GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 3851/4
Permit Holder:	Northern Star (HBJ Minerals) Pty Ltd
Duration of Permit:	From 2 October 2010 to 12 April 2034

The permit holder is authorised to clear *native vegetation* subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to clear *native vegetation* for the purpose of mineral production and resource drilling.

2. Land on which clearing is to be done

Lot 15 on Deposited Plan 58833, Feysville

Lot 50 on Deposited Plan 226299, Feysville

3. Clearing authorised

The permit holder must not clear more than 450 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

4. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 12 April 2029.

5. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear *native vegetation* for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

PART II – MANAGEMENT CONDITIONS

6. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

(a) avoid the clearing of *native vegetation*;

(b) minimise the amount of *native vegetation* to be cleared; and

(c) reduce the impact of clearing on any environmental value.

7. Weed control

(a) when undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds*:

(i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

(ii) ensure that no known *weed*-affected soil, *mulch, fill*, or other material is brought into the area to be cleared;

(iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

(b) at least once in each 12 month period for the term of this Permit, the Permit Holder must remove or kill any *weeds* growing within areas cleared under this permit.

8. Fauna management - directional clearing

The permit holder must:

(a) conduct clearing activities in a slow, progressive manner towards adjacent *native vegetation*; and

(b) allow a reasonable time for fauna present within the area being cleared to move into adjacent *native vegetation* ahead of the clearing activity.

9. Fauna management – Malleefowl

(a) Prior to undertaking any clearing authorised under this permit, the permit holder shall engage a *fauna specialist* to undertake a *fauna survey* within the areas for *Leipoa ocellata* (malleefowl), including the identification and inspection of *active* and inactive mounds and *Leipoa ocellata* (malleefowl) *critical habitat*;

(b) prior to undertaking any clearing authorised under this permit, the permit holder shall provide the results of the *fauna survey* in a report to the *CEO*.

(c) the *fauna survey* report must include:

(i) the location of each *Leipoa ocellata* (malleefowl) mound, delineated as either an *active mound* or inactive mound, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA20), expressing the geographical coordinates in Eastings and Northings or decimal degrees, to the *CEO*.

(ii) the location of the *Leipoa ocellata* (malleefowl) *critical habitat*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA20), expressing the geographical coordinates in Eastings and Northings or decimal degrees, to the *CEO*.

(iii) the methodology used to survey the Permit Area and to establish the *Leipoa ocellata* (malleefowl) *critical habitat* and identify the mound/s;
(iv) the extent of the *critical habitat* of the *Leipoa ocellata* (malleefowl) shown on a map; and
(v) a description of the *critical habitat* found.

(d) where *Leipoa ocellata* (malleefowl) mounds are identified under Condition 9(a) of this Permit, the Permit Holder shall ensure that no clearing of *Leipoa ocellata* (malleefowl) *active mounds* or *critical habitat* of the identified *Leipoa ocellata* (malleefowl) *active mounds* occurs, unless first approved by the *CEO*.

(e) the malleefowl pre-clearance survey should also include searches for other conservation significant fauna.

(f) where mounds are identified under condition 9(a) of this permit, the permit holder shall;
(i) flag the location of the mound(s);
(ii) not clear within 50 metres of malleefowl mound(s).

10. Retain vegetative material and topsoil, revegetation and rehabilitation

The Permit Holder shall:

(a) retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared.

(b) within 12 months following clearing authorised under this permit, *revegetate* and *rehabilitate* the areas that are no longer required for the purpose of mineral production, excluding the open pit, by laying the vegetative material and topsoil retained under condition 10(a) on the cleared area(s).

(c) within 18 months of undertaking *revegetation* and *rehabilitation* in accordance with condition 10(b) of this Permit:
(i) engage an *environmental specialist* to determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and
(ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under condition 10(c)(i) of this Permit will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, *revegetate* the area by deliberately *planting* and/or *direct seeding native vegetation* that will result in a similar species composition, structure and density of *native vegetation* to pre-clearing vegetation types in that area and ensuring only *local provenance* seeds and propagating material are used.

(d) where additional *planting* or *direct seeding* of *native vegetation* is undertaken in accordance with condition 10(c)(ii) of this permit, the Permit Holder shall repeat condition 10(c)(i) and 10(c)(ii) within 24 months of undertaking the additional *planting* or *direct seeding* of *native vegetation*.

(e) where a determination by an *environmental specialist* that the composition, structure and density within areas *revegetated* and *rehabilitated* will result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, as determined in condition 10(c)(i) and (ii) of this permit, that determination shall be submitted for the CEO's consideration. If the CEO does not agree with the determination made under condition 10(c)(ii), the CEO may require the Permit Holder to undertake additional *planting* and *direct seeding* in accordance with the requirements under condition 10(c)(ii).

