proposed clearing are limited and able to be managed to be environmentally acceptable with an avoid and minimise, water resources management, and hygiene management conditions.

3.2.1. Biological values - Clearing Principles (a) and (c)

Assessment

A detailed flora and vegetation survey over the application area was conducted by Phoenix Environmental Science on 29 - 30 November 2022. A total of 80 native flora species and six weeds representing 21 families and 45 genera were recorded during the survey (Phoenix, 2023a). Of the 29 significant flora identified from the desktop assessment as possible to occur within the application area, only *Eremophila praecox* (Priority 2) was recorded during the field survey (Phoenix, 2023a). Phoenix (2023a) reported that this species was previously recorded in close proximity to the application area during other flora surveys in the region.

There were 13 individuals of *Eremophila praecox* (P2) identified in four vegetation types within the application area (11 in the application area and two adjacent to the application area boundary) (Phoenix, 2023a). The four vegetation types are mainly comprised by *Eucalyptus* woodlands, termed as EIMs, EIMsMs, EIMsSaf and EIEsTd (refer to Appendix A.1 Site Characteristics), indicating that these vegetation types may be locally significant as they provide habitat for this conservation significant species (Phoenix, 2023a). This species is considered to have a broad distribution and is typically found in low densities in *Eucalyptus* and/or *Casuarina* woodlands over a varied shrub layer (typically *Acacia*, *Eremophila*, *Senna* and *Maireana* species) on flat to undulating plains in red clay loam soils (Phoenix, 2023a). These vegetation types were found widespread in the surrounding

landscape; therefore, it is unlikely that the proposed clearing activities within the application area would impose significant impacts on the habitat of *Eremophila praecox* (Phoenix, 2023a). Moreover, Phoenix (2023a) reported that the known population of this species exceeds 481 individuals, as they recorded this species in previous target surveys in the region. The 13 individuals recorded in the current survey increases the known population to be in excess of 494 individuals, with the 11 recorded in the study area representing 2.2% of the known population (Phoenix, 2023a). The proponent also provided further information regarding this species in response to DMIRS queries, and advised that approximately 125 individuals are located within conservation reserves (Bullock Holes Timber Reserve (R 19825), Lakeside Timber Reserve (R 19214) and Kurrawang Nature Reserve (R 35453) (NSR, 2023b). Furthermore, a spatial file of this species records has been provided by NSR (2023b) to reveal its broad distribution throughout the region as well as its current numbers (live), given the majority of the records remain intact as no clearing activities occurred at their respective locations (NSR, 2023b). NSR (2023b) intend to use the data and the survey reports to support an application to reclassify *Eremophila praecox* to a lesser conservation status.

Following desktop analysis of the significant flora likelihood of occurrence, four Priority flora species were considered as possible to occur within the application area: *Ptilotus procumbens* (P1), *Elachanthus pusillus* (P2), *Notisia intonsa* (P3) and *Streptoglossa* aff. *cylindriceps* (sp. nov.) (Phoenix, 2023a).

Ptilotus procumbens is known from four locations in the Coolgardie and Murchison bioregions (Phoenix, 2023a; Western Australian Herbarium, 1998-). Similarly, *Elachanthus pusillus* is only known from seven records, mostly historical, located within the Coolgardie bioregion (Phoenix, 2023a; Western Australian Herbarium, 1998-). However, the detailed flora survey did not record these species within the application area. *Ptilotus procumbens* occurs within, but not limited to, Open *Acacia* shrubland over mixed forbland in red clay, in deep red clay and in mulga scrub on plain with lateritic gravel (Phoenix, 2023a; Western Australian Herbarium, 1998). *Elachanthus pusillus* occurs within sparse *Eucalyptus* spp. woodland over open mixed shrubland over open mixed herbs or Chenopod shrubland in bare lateritic gravel – red loamy clay soils or red loam over limestone on low plain (Phoenix, 2023a; Western Australian Herbarium, 1998). Therefore, the habitats supporting these two species are not associated with ecologically significant vegetation types, nor are they restricted to a specific landform within the application area. Moreover, some of these species records are located within Nature Reserves (Western Australian Herbarium, 1998-). Therefore, given the above circumstances, including the results of the detailed flora survey, the proposed clearing is unlikely to impact the status of these species if present.

