



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8375/1
Permit Holder:	Northern Star (Hampton Gold Mining Areas) Ltd
Duration of Permit:	26 September 2019 to 26 September 2029

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of mineral exploration.

2. Land on which clearing is to be done

Lot 35 on Plan 226335, Cundeelee

3. Area of Clearing

The Permit Holder must not clear more than 40 hectares of native vegetation within the area hatched yellow on attached Plan 8375/1.

4. Type of clearing authorised

The Permit Holder shall not clear any native vegetation after 26 September 2024.

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 the impacts and extent of clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- avoid the clearing of native vegetation;
- minimise the amount of native vegetation to be cleared; and
- reduce the impact of clearing on any environmental value.

7. Weed control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:

- clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

8. Flora management

The Permit Holder shall ensure that no clearing of *critical habitat* for threatened or *priority* flora occurs, unless first approved by the CEO.

9. Fauna management

The Permit Holder shall ensure that no clearing of *critical habitat* for threatened or *priority* fauna occurs, unless first approved by the CEO.

10. Vegetation management

(a) The Permit Holder shall not clear native vegetation within 50 metres of the *riparian vegetation* of any *watercourse*, *drainage line* or *wetland*, except for the purpose of a crossing, unless first approved by the CEO.

(b) Where a *watercourse*, *drainage line* or *wetland* is to be impacted by clearing, the Permit Holder shall ensure that surface flow is maintained, or is reinstated downstream into existing natural drainage lines.

11. 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) At an *optimal time* following clearing authorised under this Permit, *revegetate* and *rehabilitate* the area(s) that are no longer required for mineral exploration by:

(i) re-shaping the surface of the land so that it is consistent with the surrounding 5 metres of uncleared land;

(ii) laying the vegetative material and topsoil retained under condition 11(a) on the cleared area(s);

(iii) 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

(iv) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the area.

(c) Within 18 months of laying the vegetative material and topsoil on the cleared area in accordance with condition 11(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 11(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 11(c)(ii) of this permit, the Permit Holder shall repeat condition 11(c)(i) and 11(c)(ii) within 18 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 11(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 11(c)(ii), the CEO may require the Permit Holder to undertake additional *planting* and *direct seeding* in accordance with the requirements under condition 11(c)(ii).

PART III - RECORD KEEPING AND REPORTING

12. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the species composition, structure and density of the cleared area;
 - (ii) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (iii) the date that the area was cleared; and
 - (iv) the size of the area cleared (in hectares).

- (b) In relation to flora management pursuant to condition 8 of this Permit:
 - (i) the location of *critical habitat* for threatened or priority flora recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) a description of the species composition, structure and density of any *critical habitat* identified; and
 - (iii) a copy of any *botanist's* report relating to any *critical habitat* identified.

- (c) In relation to fauna management pursuant to condition 9 of this Permit:
 - (i) the location of *critical habitat* for threatened or priority fauna recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) a description of the species composition, structure and density of any *critical habitat* identified; and
 - (iii) a copy of any fauna specialist's report relating to any *critical habitat* identified.

- (d) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 11 of this Permit:
 - (i) the location of any areas *revegetated* and *rehabilitated*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) a description of the *revegetation* and *rehabilitation* activities undertaken;
 - (iii) the size of the area *revegetated* and *rehabilitated* (in hectares);
 - (iv) the species composition, structure and density of *revegetation* and *rehabilitation*, and
 - (v) a copy of the environmental specialist's report.

13. Reporting

The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:

- (a) of records required under condition 12 (records to be kept) of this Permit;
- (b) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year;
- (c) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year; and
- (d) Prior to 26 June 2024, the Permit Holder must provide to the CEO a written report of records required under condition 12 of this Permit where these records have not already been provided under condition 13(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

critical habitat means any part of the Permit Area comprising of the habitat of flora or fauna species and its population, that is critical for the health and long term survival of the flora or fauna species and its population;

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;

drainage line means a natural depression that carries surface water runoff;

environmental specialist means a person who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit, or who is approved by the CEO as a suitable environmental specialist.

fauna specialist: means a person who holds a tertiary qualification specializing in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the CEO as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016*;

fill means material used to increase the ground level, or fill a hollow;

local provenance means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same Interim Biogeographic Regionalisation for Australia (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;

optimal time means the period from April to May for undertaking *direct seeding*.