PART III - RECORD KEEPING AND REPORTING

11. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	(a) the species composition, structure, and density of the cleared area; (b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (a) the size of the area cleared (in hectares); (b) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 6; (c) actions taken to minimise the risk of the introduction and spread of *weeds* in accordance with condition 7; and (d) actions taken in accordance with condition 8 of the Permit to minimise the impacts of the *native vegetation* clearing on fauna.
2.	In relation to the fauna survey undertaken for malleefowl management pursuant to condition 9	(a) the location of each *Leipoa ocellata* (malleefowl) mound, delineated as either an *active mound* or an inactive mound, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees, to the *CEO*; (b) the location of the *Leipoa ocellata* (malleefowl) *critical habitat*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees, to the *CEO*; (c) the methodology used to survey the Permit Area and to establish the *Leipoa ocellata* (malleefowl) *critical habitat* and identify the mound/s; (d) the extent of the *critical habitat* of the *Leipoa ocellata* (malleefowl) shown on a map; and (e) a description of the *critical habitat* found; and (f) the time(s) and date(s) that the survey was undertaken, including the name and qualification of the *fauna specialist* conducting the survey.
3.	In relation to the revegetation and rehabilitation of areas pursuant to condition 10	(a) The location of any areas *revegetated* and *rehabilitated*, recorded Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees; (b) A description of the *revegetation* and *rehabilitation* activities undertaken; and (c) The size of the area *revegetated* and *rehabilitated* (in

No.	Relevant matter	Specifications
		hectares) (d) The date(s) on which the *revegetation* and *rehabilitation* was undertaken; and (e) Action and timing of remedial actions undertaken within the area(s) that was *revegetated* and *rehabilitated* in accordance with conditions 10(c)(ii) and 10(e).

12. Reporting

(a) the permit holder must provide to the *CEO*, on or before 30 June of each year, a written report:
  (i) of records required to under condition 11 of this Permit; and
  (ii) concerning activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.

(b) If no clearing authorised under this permit has been undertaken, a written report confirming that no clearing under this permit has been undertaken, must be provided to the CEO on or before 30 June of each calendar year.

(c) The permit holder must provide to the CEO, no later than 90 calendar days prior to the expiry date of the permit, a written report of records required under condition 11, where these records have not already been provided under condition 12 (a).

DEFINITIONS

In this permit, the terms in Table have the meanings defined.

Table 2: Definitions

Term	Definition
active mound/s	means mounds which appear to exhibit characteristics associated with normal nesting activity. This may include a nest mounded up, litter trails leading to mound, extensive soil and litter disturbance, and/or birds seen actively digging.
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*.
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
critical habitat	means any part of the Permit area comprising of habitat for *Leipoa ocellata* (malleefowl) and its population, that is critical for the health and long term survival of *Leipoa ocellata* (malleefowl) and its population;
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
direct seeding	means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species.
EP Act	*Environmental Protection Act 1986* (WA)

Term	Definition
fauna specialist	means a person who holds a tertiary qualification specializing in environmental science or equivalent, and has a minimum of two (2) years work experience in Western Australian fauna identification and undertaking surveys of fauna native to the bioregion being inspected or surveyed, or who is approved by the CEO as a suitable botanist for the bioregion, and who holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016*.
fauna survey	means a field-based investigation, including a review of established literature, of the biodiversity of fauna and/or fauna habitat of the Permit area and where conservation significant fauna are identified in the Permit area, also includes a fauna survey of surrounding areas to place the Permit area into local context.
fill	means material used to increase the ground level, or to fill a depression.
local provenance	means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same IBRA subregion of the area cleared.
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
planting	means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species.
rehabilitat/ed/ion	means actively managing an area containing native vegetation in order to improve the ecological function of that area.
revegetate/ed/ion	means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
weeds	means any plant – (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS

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Juraj Galba
A/MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