According to Phoenix (2023a) and Western Australian Herbarium (1998-), *Notisia intonsa* has been recorded in the Avon Wheatbelt, Coolgardie, Esperance Plains, Mallee and the Murchison bioregions as well as in the Mount Manning – Helena and Aurora Ranges Conservation Park (Phoenix, 2023a; Western Australian Herbarium, 1998-). There are 25 records of *Notisia intonsa* (Western Australian Herbarium, 1998-) ranging from isolated to a few plants (Phoenix, 2023a). According to Phoenix (2023a), more than 1800 individuals have been recorded in recent surveys in the region.

Streptoglossa aff. *Cylindriceps* (sp. nov.) has been recorded in four recent surveys, located approximately 180 kilometres west-southwest, 68 kilometres south, 160 kilometres northwest and 1.9 kilometres south of the study area (Phoenix, 2023a). These surveys recorded the species along drainage lines and on undulating depressions (crabhole gilgai), and one survey recorded three populations comprising a total of 1,290 plants (Phoenix, 2023a).

Six introduced flora were identified within the application area during the survey, none of which are listed as a Declared Plant under the *Biosecurity and Agriculture Management Act 2007* or a Weed of National Significance (WoNS):

- *Centaurea melitensis* (Maltese star-thistle);
- *Monoculus monstrosus* (One-eye monster);
- *Sonchus oleraceus* (Common sowthistle);
- *Carrichtera annua* (Wards Weed);
- *Medicago laciniata* (Cutleaf medic); and
- *Salvia verbenaca* (Wild Sage).

Conclusion

Based on the above assessment, it is considered that the impacts of the proposed clearing on potential habitats for Priority flora are not likely to be significant if avoidance, mitigation and management measures are implemented.

For the reasons set out above, it is considered that the impacts of the proposed clearing on potential habitats for conservation significant flora species can be managed with conditions to be environmentally acceptable. There is potential for weeds being present within the application area and the proposed clearing has the potential to exacerbate the spread of weeds.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;

3.2.2. Biological values (fauna) - Clearing Principle (b)

A basic and targeted fauna survey was undertaken over the application area by Phoenix Environmental Science on 15 - 17 November 2022. During the survey, a targeted search for habitat and presence of the Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina* - Critically Endangered under the EPBC Act and BC Act) through the occurrence of sugar ants (*Camponotus* sp. nr. *terebrans*), and the Inland Hairstreak Butterfly (*Jalmenus aridus* – Priority 1) were also conducted (NSR, 2023a; Phoenix, 2023b).

A total of 48 vertebrate species were recorded within or just outside the application area, represented by 13 reptiles, 28 birds, and seven mammals, of which three were introduced species; however, no conservation significant vertebrate fauna species were recorded (Phoenix, 2023b).

The Arid Bronze Azure Butterfly (ABAB) is difficult to survey due to the adults being present only for a few weeks each year and may disperse through habitat unsuitable for breeding (Phoenix, 2023b). Caterpillars of the ABAB are found only within nests of a sugar ant *Camponotus* sp. nr. *terebrans*, associated with smooth-barked eucalypt woodlands (Phoenix, 2023b). The survey results concluded that the application area does not represent habitat for the ABAB due to the absence of *Camponotus* sp. nr. *terebrans* (Phoenix, 2023b).

Approximately 16.2 hectares of the application area are potentially suitable habitat for *Jalmenus aridus*; however, this species was not recorded, and given the target search was adequately undertaken, it is unlikely that this species is present within the project area (NSR, 2023a; Phoenix, 2023b).

The survey did not identify current or past signs of Malleefowl (*Leipoa ocellata* - Vulnerable under the BC Act and EPBC Act) presence within the application area, which was considered to have medium to low suitability for this species (Phoenix, 2023b). The woodland canopy is relatively sparse within the application area (limiting shade and shelter from aerial predators), the leaf litter has low biomass and is generally disturbed by surface runoff during storms (Phoenix, 2023b). Consequently, Malleefowl may occasionally use the application area for foraging or dispersal but not for breeding purposes (Phoenix, 2023b).

Phoenix (2023b) also conducted a Short-Range Endemic (SRE) invertebrate survey over the application area and it was concluded that all habitats within the study area have low suitability for SRE invertebrates. The application area does not present south-facing slopes, rock outcrops, permanent drainage lines, water-retaining soils, or salt lakes (Phoenix, 2023b). The most suitable habitat for SRE found within the study area is the Eucalypt and Casuarina open forest located in shallow depression patch at site CF008 due to its lower position in the landscape and denser vegetation structure (Phoenix, 2023b).