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

priority flora means those plant taxa described as priority flora classes 1, 2, 3, 4 or 5 in the Department of Biodiversity Conservation and Attractions *Threatened and Priority Flora List for Western Australia* (as amended);

regenerate/ed/ion means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing *mulch*;

rehabilitate/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.

riparian vegetation has the meaning given to it in Regulation 3 of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004;

watercourse has the meaning given to it in section 3 of the *Rights in Water and Irrigation Act 1914*;

weed/s 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 Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.

wetland/s means an area of seasonally, intermittently or permanently waterlogged or inundated land, whether natural or otherwise, and includes a lake, swamp, marsh, spring, dampland, tidal flat or estuary.



Ryan Mincham

2019.08.27

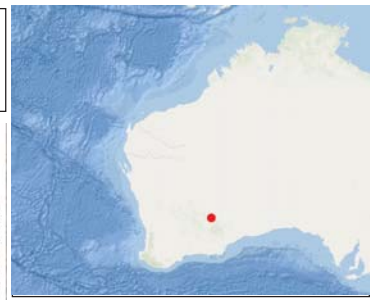
17:14:49

+08'00'

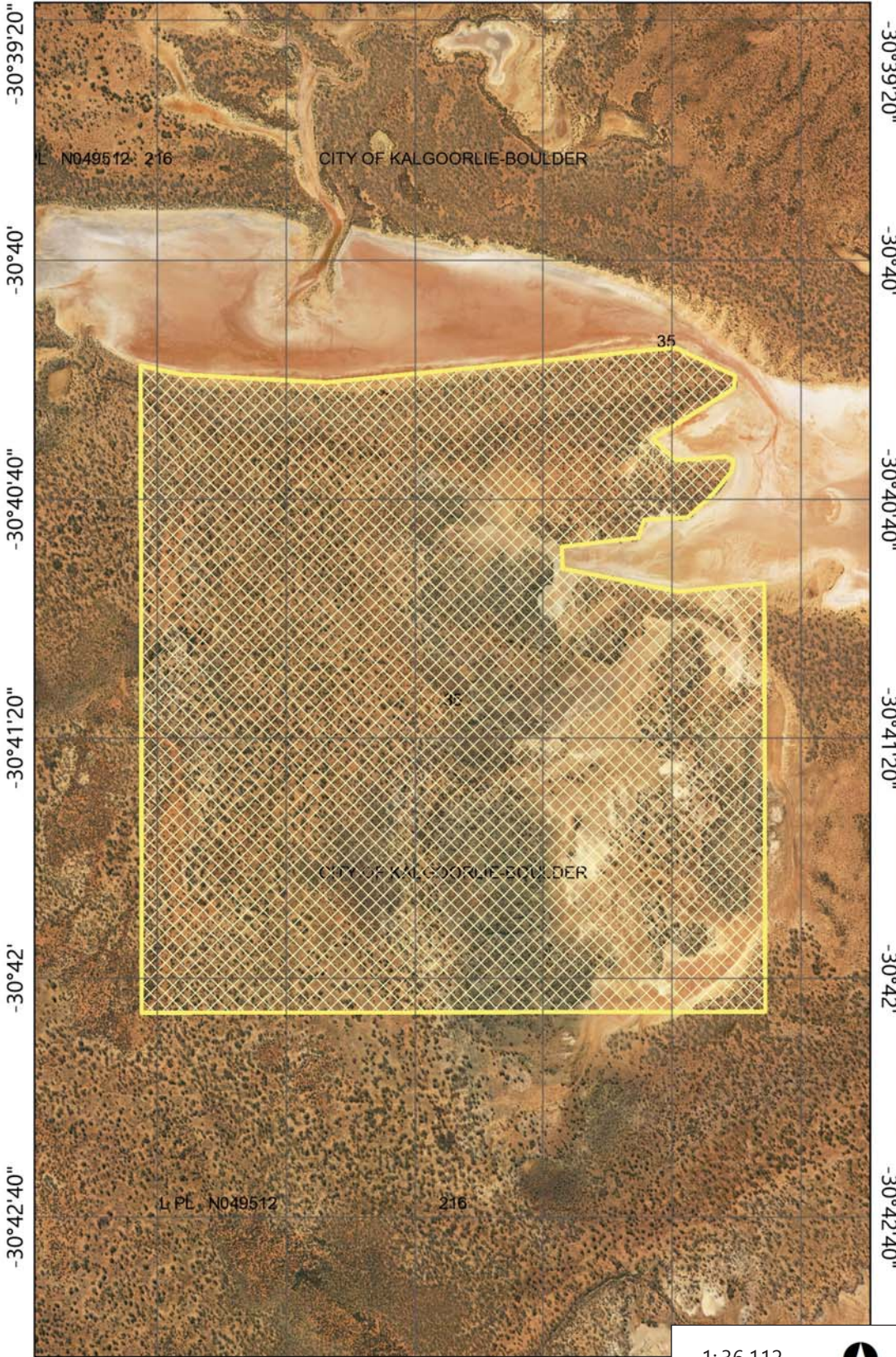
Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