12 April 2024

Schedule 1
Plan 3851/4

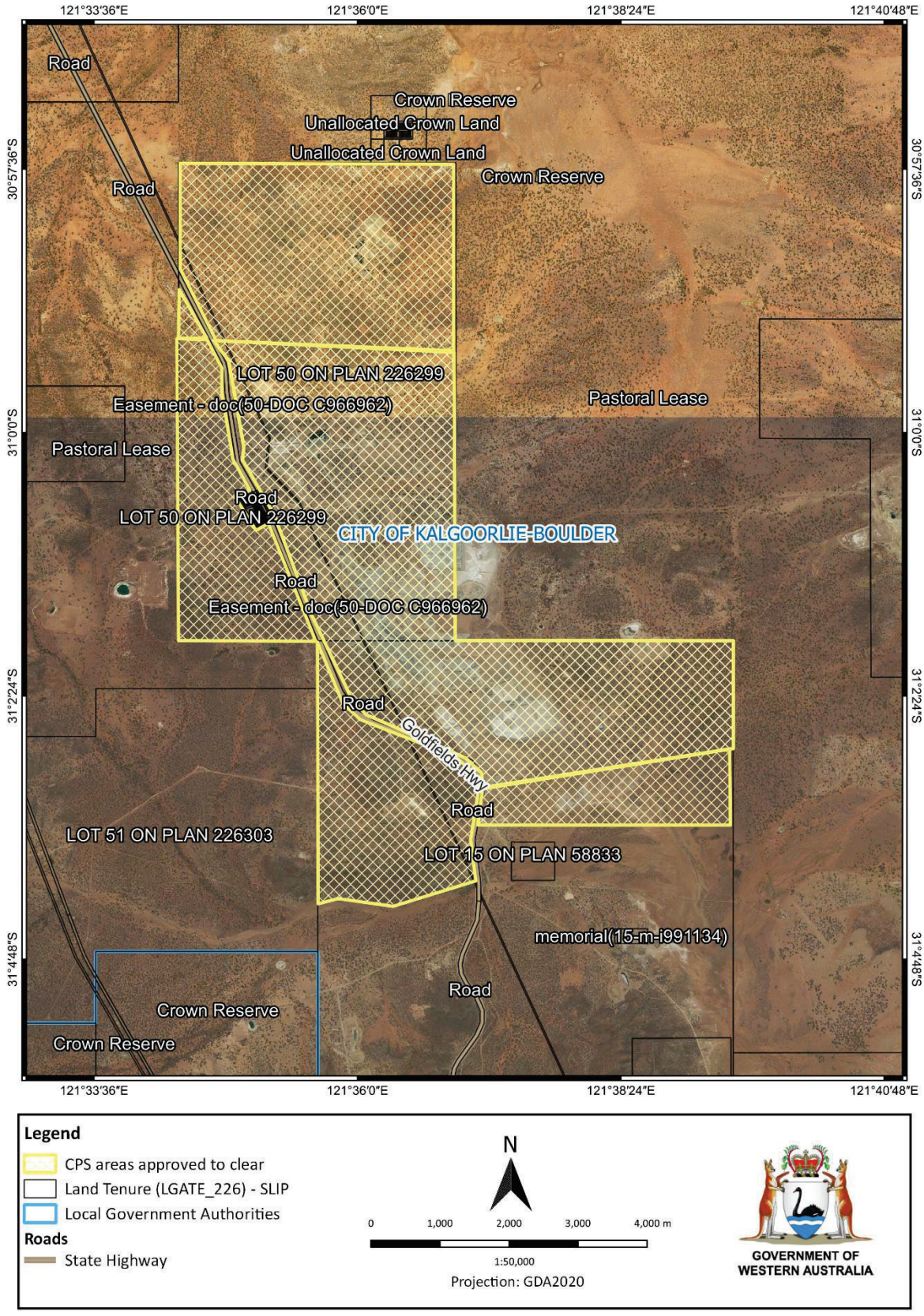


Figure 1: Map of the boundary of the area within which clearing may occur

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 3851/4
Permit type:	Purpose permit
Applicant name:	Northern Star (HBJ Minerals) Pty Ltd
Application received:	12 December 2022
Application area:	450 hectares of native vegetation
Purpose of clearing:	Mineral Production and Resource Drilling
Method of clearing:	Mechanical Removal
Properties:	Lot 15 on Deposited Plan 58833 Lot 50 on Deposited Plan 226299
Location (LGA area):	Shire of Kalgoorlie-Boulder
Localities (suburb):	Feysville

1.2. Description of clearing activities

This amendment to Clearing Permit CPS 3851/2 is to extend the period in which clearing is authorised and the duration of the permit (Northern Star, 2023a). The area and location of the clearing is unchanged (see Figure 1, Section 1.5).

Clearing Permit CPS 3851/2 allowed for the clearing of 450 hectares of native vegetation within a footprint of approximately 10,145.49 hectares within Lot 15 on Deposited Plan 58833 and Mining Lease 15/717, which covered Lot 50 on Plan 226299, Feysville, to facilitate mineral production and resource drilling. The clearing under CPS 3851/2 was authorised until 2 October 2020. The duration of the permit was until 2 October 2025. The applicant (Northern Star (HBJ Minerals) Pty Ltd) advised that 111 hectares of clearing has been undertaken under Clearing Permit CPS 3851/1 and Clearing Permit CPS 3851/2 since the commencement of the permit in 2012.

1.3. Decision on application

Decision:	Granted
Decision date:	12 April 2024
Decision area:	450 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit amendment application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 14 days and did not receive and submissions.

In making this decision, the Delegated Officer had regard for:

- the findings of *Detailed Flora/Vegetation Survey and Basic Fauna Assessment* (Botanica Consulting, 2023) which did not identify any conservation significant flora and ecological communities, or evidence of conservation significant fauna, within the application area (see Appendix A)
- relevant datasets (see Appendix BB.1)
- actions taken by the permit holder to avoid and minimise the need for clearing (see section 3.1)
- advice from DWER's:
    - Compliance and Enforcement team which did not identify permit holder's non-compliance with conditions of Clearing Permit CPS 3851/2
    - the Water licencing branch advising that the permit holder holds a valid groundwater licence
    - Contaminated Sites branch on the implications of the contaminated sites report for the clearing
- advice from Shire of Coolgardie which did not raise any objections to the proposed clearing
- *Contaminated Sites Management Plan* prepared by the permit holder to avoid pollution to the natural environment and prevent contamination (Northern Star, 2024)
- clearing principles set out in Schedule 5 of the EP Act
- relevant planning instruments and any other matters relevant to the assessment (see Section 3.2); and
- the extent of native vegetation cleared to date (approximately 111 hectares).

Noting the above information, DWER identified conservation significant flora within the local area that were not considered in the original assessment. A total of five flora specoes, namely *Austrostipa turbinata, Calandrinia lefroyensis*, *Cyathostemon divaricatus, Ricinocarpos digynus* and *Styphelia rectiloba* occur in similar vegetation, soil and habitat type as that in the application area. Given this, DWER requested the permit holder to conduct a flora survey of the application area. The permit holder subsequently engage Botanica Consulting that undertook a flora and fauna survey. The survey did not identify any conservation significant flora or fauna in the application area.