A total of 16 specimens of SRE groups were collected within the study area, including four pseudoscorpion taxa, one scorpion, one centipede, and one isopod (Phoenix, 2023b). Five of these species were considered to be potential SREs; including three pseudoscorpions (*Synsphyronus dorothyae*, *Solinus* sp. indet, *Beierolpium* sp. '8/4') and a single isopod species (*Buddelundia* cf. *frontosa*). According to Phoenix (2023b), *Synsphyronus dorothyae* and *Buddelundia* cf. *frontosa* are known from outside of the application area, whereas *Solinus* sp. indet, *Beierolpium* sp. '8/4' have not been identified to species level but are from groups with known restricted representatives, and a centipede is of uncertain SRE status due to poor taxonomic resolution. However, the SRE habitats of the application area are generally widespread and do not have features to support a remnant habitat for SREs nor do they present geographical barriers inhibiting species dispersal (Phoenix, 2023b).

Therefore, the application area is unlikely to be considered critical habitat for conservation significant fauna species (either vertebrate or invertebrate) (Phoenix, 2023b).

Conclusion:

Based on the above assessment, the proposed clearing is unlikely to have impacts on conservation significant fauna species or on critical habitats that support the survival of these species.

Conditions:

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 4 July 2023 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 (Marlinyu Ghoorlie WC2017/007) over the area under application (DPLH, 2023). 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 Cultural Heritage sites within the application area (DPLH, 2023). It is the proponent's responsibility to comply with the *Aboriginal Cultural Heritage Act 2021* and ensure that no Aboriginal Cultural Heritage sites are damaged through the clearing process.

Other relevant authorisations required for the proposed land use include:

- A Mining Proposal / Mine Closure Plan approved under the *Mining Act 1978*.

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.

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The project is located approximately 18 kilometres north of the City of Kalgoorlie-Boulder, within the City of Kalgoorlie-Boulder in the extensive land use zone (GIS Database). The predominant land use in the region is grazing of native pastures, conservation and mining activities.
Ecological linkage & Conservation areas	According to available databases, the application area is not considered an ecological linkage (GIS Database). The nearest conservation area is Sandalwood Timber Reserve which is located approximately 24 kilometres east of the application area (GIS Database).
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation associations (GIS Database):</p> <p>20: Low woodland; mulga mixed with <i>Allocasuarina cristata</i> & <i>Eucalyptus</i> sp. Most of the application area (approximately 98%) is within this type of vegetation;</p> <p>468: Medium woodland; salmon gum & goldfields blackbutt; and</p> <p>540: Succulent steppe with open low woodland; sheoak over saltbush.</p> <p>A detailed flora and vegetation survey was conducted over the application area by Phoenix (2023), and the following vegetation associations were recorded within the application area:</p> <p>EIMs (31.3%): Mid woodlands to forests of <i>Eucalyptus lesouefii</i>, with a mosaic of mid to low woodlands of <i>E. longicornis</i>, <i>E. salubris</i> or <i>E. oleosa</i> subsp. <i>oleosa</i> over a mid to low open shrubland of <i>Maireana sedifolia</i>, <i>Eremophila scoparia</i> and <i>Scaevola spinescens</i>;</p> <p>Ms (1.1%): Mid open shrubland of <i>Maireana sedifolia</i>, <i>Eremophila scoparia</i> and <i>E. parvifolia</i> subsp. <i>auricampa</i>;</p> <p>EIMsSaf (6.9%): Mid woodland of <i>Eucalyptus lesouefii</i> over a mid sparse shrubland of <i>Maireana sedifolia</i> and <i>Eremophila scoparia</i> over a low sparse shrubland of <i>Senna artemisioides</i> subsp. <i>filifolia</i>, <i>Scaevola spinescens</i> and <i>Cratystylis conocephala</i>;</p> <p>EIEsMs (3.9%): Low woodland to open forest of <i>Eucalyptus lesouefii</i>, <i>Eucalyptus salubris</i> and <i>Casuarina pauper</i> over a mid open shrubland of <i>Eremophila scoparia</i> over a low open shrubland of <i>Maireana sedifolia</i>, <i>Senna artemisioides</i> subsp. <i>filifolia</i> and <i>Acacia nyssophylla</i>;</p> <p>EIMsMs (11.7%): Mid <i>Eucalyptus lesouefii</i> and <i>E. oleosa</i> subsp. <i>oleosa</i> woodland over tall open <i>Melaleuca sheathiana</i> shrubland over isolated low <i>Maireana sedifolia</i>, <i>Olearia muelleri</i> and <i>Scaevola spinescens</i> shrubs; and</p> <p>EIEsTd (45.1%): Mid open woodland of <i>Eucalyptus lesouefii</i> or <i>E. salubris</i> over mid isolated shrubs of <i>Eremophila scoparia</i> over a low open shrubland of <i>Tecticornia disarticulata</i>, <i>Atriplex vesicaria</i> and <i>Maireana sedifolia</i>.</p>
Vegetation condition	<p>The vegetation survey (Phoenix, 2023) indicates the vegetation within the proposed clearing area is in good to degraded condition (Trudgen, 1988), described as:</p> <ul style="list-style-type: none"> Excellent: Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement. <p>To</p> <ul style="list-style-type: none"> Degraded: Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species. <p>The full (Trudgen, 1988) condition rating scale is provided in Appendix C.</p>
Climate and landform	The application area is mapped within elevations of 340 to 350 meters AHD (GIS Database). The climate of the region is semi-arid, and the annual rainfall average of approximately 264.6 millimetres (BoM, 2023).
Soil description & Land degradation risk	The soil is mapped as part of the Gumland land system (265Gm), described as extensive pedeplains supporting eucalypt woodlands with halophytic and non-halophytic shrub understoreys (DPIRD, 2023). This land system may be susceptible to soil erosion where vegetation is cleared or protective stony mantles are disturbed, particularly within drainage areas (DPIRD, 2023).
Waterbodies & Hydrogeography	According to the field survey and available databases, no ephemeral or perennial watercourses transect the area proposed to be cleared (Phoenix, 2023a; GIS Database). The application area is not within a Public Drinking Water Source Area (GIS Database). The mapped groundwater salinity is 14000 - 35000 milligrams per litre total dissolved solids which is described as saline (GIS Database).