27 August 2019



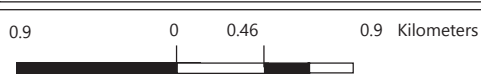
122°30'50" 122°31'15" 122°31'40" 122°32'5" 122°32'30" 122°32'55"



Legend

- CPS areas approved to clear
- Land Tenure (LGATE_226) - SLII
- Local Government Authorities
- Roads - State Roads
- Roads - Major Roads
- Roads - Minor Roads

122°30'50" 122°31'15" 122°31'40" 122°32'5" 122°32'30" 122°32'55"



WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

© Government of Western Australia, Department of Water and Environmental Regulation. THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes

R. Mincham
 Ryan Mincham
 2019.08.27
 17:14:02 +08'00'

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

Author: R Mincham
 Recipient:



1. Application details

1.1. Permit application details

Permit application No.: 8375/1
Permit type: Purpose

1.2. Applicant details

Applicant's name: Northern Star (Hampton Gold Mining Areas) Ltd
Application received date: 19 February 2019

1.3. Property details

Property: Lot 35 on Plan 226335, Cundelee
Local Government Authority: Kalgoorlie-Boulder, City of
Localities: Cundelee

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
40		Mechanical	Mineral Exploration

1.5. Decision on application

Decision on Permit Application: Granted
Decision Date: 27 August 2019

Reasons for Decision: The clearing permit application was received on 19 February 2019 and has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*. It has been concluded that clearing of the application area is at variance to clearing principle (f), may be at variance to clearing principles (a), (b) and (c) and is not, or is not likely to be at variance to the remaining clearing principles.

In determining to grant a clearing permit subject to conditions, the Delegated Officer considered that the environmental impacts of the proposed clearing can be managed through onsite avoidance and mitigation measures.