DWER noted that while the survey did not identify any conservation significant flora or fauna, a portion of the application area provides suitable habitat for three conservation significant flora, these being *Austrostipa turbinata, Cyathostemon divaricatus* and *Ricinocarpos digynus.* Noting this, DWER conducted a detailed risk-based assessment to determine the potential impacts of the proposed clearing on these species. DWER determined that the likelihood of occurrence of *A. turbinata, C. divaricatus* and *R. digynus* was low given the high level of disturbance of the application area from historical and existing activities, and that these species are either perennial grasses or shrubs highly detectible. Had they occurred within the application area, the flora survey (Botanica Consulting, 2023) would have likely identified them. The severity of any potential impacts on these species was deemed minor on the basis that only a portion of the application area provides suitable habitat for these species, and that the local area is highly vegetated and provides similar habitat to that present in the application area. In addition, under the conditions of the clearing permit the permit holder is required to retain vegetative material and topsoil and use it to rehabilitate the areas that are no longer being required for the purpose of mineral production. This reduces the severity of potential impacts on *A. turbinata, C. divaricatus* and *R. digynus.* Considering this, DWER concluded that the clearing is unlikely to cause significant impacts on these species at the regional or conservation level.

Based on the above information, the Delegated Officer determined that that the proposed clearing will result in:

- the loss of native vegetation that is suitable habitat for malleefowl (*Leipoa ocellata*)
- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values; and
- potential land degradation in the form of wind or water erosion.

To minimise impacts to the above environmental values, the clearing permit contains conditions requiring:

- conduct pre-clearance surveys to identify mounds and critical habitat for malleefowl
- undertake slow, progressive, one-directional clearing to allow fauna to move into adjacent vegetation ahead of the clearing activity; and
- weed management measures to mitigate impacts on adjacent vegetation.

No additional environmental impacts have been identified during the assessment of this application. Therefore, the above impacts are consistent with those identified in the decision report CPS 3851/1.

In determining to grant the amended clearing permit subject to conditions, the Delegated Officer found that the proposed clearing is unlikely to lead to an unacceptable environmental risk.

1.5. Site map

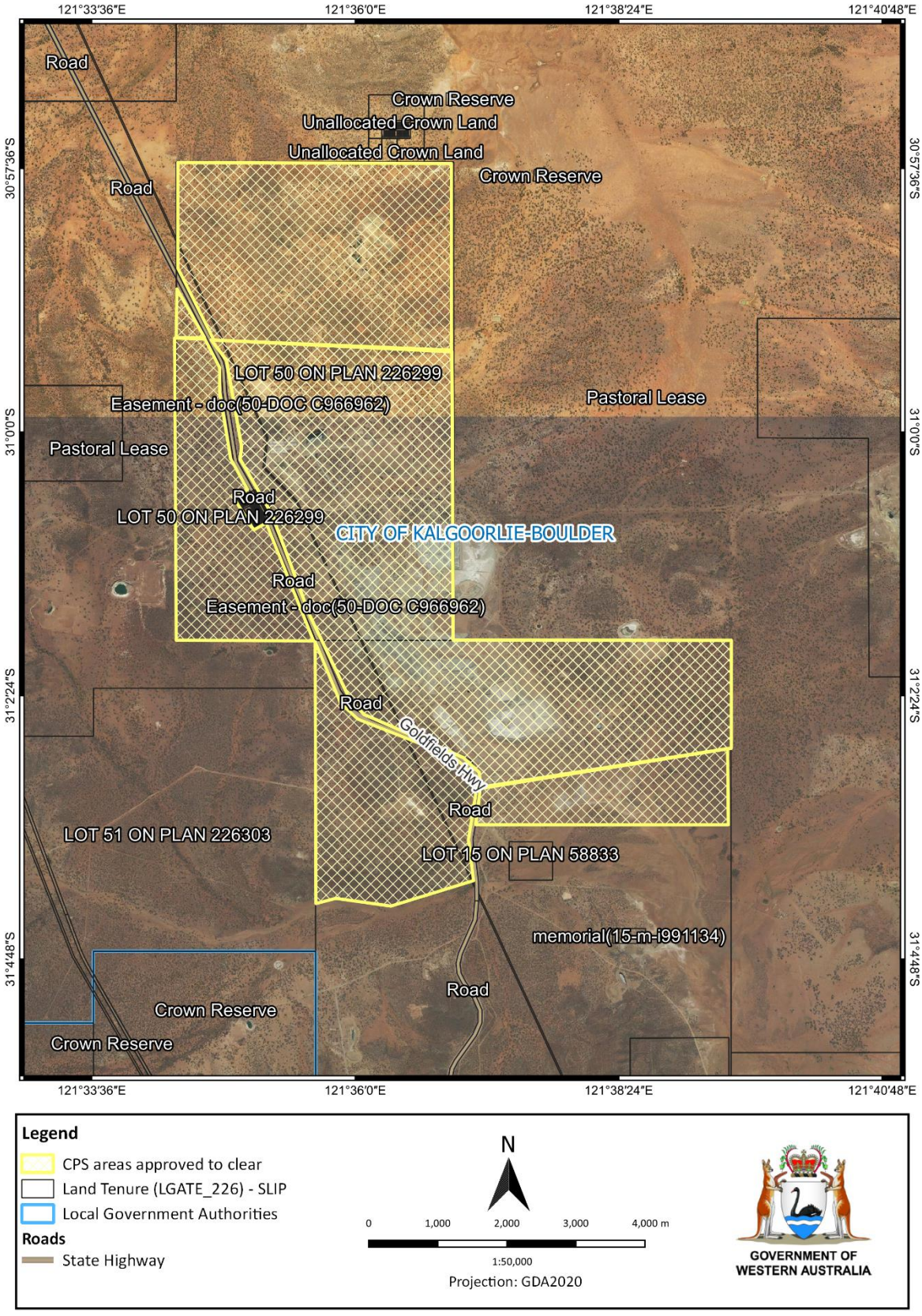


Figure 1: Map of the application area. The areas crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