Characteristic	Details
Flora	Detailed flora and vegetation survey recorded one Priority species (P1) and considered other four conservation significant flora species as possible to occur within the application area (Phoenix, 2023a).
Ecological communities	There are no mapped Threatened or Priority Ecological Communities (TEC/PEC) within the application area (Phoenix, 2023a; GIS Database). The closest TEC is the Emu Land System (P3) located approximately 25 kilometres east of the application area.
Fauna	A basic fauna survey undertaken by Phoenix (2023b) did not record any conservation significant fauna species within the application area. The application area does not contain any locally restricted habitat types for fauna (Phoenix, 2023b).

A.2. Flora analysis table

Flora analysis of records within 50 kilometres of the application area their likelihood of occurrence (Phoenix, 2023a).

Species	Status	Likelihood of occurrence
<i>Acacia epedunculata</i>	P1 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest record is almost 25 km away
<i>Calandrinia lefroyensis</i>	P1 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is more than 20 km away
<i>Eremophila xantholaemus</i>	P1 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is more than 25 km away
<i>Phebalium appressum</i>	P1 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is more than 45 km away
<i>Ptilotus procumbens</i>	P1 (DBCA list)	Possible, there is suitable habitat in the study area
<i>Ptilotus rigidus</i>	P1 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is more than 20 km away
<i>Ptilotus</i> sp. Kalgoorlie (J. Jackson & B. Moyle 260)	P1 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is more than 15 km away
<i>Ricinocarpos digynus</i>	P1 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is more than 30 km away
<i>Tecticornia flabelliformis</i>	P1 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is more than 40 km away
<i>Elachanthus pusillus</i>	P2 (DBCA list)	Possible, there is suitable habitat in the study area
<i>Eremophila praecox</i>	P2 (DBCA list)	Recorded
<i>Goodenia salina</i>	P2 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is more than 30 km away
<i>Hakea rigida</i>	P2 (DBCA list)	Unlikely, lack of suitable habitat in study area and closest record is more than 40 km away
<i>Allocasuarina eriochlamys</i> subsp. <i>grossa</i>	P3 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest record is more than 15 km away
<i>Alyxia tetanifolia</i>	P3 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is more than 25 km away
<i>Angianthus prostratus</i>	P3 (DBCA list)	Unlikely, lack of suitable habitat in the study area despite a record in close proximity to study area
<i>Austrostipa turbinata</i>	P3 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is more than 40 km away
<i>Chrysocephalum apiculatum</i> subsp. <i>norsemanense</i>	P3 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is almost 50 km away
<i>Cyathostemon verrucosus</i>	P3 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is almost 15 km away
<i>Gompholobium cinereum</i>	P3 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is more than 40 km away
<i>Isolepis australiensis</i>	P3 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is more than 30 km away
<i>Lepidium fasciculatum</i>	P3 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest record is more than 15 km away
<i>Melaleuca coccinea</i>	P3 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is more than 20 km away
<i>Notisia intonsa</i>	P3 (DBCA list)	Possible, there is suitable habitat in the study area