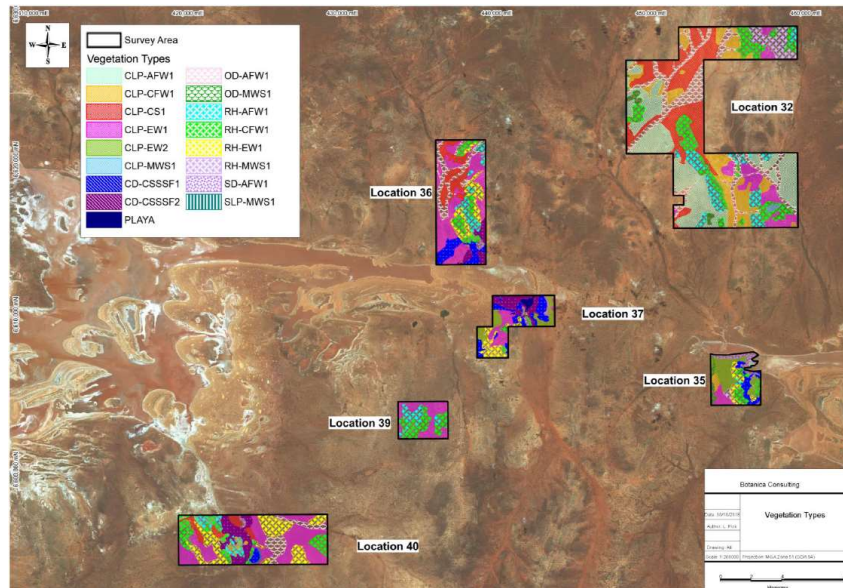
2. Site Information

Clearing Description The application is to clear 40 hectares of native vegetation within Lot 35 on Plan 226335, Cundelee, for the purpose of mineral exploration (figure 1).

Vegetation Description Ten vegetation units were mapped within Lot 35 by Botanica Consulting during a reconnaissance survey in October 2018;

- CLP-AFW1 is described as low woodland of *Acacia caesaneura*/ *A. incurvaneura* over mid open shrubland of *Senna artemisioides* subsp. *filifolia*/ *Dodonaea lobulata* and low shrubland of *Ptilotus obovatus* on clayloam-plain;
- CLP-CFW1 is described as mid woodland of *Casuarina pauper* over mid chenopod shrubland of *Maireana sedifolia* and low chenopod shrubland of *Atriplex vesicaria* on clay-loam plain;
- CLP-EW1 is described as low woodland of *Eucalyptus salmonophloia* over open shrubland of *Senna artemisioides* subsp. *filifolia* and low chenopod shrubland of *Atriplex vesicaria*/ *Maireana sedifolia* on clay-loam-plain;
- CLP-EW2 is described as low woodland of *Eucalyptus oleosa* over open shrubland of *Senna artemisioides* subsp. *filifolia* and low chenopod shrubland of *Atriplex vesicaria*/ *Maireana sedifolia* on clay-loam-plain;
- CD-CSSF1 is described as low shrubland of *Cratystylis subspinescens* over low samphire shrubland of *Tecticornia doliiformis*/ *T. pruinosa* on playa edge;
- OD-MWS1 is described as mid mallee shrubland of *Eucalyptus concinna* over low woodland of *Acacia caesaneura* and shrubland of *Acacia ramulosa* var. *ramulosa* over low shrubland of *Ptilotus obovatus* in open depression;
- RH-AFW1 is described as mid open woodland of *Acacia caesaneura*/ *A. mulganeura*/ *A. quadrimarginea* over open shrubland of *Acacia ramulosa* var. *ramulosa*/ *Dodonaea lobulata* and low open shrubland of *Ptilotus obovatus* on rocky-hillslope;
- RH-CFW1 is described as mid woodland of *Casuarina pauper* over mid shrubland of *Scaevola spinescens*/ *Dodonaea lobulata* and low shrubland of *Ptilotus obovatus* on rocky-hillslope;
- RH-EW1 is described as mid woodland of *Eucalyptus lesouefii* over open low shrubland of *Scaevola spinescens*/ *Eremophila parvifolia* and *Ptilotus obovatus* on a rocky-hillslope;

- RH-MWS1 is described as mid mallee shrubland of *Eucalyptus celastroides* over low shrubland of *Acacia ramulosa* var. *ramulosa* and low hummock grassland of *Triodia scariosa* on rocky-hillslope; and
- SD-AFW1 is described as low woodland of *Acacia incurvaneura*/ *A. ramulosa* over mid shrubland of *Eremophila miniata* and low chenopod shrubland of *Atriplex vesicaria* on sand dune.