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)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)
- *Rights in Water and Irrigation Act 1914* (RIWI)
- *Contaminated Sites Act 2003*
- *Aboriginal Heritage Act 1972*

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

Evidence was submitted by the applicant, demonstrating that clearing would be undertaken only if necessary and for the operational needs. Specifically, the applicant advised that (Northern Star, 2023c):

- already disturbed sites will be used for operational activities rather than clearing of new areas
- exploration disturbance will only occur to the clearing extent necessary for the drill site preparation and will be rehabilitated within six months
- barricades will be used around sumps but they will have fauna egress for fauna to escape; and
- raised blade clearing will be undertaken, when possible, to minimise disturbance of topsoil and rootstock. If not possible, topsoil and vegetation will be stockpiled for re-spreading during rehabilitation. A weed management plan will also be used during operations.

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Relevant planning instruments and other matters

The City of Kalgoorlie Boulder advised it did not have any objections to the proposed clearing permit amendment (City of Kalgoorlie Boulder, 2023).

Likewise, DWER's Water Licencing branch had no objections to the proposed clearing and advised that Northern Star currently holds existing and valid groundwater licence GWL106836 for mining related purposes (DWER, 2023a).

DWER's Contaminated Sites branch recommended developing a management plan for the proposed clearing works in the event that tailings dusts or contaminated soils are encountered from historical gold mine and associated mineral processing (DWER, 2023b). The applicant advised that those areas had already been cleared but prepared a management plan for any potential remaining areas (Northern Star, 2023c; Northern Star 2024).

One Aboriginal site of significance has been mapped within the application area, that being the Woolubar Dam Creek. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

