



# Clearing Permit Decision Report

## 1. Application details and outcomes

### 1.1. Permit application details

<b>Permit number:</b>	10290/1
<b>Permit type:</b>	Area Permit
<b>Applicant name:</b>	Northern Star Resources Limited
<b>Application received:</b>	2 August 2023
<b>Application area:</b>	97.8 hectares
<b>Purpose of clearing:</b>	Development and construction of a regional core shed and storage facilities.
<b>Method of clearing:</b>	Mechanical Removal
<b>Tenure:</b>	Mining Lease 26/61
<b>Location (LGA area/s):</b>	City of Kalgoorlie-Boulder
<b>Colloquial name:</b>	NSR Regional Core Yard

### 1.2. Description of clearing activities

Northern Star Resources Limited proposes to clear up to 97.8 hectares of native vegetation within the same size boundary, for the purpose of mineral 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 development and construction of a regional core shed and storage facilities associated with mineral production.

### 1.3. Decision on application and key considerations

<b>Decision:</b>	Grant
<b>Decision date:</b>	12 October 2023
<b>Decision area:</b>	97.8 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 2 August 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;
- potential impacts to an ephemeral drainage line, and consequently on surface water flow; and
- potential land degradation in the form of wind or water erosion.

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
- avoid impacts to riparian vegetation and maintain surface water flow;
- staged clearing to minimise wind erosion; 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

No evidence of avoidance or mitigation measures was provided to support the application.

### 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.

### 3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 14 August 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>468: Medium woodland; salmon gum &amp; goldfields blackbutt; and</p> <p>540: Succulent steppe with open low woodland; sheoak over saltbush.</p> <p>A reconnaissance flora and vegetation survey were conducted over the application area by Phoenix (2023), and the following vegetation associations were recorded within the application area:</p> <ul style="list-style-type: none"> <li>• <b>EsppEsMs:</b> Low to <i>Mid Eucalyptus woodland</i> with combinations of the presence of <i>E. salmonophloia</i>, <i>E. salubris</i> and <i>E. lesouefii</i>, over sparse to open <i>Eremophila scoparia</i>, <i>Maireana sedifolia</i> and <i>Senna artemisioides</i> subsp. <i>filifolia</i> shrubland;</li> <li>• <b>EtEsMs:</b> Mid open <i>Eucalyptus transcontinentalis</i> woodland over mid open <i>Eremophila scoparia</i>, <i>Maireana sedifolia</i> and <i>Senna artemisioides</i> subsp. <i>filifolia</i> shrubland;</li> <li>• <b>LaEsMs:</b> Mid open <i>Lycium australe</i>, <i>Maireana sedifolia</i> and <i>Eremophila scoparia</i> shrubland; and</li> <li>• <b>MsAvCa:</b> Mid open <i>Maireana sedifolia</i>, <i>M. pyramidata</i> and <i>Atriplex vesicaria</i> shrubland over low sparse <i>*Carrichtera annua</i> forbland.</li> </ul>
Vegetation condition	<p>The vegetation survey (Phoenix, 2023a) indicates the vegetation within the proposed clearing area is in good to degraded condition (Trudgen, 1991), described as:</p> <ul style="list-style-type: none"> <li>• 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.</li> </ul> <p>To</p> <ul style="list-style-type: none"> <li>• 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.</li> </ul> <p>The full (Trudgen, 1991) condition rating scale is provided in Appendix C.</p>
Climate and landform	The application area is mapped within elevations of 360 to 380 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	<p>The soil is mapped as part of the Gumland land system and, to a lesser extent, the Moriarty and Monger land systems, detailed below:</p> <ul style="list-style-type: none"> <li>• <b>Gumland land system:</b> alluvial plains, drainage tracts and foci of the Gumland land system are susceptible to erosion if perennial shrub cover is substantially reduced or if protective mantles are disturbed. Poorly developed infrastructure, such as track and fencelines across sheetwash and alluvial plains can result in concentrated water flows and cause erosion incision.</li> <li>• <b>Moriarty Land System:</b> described as low greenstone rises and stony plains, supporting chenopod shrublands with patchy eucalypt overstory. The low rises, alluvial plains and narrow drainage tracts in this land system are moderately susceptible to water erosion if the perennial shrub cover is substantially reduced or the soil surface disturbed; and</li> <li>• <b>Monger Land System:</b> described as low rises, breakaways and very gently undulating plains with ironstone gravel mantles, supporting eucalypt woodlands, dissected by saline alluvial tracts, supporting halophytic shrublands. Erosional and depositional surfaces with infrequent low rises and breakaway back slopes grading into very gently undulating plains with abundant ironstone gravel mantles. This land system is generally not susceptible to erosion (GIS Database).</li> </ul>
Waterbodies & Hydrogeography	According to the field survey and available databases, four ephemeral 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 14,000 – 35,000 milligrams per litre total dissolved solids which is described as saline (GIS Database).