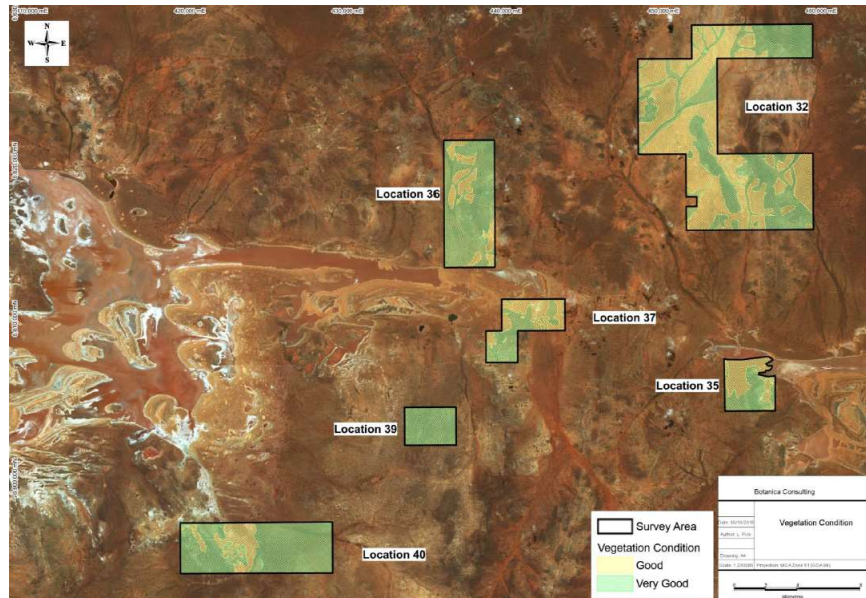
Vegetation types map taken from Botanica Consulting reconnaissance survey 2018

Vegetation Condition

Vegetation condition within this assessment has been assessed using the vegetation condition scale developed by Keighery (1994). All references to vegetation condition throughout this assessment therefore, reference this scale.

A reconnaissance survey by Botanica Consulting in October 2018 identified the vegetation within Lot 35 as predominately in good to very good condition. Vegetation condition was allocated by vegetation type being;

- CLP-AFW1 is in good condition;
- CLP-CFW1 is in good condition;
- CLP-EW1 is in very good condition;
- CLP-EW2 is in good condition;
- CD-CSSSF1 is in very good condition;
- OD-MWS1 is in very good condition;
- RH-AFW1 is in very good condition;
- RH-CFW1 is in very good condition;
- RH-EW1 is in very good condition;
- RH-MWS1 is in very good condition; and
- SD-AFW1 is in good condition.



Vegetation condition map taken from Botanica Consulting reconnaissance survey 2018.

Local area

The local area is defined as 20 kilometres from the edge of the application areas.