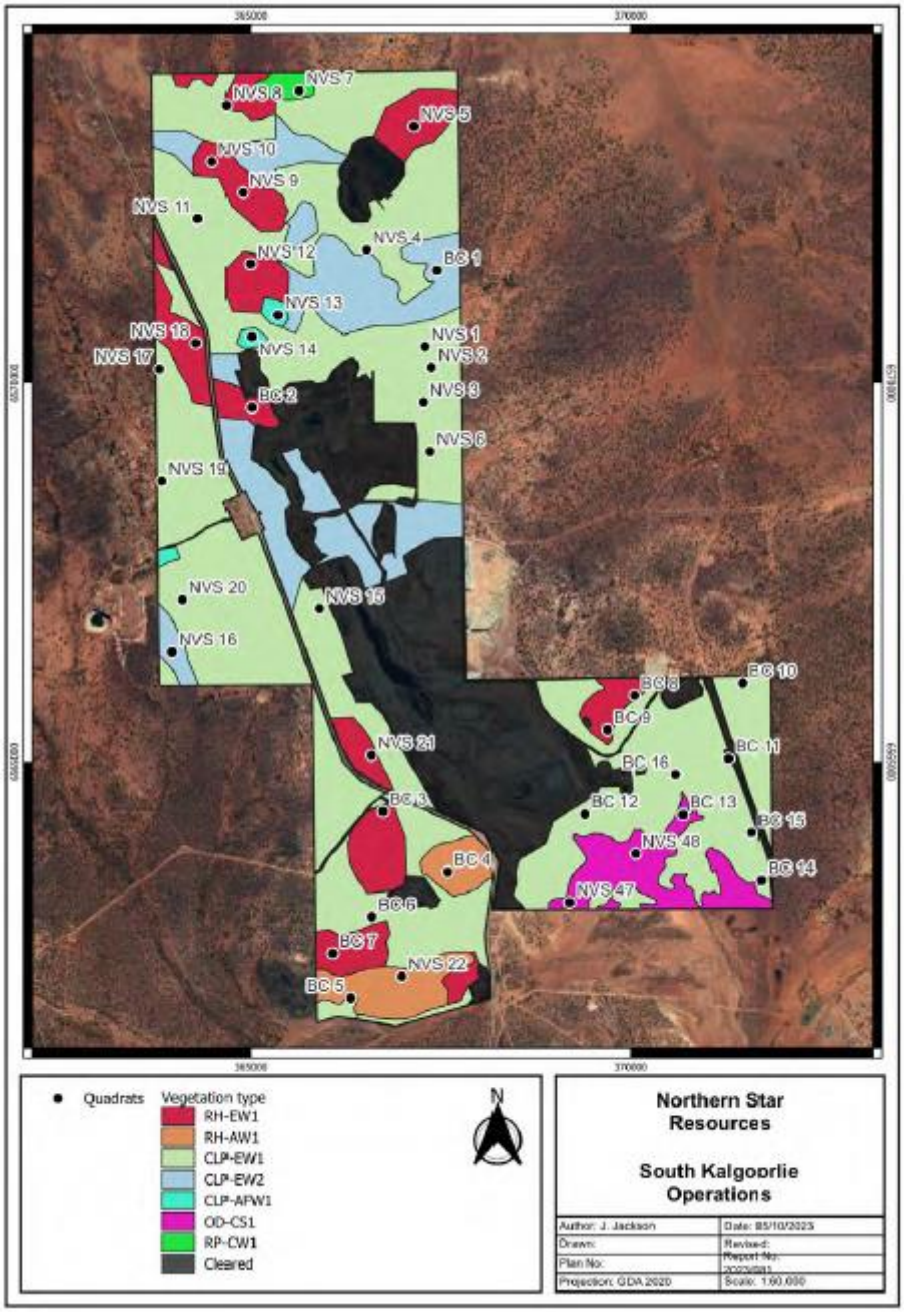
Appendix A. Biological survey excerpts

Landform	NVIS Vegetation Group	Veg Code	Vegetation Type	Area (ha)	Area (%)	Image
Rocky Hillslope	Eucalypt Woodlands (MVG 5)	RH-EW1	Low woodland of *Eucalyptus torquata* over mid open shrubland of *Eremophila oldfieldii* subsp. *angustifolia* over low open shrubland of *Olearia muelleri* on rocky hillslope.	526.9	9.9	
	Acacia open Woodland (MVG 13)	RH-AOW1	Low open woodland of *Acacia colleqialis* over mid open shrubland of *Eremophila georgei* and *Dodonaea lobulata* over low open shrubland of *Ptilotus obovatus* on rocky hillslope.	154.0	2.9	

Landform	NVIS Vegetation Group	Veg Code	Vegetation Type	Area (ha)	Area (%)	Image
Plain	Eucalypt Woodlands (MVG 5)	CLP-EW1	Low woodland of *Eucalyptus salmonophloia* over mid open shrubland of *Eremophila interstans* subsp. *interstans* over low open shrubland of *Maireana sedifolia* on clay loam plain.	2,548.0	48.2	
	Eucalypt Woodlands (MVG 5)	CLP-EW2	Low woodland of mixed *Eucalyptus* sp. over mid open shrubland of *Acacia acuminata* over low open shrubland of *Olearia muelleri* on clay loam plain.	571.5	10.8	

Landform	NVIS Vegetation Group	Veg Code	Vegetation Type	Area (ha)	Area (%)	Image
	Acacia Woodlands (MVG 6)	CLP-AFW1	Low open woodland of mixed *Eucalyptus* sp. over mid open forest of *Acacia acuminata* over low isolated shrubs of *Dodonaea adenophora* on clay loam plain.	23.5	0.4	
Plain	Casuarina Woodlands (MVG 8)	RP-CW1	Low woodland of *Casuarina pauper* over mid open shrubland of *Eremophila oldfieldii* subsp. *angustifolia* over low open shrubland of *Senna artemisioides* subsp. *filifolia* on rocky plain.	23.7	0.4	