Species	Status	Likelihood of occurrence
<i>Eremophila caerulea</i> subsp. <i>merrallii</i>	P4 (DBCA list)	Unlikely, despite suitable habitat in the study area the closest record is almost 40 km away and the study area is outside of the recorded distribution of the species
<i>Eucalyptus jutsonii</i> subsp. <i>jutsonii</i>	P4 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest records is more than 30 km away
<i>Eucalyptus x brachyphylla</i>	P4 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest record is more than 15 km away
<i>Frankenia glomerata</i>	P4 (DBCA list)	Unlikely, lack of suitable habitat in the study area and closest record is more than 15 km away
<i>Streptoglossa aff. cylindriceps</i>	sp. nov.	Possible, there is suitable habitat in the study area

A.3. Fauna analysis table

Likelihood of occurrence for significant vertebrate fauna identified in the desktop review (Phoenix, 2023b).

Species	Status	Likelihood of occurrence
<i>Egernia stokesii badia</i> Western Spiny-tailed Skink	EN (EPBC Act), VU (BC Act)	Unlikely, not native to region and no suitable logpile or granite habitat
<i>Leipoa ocellata</i> Malleefowl	VU (EPBC & BC Acts)	Possible; may occur intermittently as part of wider individual foraging range or during dispersal
<i>Oxyura australis</i> Blue-billed Duck	P4 (DBCA list)	Unlikely, no suitable aquatic habitat
<i>Apus pacificus</i> Fork-tailed Swift	Mig (EPBC & BC Acts)	Likely as occasional visitor, aerial species not limited by terrestrial habitat
<i>Thinornis rubricollis</i> Hooded Plover	P4 (DBCA list)	Unlikely, no suitable salt lake/marsh habitat
<i>Actitis hypoleucos</i> Common Sandpiper	Mig (EPBC & BC Acts)	Unlikely, no suitable salt lake/marsh habitat
<i>Calidris acuminata</i> Sharp-tailed Sandpiper	Mig (EPBC & BC Acts)	Unlikely, no suitable salt lake/marsh habitat
<i>Calidris alba</i> Sanderling	Mig (EPBC & BC Acts)	Unlikely, no suitable salt lake/marsh habitat
<i>Calidris ferruginea</i> Curlew Sandpiper	CR (EPBC & BC Acts), Mig (EPBC Act)	Unlikely, no suitable salt lake/marsh habitat
<i>Calidris melanotos</i>	Mig (EPBC & BC Acts)	Unlikely, no suitable salt lake/marsh habitat
Pectoral Sandpiper		
<i>Calidris ruficollis</i> Red-necked Stint	Mig (EPBC & BC Acts)	Unlikely, no suitable salt lake/marsh habitat
<i>Limosa limosa</i> Black-tailed Godwit	Mig (EPBC & BC Acts)	Unlikely, no suitable salt lake/marsh habitat
<i>Tringa brevipes</i> Grey-tailed Tattler	Mig (EPBC & BC Acts), P4 (DBCA list)	Unlikely, no suitable salt lake/marsh habitat
<i>Tringa glareola</i> Wood Sandpiper	Mig (EPBC & BC Acts)	Unlikely, no suitable salt lake/marsh habitat
<i>Tringa nebularia</i> Common Greenshank	Mig (EPBC & BC Acts)	Unlikely, no suitable salt lake/marsh habitat
<i>Tringa stagnatilis</i> Marsh Sandpiper	Mig (EPBC & BC Acts)	Unlikely, no suitable salt lake/marsh habitat
<i>Plegadis falcinellus</i> Glossy Ibis	Mig (EPBC & BC Acts)	Unlikely, no suitable salt lake/marsh habitat