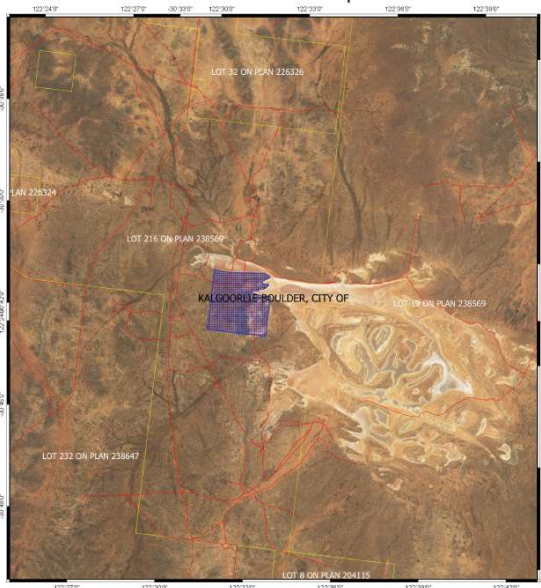


Figure 1 – Application area

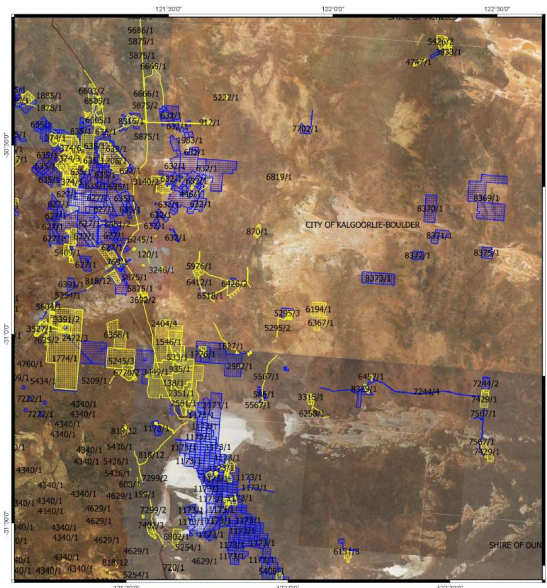


Figure 2 – Local context

3. Assessment of application against clearing principles

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

Proposed clearing may be at variance to this Principle

As assessed within Principle (e), the local area is highly vegetated retaining approximately 100 per cent native vegetation. A reconnaissance survey by Botanica Consulting in October 2018 determined that the vegetation under application is consistent with surrounding vegetation.

No threatened flora have been recorded within the application area. No threatened (TEC) or priority (PEC) ecological communities have been recorded within the application area. A reconnaissance survey by Botanica Consulting in October 2018 did not identify any threatened flora or vegetation consistent with a TEC or PEC, however, the associated likelihood of occurrence assessment identified suitable habitat for two threatened flora taxa within the application area. Given this, the application area may contain threatened flora, although it is not likely to contain TEC or PEC environmental values.

No flora species listed as Priority by the Department of Biodiversity Conservation and Attractions (DBCA) have been mapped within the application area. A reconnaissance survey by Botanica Consulting in October 2018 did not identify any Priority flora, however, a likelihood of occurrence assessment determined that 10 priority flora were likely to have suitable habitat within the application area.

As assessed within Principle (b), mapping indicates that the proposed clearing area may contain habitat for the Malleefowl (*Leipoa ocellata*; Threatened), Peregrine Falcon (*Falco peregrinus*; International Agreement), Night Parrot (*Pezoporus occidentalis*; Threatened), Princess Parrot (*Polytelis alexandrae*; Threatened) and Central Long-eared Bat (*Nyctophilus major tor*; P4). A reconnaissance survey determined that suitable habitat for these species may be present within the application area. Given the species are known from the local area and suitable habitat may be present within the application area, they may be impacted by the proposed clearing if suitable habitat is not avoided. Conditioning a clearing permit to ensure that critical habitat for these species is not impacted by the proposed clearing will reduce the potential impact to this species.

As the proposed clearing may contain suitable habitat for conservation significant flora and fauna the proposed clearing may be at variance to this Principle.

A reconnaissance survey by Botanica Consulting in October 2018 recommends targeted flora and Malleefowl surveys prior to clearing.

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Proposed clearing may be at variance to this Principle

A reconnaissance survey by Botanica Consulting in October 2018 identified the proposed clearing may contain habitat for the Malleefowl (*Leipoa ocellata*; Threatened), Peregrine Falcon (*Falco peregrinus*; International Agreement), Night Parrot (*Pezoporus occidentalis*; Threatened), Princess Parrot (*Polytelis alexandrae*; Threatened) and Central Long-eared Bat (*Nyctophilus major tor*; P4). As suitable habitat for these species may be present within the application area and the species are known from the local area, they may be impacted by the proposed clearing. Conditioning a clearing permit to ensure that critical habitat for these species is not impacted by the proposed clearing will reduce the potential impact to this species. Malleefowl are known from the local area and were assessed as possibly occurring within the application area.

The Department of Biodiversity Conservation and Attractions (DBCA) have recorded Malleefowl in the local area. Malleefowl generally occur in semi-arid areas of Western Australia's South West. They nest in a large mound of sand or soil and organic matter, prefer vegetation with a dense understorey of shrubs and their breeding habitat is characterised by light soil and an abundant leaf litter, which is used in the construction of nesting mounds. Density of the canopy cover is an important feature associated with high breeding densities, with grazed areas generally having much lower densities. In the WA Wheatbelt, Malleefowl distribution is associated with landscapes with lower rainfall, greater amounts of mallee and shrubland that occur as large remnants, and lighter soil surface textures. A reconnaissance survey by Botanica Consulting in October 2018 recommended Malleefowl surveys prior to clearing. Conditioning a clearing permit to ensure that critical habitat is not impacted by the proposed clearing would assist in reducing the potential impact to this species.