Landform	NVIS Vegetation Group	Veg Code	Vegetation Type	Area (ha)	Area (%)	Image
Open depression	Chenopod shrublands (MVG 22)	OD-CS1	Mid sparse shrubland of *Acacia masliniana* over low chenopod shrubland of *Maireana sedifolia* and *Tecticornia disarticulata* on a sandy clay loam open depression.	167.2	3.2	
Cleared	Cleared (MVG 25)	CV	Cleared areas	1,273.2	24.2	
			Total	**5,288**	**100**	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BC 2
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BC 13
BC 15
NVS 48
BC 4
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NVS 47
BC 6
BC 7
NVS 22
BC 5
Quadrats
Vegetation type
RH-EW1
RH-AW1
CLP-EW1
CLP-EW2
CLP-AFW1
OD-CS1
RP-CW1
Cleared
N
Northern Star Resources
South Kalgoorlie Operations
Author: J. Jackson
Date: 05/10/2023
Drawn:
Revised:
Plan No:
Report No:
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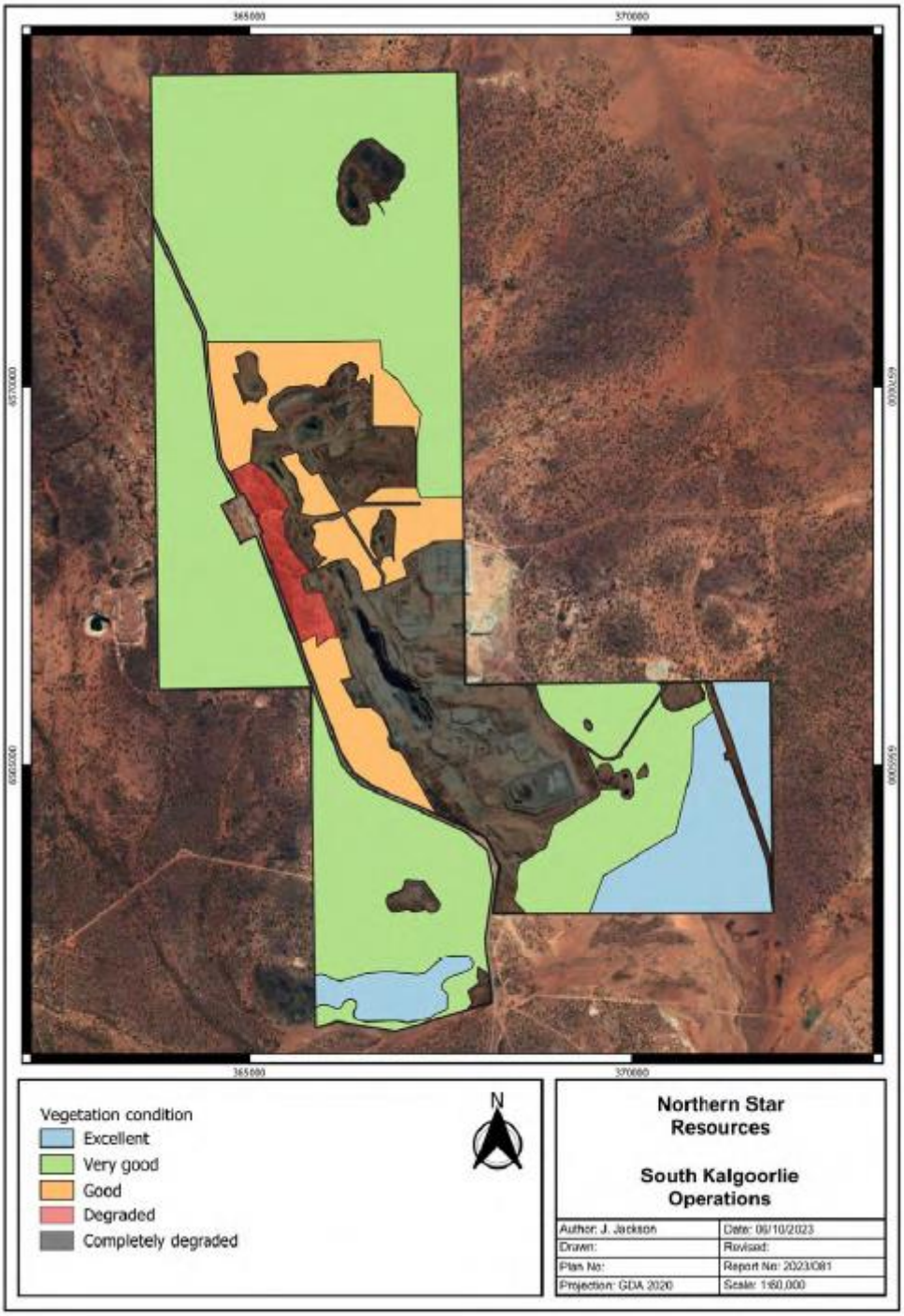
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Vegetation condition
Excellent
Very good
Good
Degraded
Completely degraded
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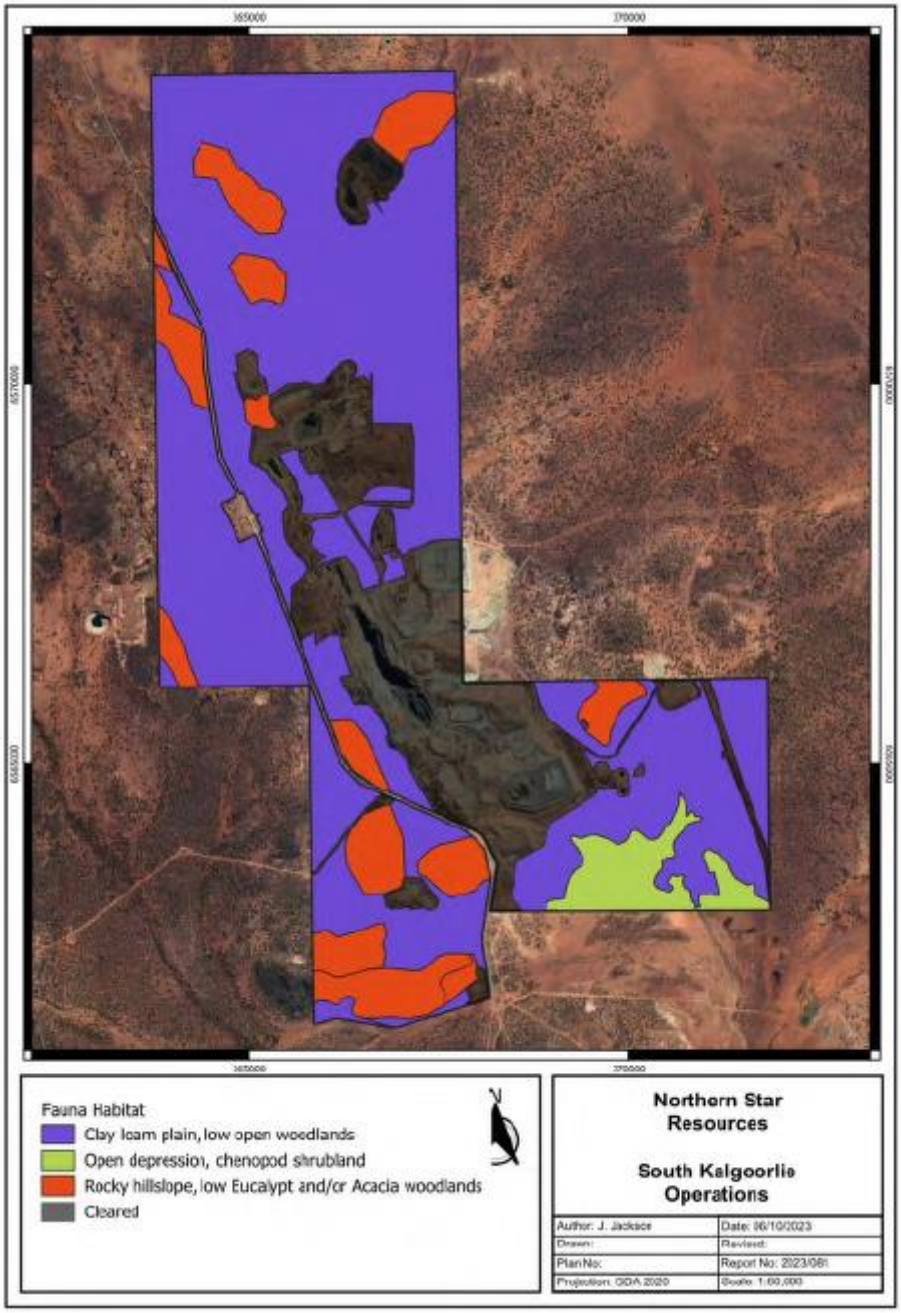
Northern Star Resources
South Kalgoorlie Operations
Author: J. Jackson
Date: 06/10/2023
Drawn:
Revised:
Plan No:
Report No: 2023/081
Projection: GDA 2020
Scale: 1:60,000