Characteristic	Details
Flora	The reconnaissance flora and vegetation survey recorded one Priority species (P1) 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 did not record any conservation significant fauna species within the application area (Phoenix, 2022; 2023a). The application area does not contain any locally restricted habitat types for fauna (Phoenix, 2022; 2023a).

## A.2. Flora analysis table

Flora analysis of records within 20 kilometres of the application area their likelihood of occurrence (GIS Database).

Species name	Conservation status	Distance of closest record to application area (km)	Suitable habitat features? [Y/N]	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Eremophila xantholaemus</i>	1	<20	N	2	Y
<i>Ptilotus procumbens</i>	1	<20	N	1	Y
<i>Rhodanthe uniflora</i>	1	<20	Y	1	Y
<i>Elachanthus pusillus</i>	2	2	N	1	Y
<i>Eremophila praecox</i>	2	0.6	Y	33	Y
<i>Goodenia salina</i>	2	<20	Y	1	Y
<i>Alyxia tetanifolia</i>	3	<20	N	4	Y
<i>Angianthus prostratus</i>	3	<20	Y	1	Y
<i>Cyathostemon verrucosus</i>	3	2	N	1	Y
<i>Isolepis australiensis</i>	3	<20	N	1	Y
<i>Lepidium fasciculatum</i>	3	2.5	N	1	Y
<i>Melaleuca coccinea</i>	3	<20	Y	1	Y
<i>Xanthoparmelia dayiana</i>	3	10	Y	2	Y
<i>Eucalyptus xbrachyphylla</i>	4	3.5	N	1	Y
<i>Frankenia glomerata</i>	4	2	N	1	Y

## Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<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 reconnaissance flora and vegetation survey over the application area recorded 53 flora species but none identified as a Threatened flora (Phoenix, 2023a). Only one Priority 2 flora species (<i>Eremophila praecox</i>) was recorded within the application area, accounting for 11 individuals (Phoenix, 2023a). However, this species was recorded in high numbers within the region (Phoenix, 2023a).</p> <p><i>Eremophila praecox</i> (P2) was identified in two vegetation types within the application area (EtEsMs and EspEsMs, 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; 2023b). However, this species is considered to have a broad distribution and is typically found in low densities in <i>Eucalyptus</i> and/or <i>Casuarina</i> woodlands over a varied shrub layer (typically <i>Acacia</i>, <i>Eremophila</i>, <i>Senna</i> and <i>Maireana</i> species) on flat to undulating plains in red clay loam soils (Phoenix, 2023b). 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</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><i>Eremophila praecox</i> (Phoenix, 2023b). Moreover, NRS (2023) and Phoenix (2023b) reported that the known population of this species may exceed 369 individuals, as they recorded this species in previous target surveys in the region. 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, 2023a; DMIRS, 2023). Furthermore, a spatial file of this species records has been provided by NSR 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 (DMIRS, 2023). Considering the individuals surveyed by Phoenix and the records within nature Reserves, there are approximately 494 individuals regionally (NRS, 2023; Phoenix, 2023b).</p> <p>Taking into account potential impacts of this native vegetation clearing application (CPS 10290/1) and a recent clearing permit approval for NRS (CPS10242/1) on this flora species, there will be a potential impact of 22 individuals of <i>Eremophila praecox</i>, reducing the known regional population to 472 individuals (NRS, 2023). The cumulative impact of these two permits accounts for a loss of approximately 4.45% regionally and approximately 6.34% locally (NRS, 2023), which are unlikely to significantly impact the status of this species. Furthermore, due to its newly confirmed broad distribution and probably greater numbers recorded, NSR (2023) intend to use the data and the survey reports to support an application to reclassify <i>Eremophila praecox</i> to a lesser conservation status.</p> <p>No Threatened or Priority Ecological Communities were identified within the application area (Phoenix 2023a; GIS Database).</p> <p>A total of 5 introduced flora species were recorded during the survey including <i>*Cylindropuntia fulgida</i> var. <i>mamillata</i> which is a Declared Pest and WoNS, <i>*Echium plantagineum</i> which is a Declared Pest, and <i>*Cylindropuntia fulgida</i> var. <i>mamillata</i> is a C3 Restricted Declared Pest (Phoenix, 2023b). Weeds have the potential to out-compete native flora and reduce the biodiversity of an area. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.</p>		
<p><b>Principle (b):</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.”</p> <p><b>Assessment:</b></p> <p>A basic fauna survey identified 23 vertebrate fauna species within the application area, including 21 bird species and two introduced mammal species (Phoenix, 2023a). None of the species identified are classified as conservation significant fauna (Phoenix, 2023a).</p> <p>The survey also did not identify any short-range endemic species of conservation significance within the application area (Phoenix, 2023a).</p> <p>Results from a desktop analysis identified Arid Bronze Azure Butterfly (ABAB) (<i>Ogyris subterrestris petrina</i>) (EPBC Act, BC Act – Critically Endangered), and Inland Hairstreak butterfly (<i>Jalmenus aridus</i>) (P1) within the local area (Phoenix, 2023a). However, a targeted search of the area did not record any, <i>Camponotus</i> sp. nr. <i>terebrans</i>, host of the ABAB, within the proposed clearing area (Phoenix, 2023a). There is suitable habitat for <i>Jalmenus aridus</i> in the application area, and the area is within the known species range. However, little of the biology of this species is known due to limited knowledge. According to recent collections, this species may be associated with widespread species and within a variety of habitats and, therefore, may be more widespread than previously believed (Phoenix, 2023a).</p> <p>Only one fauna habitat was identified within the application area: Open woodland (Phoenix, 2023a). This habitat is common and widespread in the local and regional area, and it is likely to support fauna considered abundant and to have wide distributions (Phoenix, 2023a). Therefore, the proposed clearing activities are unlikely to adversely impact conservation significant fauna species or habitats (Phoenix, 2023a).</p> <p>Regardless of the absence of conservation significant fauna species within the application area, the size of application area (97.8 hectares) and its fauna habitat are likely to provide shelter for numerous other fauna species. Therefore, it is recommended</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
to undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.		
<p><b>Principle (c):</b> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>There are no known records of Threatened flora within the application area (GIS Database). The flora and vegetation 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, 2023a; 2023b).</p>	Not likely to be at variance	No
<p><b>Principle (d):</b> <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
<b>Environmental value: significant remnant vegetation and conservation areas</b>		
<p><b>Principle (e):</b> <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 98% of the pre-European vegetation still exists in the IBRA Murchison Bioregion (Government of Western Australia, 2019).</p> <p>The application area is broadly mapped as Beard vegetation association 468 and 540 (GIS Database). These vegetation associations have not been extensively cleared as approximately 98% 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><b>Principle (h):</b> <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 likely to be at variance	No
<b>Environmental value: land and water resources</b>		
<p><b>Principle (f):</b> <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>The application area has four minor ephemeral drainage line (GIS Database). Drainage lines within the project area are poorly defined and are only likely to flow following major rainfall events. As the vegetation associated with this ephemeral drainage line may be cleared, it is recommended to maintain surface water flow or reinstate downstream into existing natural drainage lines.</p> <p>Potential impacts to an ephemeral drainage line can be managed through vegetation management condition, which includes avoiding clearing riparian vegetation and maintaining surface water flow. However, the proposed clearing is unlikely to significant impact vegetation growing in association with any watercourse or wetland.</p>	May be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (g):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</p> <p><u>Assessment:</u></p> <p>The mapped soils within the Gumland and Moriarty land systems are susceptible to erosion if vegetation is reduced or the soil surface disturbed (DPIRD, 2023). The proposed clearing of 97.8 hectares of vegetation and bare soils may lead to some risk of water or 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> “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.”</p> <p><u>Assessment:</u></p> <p>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>	Not likely to be at variance	No
<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](http://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 6 October 2023).
- Department of Mines, Industry Regulation and Safety (DMIRS) (2023) Decision Report for Clearing Permit CPS 10242/1. Western Australia, 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 29 September 2023).
- Department of Primary Industries and Regional Development (DPIRD) (2023) Advice received in relation to Clearing Permit Application CPS 10290/1. Office of the Commissioner of Soil and Land Conservation, Department of Primary Industries and Regional Development, Western Australia, September 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](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](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](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 (NRS) (2023) Additional information in support to the clearing permit CPS 10290/1 - NSR Regional Core Yard. Prepared by Northern Star Resources Limited, September 2023.
- Phoenix (2022) Terrestrial fauna survey of the proposed Regional Core Yard for the Kalgoorlie Operations. Osbourne Park, WA, Phoenix Environmental Sciences Pty Ltd.
- Phoenix (2023a) Memorandum Report – Native Vegetation Clearing Permit Support Document. Prepared for Northern Star Resources Pty Ltd by Phoenix Environmental Science Pty Ltd.



## 4. 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>DCCEEW</b>	Department of Climate Change, Energy, the Environment and Water, 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 DCCEEW)
<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.
- (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.