Habitat utilisation for the Peregrine Falcon (*Falco peregrinus*; International Agreement), Night Parrot (*Pezoporus occidentalis*; Threatened), Princess Parrot (*Polytelis alexandrae*; Threatened) and Central Long-eared Bat (*Nyctophilus major tor*; P4) is likely to be transitional in nature within the areas proposed to be cleared as these species have large home ranges. Cumulative impacts of clearing in this area may impact the quality and opportunity for breeding in the local area for these species.

Given the above, the proposed clearing may be at variance to this Principle. Fauna management conditions are likely to minimise the risks of the proposed clearing to these species.

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

Proposed clearing may be at variance to this Principle

No threatened flora have been recorded within the local area. A reconnaissance survey of Lot 35 was conducted by Botanica Consulting in October 2018. The flora survey did not identify any threatened flora within the survey areas. A likelihood of occurrence assessment identified suitable habitat for two threatened flora taxa within the survey area.

Given the above, the proposed clearing may be at variance to this Principle. Flora management conditions would mitigate the risks of the proposed clearing on these species.

(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.

Proposed clearing is not likely to be at variance to this Principle

No State listed TEC's have been recorded within the local area. A reconnaissance survey by Botanica Consulting in October 2018 of Lot 35, did not identify any vegetation consistent with a State listed TEC within the application area.

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

(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.

Proposed clearing is not at variance to this Principle

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The mapped Interim Biogeographic Region of Australia (IBRA) bioregion, Coolgardie, retains 97 per cent native vegetation. All mapped Beard vegetation associations within the application area, retain above 93 per cent of their pre-European extent within the Coolgardie IBRA Bioregion. The local area retains approximately 100 per cent native vegetation. As the mapped vegetation associations and the local area occur significantly above the 30 per cent threshold, the proposed clearing does not occur within a highly cleared landscape.

Given the above, the proposed clearing is not at variance to this Principle.

Table 1: Vegetation extents.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Coolgardie	12,912,204	12,648,491	97	17
Beard Vegetation Association in Bioregion*				
125	545,717	506,802	93	7
480	37,354	37,354	100	na
481	809,118	809,020	100	5
Local Area				
20 kilometre radius	45,453	45,453	100	-

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

Proposed clearing is at variance this Principle

Minor, non-perennial watercourses and lakes are mapped within the application area. Each of these originates within, or in close proximity to the application area. A reconnaissance survey by Botanica Consulting in October 2018 identified 4 vegetation types associated with open or closed depressions. Two of these vegetation types occur within Lot 35.

Creeklines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall (Kern, 1995). Given the lack of identified riparian vegetation associated with the watercourses, the mapped watercourses are likely to represent these minor creek lines. Two wetlands are present within the application area and the application area is adjacent to a significant lake.

A reconnaissance survey by Botanica Consulting in October 2018 identified three introduced taxa within the survey area.

Given the above, the proposed clearing includes vegetation growing in association with a wetland or watercourse and is at variance to this Principle. Given the presence of weeds within the application area it is likely that these weeds will spread along the watercourse areas and degrade their environmental value.

Watercourse management conditions to protect the quality of these watercourses and minimise the spread of weeds through these surface water expression areas are likely to minimise the impacts to watercourses and wetlands.

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Proposed clearing is not likely to be at variance to this Principle

The application area is mapped within the following rangeland soil systems;

- MX43 system is described as gently undulating valley plains and pediments; some outcrop of basic rock;
- Carnegie Land System is described as salt lakes with fringing saline alluvial plains, kopi dunes and sandy banks, supporting halophytic shrublands and acacia tall shrublands and
- Carnegie lake bed subsystem is described as bare lake beds inundated for short periods after rain.

Minor, non-perennial watercourses and wetlands are mapped within the application area. Each of the watercourses originates within or in close proximity to the application area. Rainfall is mapped as 300 millimetres per year with an evapotranspiration rate of 300 millimetres per year.

As assessed within Principle (f), creeklines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall. Two wetlands are present within the application area and the application area is adjacent to a significant lake.