Fauna Habitat	Description	Representative Fauna Attributes	Example Image
Rocky Hillslope, Low Eucalypt and/or Acacia Woodlands Area= 680.9 ha (14.8%)	Low open Acacia/Eucalyptus woodlands over a mid shrub layer of Eremophila/Melaleuca/Santalum/Senna/Dodonaea/ Acacia over a low open shrubland of Westringia/ Olearia/ Ptilotus on rocky hillslopes.	• Ground not suited to burrowing species. • Moderate diversity vegetation strata supporting avifauna. • Low vegetation density and leaf litter. • Potential refuge for small fauna under rocks.	
Clay loam plain, low open woodlands Area= 3166.7 ha (55.8%)	Low open mixed Eucalyptus and Casuarina woodlands over a mid shrub layer of Atriplex/ Eremophila/ Senna over mixed low shrublands of Ptilotus/ Olearia/ Atriplex on clay-loam plains.	• Ground moderately suited to burrowing species. • Moderate to high diversity vegetation strata supporting avifauna assemblage. • Moderate vegetation density and leaf litter, providing good refuge for reptiles.	

Fauna Habitat	Description	Representative Fauna Attributes	Example Image
Open depression, chenopod shrublands Area= 167.2 ha (5.2%)	Mixed sparse shrublands of Acacia/ Melaleuca over moderate density mid to lower layer of chenopod shrubs in open depression with a sandy clay substrate.	• Ground has moderate suitability to burrowing species. • High potential refuge for small fauna (e.g. reptiles) under shrubs. • Low diversity vegetation strata. • Low vegetation density and leaf litter. • Chenopod shrubs provide a food source to avifauna during drought conditions.	
Cleared Area= 1273.2 ha (24.2%)	N/A	• N/A	



A full copy of the biological survey is available at [Index of /permit/3851 (dwer.wa.gov.au).]

Appendix B. Sources of information

B.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- 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)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- 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 – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- 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
- Soil Landscape Mapping – Systems
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

B.2. References

Botanica Consulting. (2023). *Detailed Flora/Vegetation Survey and Basic Fauna Assessment.* Prepared for Northern Star Resources Limited. Received by DWER on 10 November 2023. DWER ref: DWERDT868262.

City of Kalgoorlie Boulder (2023) *Advice for clearing permit application CPS 3851/4*, received 27 November 2023 (DWER Ref: DWERDT873055).

Department of Environment Regulation (DER) (2013). *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf.

Department of Water and Environmental Regulation (DWER) (2019). *Procedure: Native vegetation clearing permits*. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.PDF.

Department of Water and Environmental Regulation (DWER) (Regulatory Services – Water) (2023a) *Rights in Water and Irrigation Act 1914 advice for clearing permit application CPS 3851/4*, received 13 February 2023 (DWER Ref: DWERDT865387).

Department of Water and Environmental Regulation (DWER) (Contaminated sites) (2023b) *Contaminated sites advice for clearing permit application CPS 3851/4*, received 28 November 2023 (DWER Ref: A2228766).

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) (2016). *Technical Guidance – Terrestrial Fauna Surveys.* Available from: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Tech%20guidance-%20Terrestrial%20Fauna%20Surveys-Dec-2016.pdf.

Northern Star (2023a) *Clearing permit amendment application CPS 3851/4*, received 12 December 2022 (DWER Ref: DWERDT699066).

Northern Star (2023b) *Supporting information, flora and fauna report, for clearing permit application CPS 3851/4,* received 10 November 2023 (DWER Ref: DWERDT868262).

Northern Star (2023c) *Supporting information, management plan preparation and avoidance and mitigation details, for clearing permit application CPS 3851/4,* received 7 December 2023 (DWER Ref: DWERDT877975).

Northern Star (2024) Contaminated sites management plan prepared for CPS 3851/4, received 19 January 2024 (DWER Ref: DWERDT917149)