<i>Falco hypoleucos</i> Grey Falcon	VU (BC Act)	Possible, open woodland habitats potentially suitable; rarely recorded in southern WA but may be occasional visitor
<i>Falco peregrinus</i> Peregrine Falcon	OS (BC Act)	Possible; study area does not contain preferred breeding habitat, but all habitats suitable for foraging as part of wide individual home range
<i>Calyptorhynchus latirostris</i> Carnaby's Black Cockatoo	EN (EPBC & BC Acts)	Unlikely; outside known distribution (Kalgoorlie records are outliers) and no suitable foraging or nesting habitat
<i>Pezoporus occidentalis</i> Night Parrot	CR (EPBC & BC Acts)	Unlikely; far south of current known range, no suitable habitat (<i>Triodia</i> patches in study area are too low for roosting/nesting)
<i>Platycercus icterotis xanthogenys</i> Western Rosella (inland)	P4 (DBC list)	Possible, but habitat likely unsuitable for breeding due to historical clearing (lack of adequate tree hollows)
<i>Polytelis alexandrae</i> Princess Parrot	VU (EPBC Act), P4 (DBC list)	Possible, as occasional visitor during irruptions from core range to north
<i>Amytornis t. textilis</i> Western Grasswren	P4 (DBC list)	Unlikely; chenopod shrubland potentially suitable habitat but regionally extinct (currently only in Shark Bay region)
<i>Motacilla cinerea</i> Grey Wagtail	Mig (EPBC & BC Acts)	Unlikely, no suitable creek habitat
<i>Dasyurus geoffroyi</i> Western Quoll	VU (EPBC & BC Acts)	Possible visitor; woodland habitat could support foraging and dispersal, but suitable refugia (rocky breakaway, hollow logs etc.) appear to be absent
<i>Myrmecobius fasciatus</i> Numbat	EN (EPBC & BC Acts)	Unlikely; regionally extinct, and no suitable refugia (hollow logs)
<i>Macrotis lagotis</i> Greater Bilby	VU (EPBC & BC Acts)	Unlikely; regionally extinct since 1970s or earlier
<i>Nyctophilus major tor</i> Central Long-eared Bat	P3 (DBC list)	Possible; eucalypt/Casuarina woodlands may be used for foraging but provide few suitable refugia due to clearing

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u></p> <p>A detailed flora and vegetation survey over the application area did not identify any Threatened flora within the application area (Phoenix, 2023a). However, it recorded one Priority 1 flora species and identified four other priority flora taxa as possible to occur (Phoenix, 2023a).</p> <p>No Threatened or Priority Ecological Communities were identified within the application area (Phoenix 2023a; GIS Database).</p>	May be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (b):</u> "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."</p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared does not contain critical or significant habitat for conservation significant fauna (NSR, 2023a; Phoenix, 2023b).</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<p><u>Principle (c):</u> "Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."</p> <p><u>Assessment:</u></p> <p>There are no known records of Threatened flora within the application area (GIS Database). A detailed flora survey of the application area did not record any species of Threatened flora, and the vegetation proposed to be cleared is not expected to support any species of Threatened flora (Phoenix, 2023b).</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared does not contain known records of Threatened Ecological Communities (TECs) located within application area (Phoenix, 2023a; GIS Database).</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The application area falls within the Murchison Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the IBRA Murchison Bioregion (Government of Western Australia, 2019).</p> <p>The majority of the application area is broadly mapped as Beard vegetation association 20, and very small sections are mapped as 468 and 540 (GIS Database). These vegetation associations have not been extensively cleared as approximately 99% of the pre-European extent of these vegetation associations remain uncleared at both the state and bioregional level (Government of Western Australia, 2019). The permit area does not contain any remnants nor does it form part of any remnants in the local area (GIS Database).</p>	Not at variance	No
<p><u>Principle (h):</u> <i>“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></p> <p><u>Assessment:</u></p> <p>There are no conservation areas in the vicinity of the application area. The nearest DBCA managed land is the Sandalwood Timber Reserve which is located approximately 24 kilometres east of the application area (GIS Database). The proposed clearing is unlikely to impact on the environmental values of any conservation area.</p>	Not at variance	No
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>There are no permanent watercourses, wetlands or minor drainage lines within the area proposed to clear (NSR, 2023a; GIS Database). Therefore, the proposed clearing is unlikely to impact vegetation growing in association with any watercourse or wetland.</p>	Not at variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The mapped soils have moderate to high susceptibility to erosion where vegetation is cleared or protective stony mantles are disturbed, particularly within drainage areas (DPIRD, 2023). Even though the application area does not present watercourse, the proposed clearing of 350 hectares of vegetation and bare soils may lead to some risk of wind erosion following the removal vegetation. Potential land degradation as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.</p>	May be at variance	No
<p><u>Principle (i):</u> <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.”</i></p> <p><u>Assessment:</u></p>	Not at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Given no permanent water courses, wetlands, or Public Drinking Water Source Areas are recorded within the application area (GIS Database), the proposed clearing is unlikely to impact surface or ground water quality.		
<p><u>Principle (j):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</p> <p><u>Assessment:</u></p> <p>The climate of the region is semi-arid, with a low average annual rainfall of approximately 264.6 millimetres (BoM, 2023). Therefore, surface water flow is likely to be low during normal seasonal rains. Furthermore, the average evaporation rate over the application area is approximately 2,400 millimetres (BoM, 2023), hence, the surface water is likely to evaporate quickly after usual rainfall events. Therefore, the proposed clearing is unlikely to cause, or exacerbate, the incidence or intensity of flooding.</p>	Not likely to be at variance	No

Appendix C. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation’s ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Trudgen, M.E. (1991) *Vegetation condition scale* in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

Measuring vegetation condition for the Eremaean and Northern Botanical Provinces (Trudgen, 1991)

Condition	Description
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Very poor	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or ‘parkland cleared’ with their flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Sources of information

D.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- Clearing Regulations – Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines

- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- Pre-European Vegetation Statistics
- Interim Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

D.2. References

- Bureau of Meteorology (BoM) (2023) Bureau of Meteorology Website – Climate Data Online, Kalgoorlie-Boulder Airport. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 3 August 2023).
- Department of Planning, Lands and Heritage (DPLH) (2023) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 3 August 2023).
- Department of Primary Industries and Regional Development (DPIRD) (2023) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. URL: <https://dpiird.maps.arcgis.com/apps/webappviewer/index.html?id=662e8cbf2def492381fc915aaf3c6a0f> (Accessed 7 August 2023).
- Department of Water and Environmental Regulation (DWER) (2021) Procedure: Native vegetation clearing permits. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.pdf
- Environmental Protection Authority (EPA) (2016) Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment. Available from: http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf
- Environmental Protection Authority (EPA) (2020) Technical Guidance – Terrestrial Fauna Surveys. Available from: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/2020.09.17%20-%20EPA%20Technical%20Guidance%20-%20Vertebrate%20Fauna%20Surveys%20-%20Final.pdf
- 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. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Northern Star Resources Limited (NSR) (2023a) Crossroads Gold Mine Project application for clearing permit within General Purpose Lease 24/40, and Mining Leases 24/462, 24/640, 27/202, 27/493 and 27/497.
- Northern Star Resources Limited (NSR) (2023b) Additional information in support to the clearing permit CPS 10242/1 - Crossroads Project. Prepared by Northern Star Resources Limited, August 2023.
- Phoenix (2023a) Detailed flora and vegetation survey for the Crossroads Project. Prepared for Northern Star Resources Ltd by Phoenix Environmental Sciences Pty Ltd, May 2023.
- Phoenix (2023b) Basic and Targeted Fauna Survey for the Crossroads Project. Prepared for Northern Star Resources Ltd by Phoenix Environmental Sciences Pty Ltd, January 2023.
- Trudgen, M.E. (1991) Vegetation condition scale in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.
- Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 7 August 2023).

4. Glossary

Acronyms:

BC Act	<i>Biodiversity Conservation Act 2016</i> , Western Australia
BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DCCEEW	Department of Climate Change, Energy, the Environment and Water, Australian Government

DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia
DMP	Department of Mines and Petroleum, Western Australia (now DMIRS)
DoEE	Department of the Environment and Energy (now DCCEE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora (now known as Threatened Flora)
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , Western Australia
EPA	Environmental Protection Authority, 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:

{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.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened 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 the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.