The proposed clearing is for mineral exploration and therefore it is unlikely that the clearing will leave large areas of exposed soils. Given the above, the proposed clearing is not likely to be at variance to this Principle.

Further, the applicant has agreed to revegetate temporarily cleared areas reducing any potential impacts associated with land degradation from the exposure of soils through vegetation clearing.

(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.

Proposed clearing is not likely to be at variance to this Principle

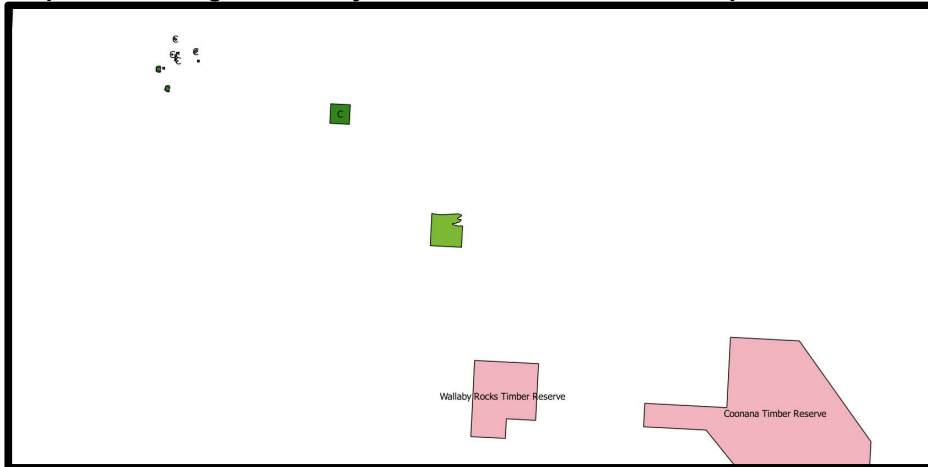


Figure 3: Lot 35 (light green) in relation to nearby conservation areas (dark green and pink, labelled).

The application area does not include, nor is it adjacent to any managed or unmanaged conservation areas. No conservation areas occur within 10km of the application area. One unmanaged conservation area occurs approximately 11 kilometres north west of the application area. The closest managed conservation area is Wallaby Rocks Timber Reserve, managed by DBCA, located approximately 12 kilometres south west of the application area.

Given this, the proposed clearing is not likely to be at variance to this Principle.

(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.

Proposed clearing is not likely to be at variance to this Principle

As assessed within Principle (e), the local area is extensively vegetated retaining approximately 100 per cent native vegetation. As assessed within Principle (f), creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall. Two wetlands are present within the application area and the application area is adjacent to a significant lake.

Given the extent of native vegetation within the local area, the proposed clearing is not likely to deteriorate the quality of underground water.

Given the size of clearing within the clearing envelope, the nature of the watercourses and wetlands within the application area, the proposed clearing is not likely to impact on the quality of surface water.

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

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Proposed clearing is not likely to be a variance to this Principle

As assessed within Principles (e), (f) and (g), the local area is extensively vegetated retaining approximately 100 per cent native vegetation, creek lines in the region are dry for most of the year only flowing briefly immediately following significant rainfall. Two significant wetlands are present within the application area and the application area is adjacent to a significant lake. Annual rainfall within the region is low at 300 millimetres.

Given that there are a number of methods for water dispersal within the application area it is unlikely that the proposed clearing will cause, or exacerbate, the incidence or intensity of flooding and therefore is not likely to be at variance to this Principle.

Planning instruments and other relevant matters.

No Aboriginal sites of significance have been mapped within the application area.

The clearing permit application was advertised on the DWER website on 13 March 2019 with a 21 day submission period. No submissions were received.

The applicant amended the purpose for clearing during the assessment process to only include Mineral Exploration.

4. References

- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
Government of Western Australia (2018) 2017 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of February 2018. WA Department of Parks and Wildlife, Perth.
Botanica Consulting (2018) Reconnaissance Flora/Vegetation & Fauna Survey East Locations 40, 39, 37, 36, 35, and 32, December 2018. DWER ref:A1766468.
Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
Kern, A.M. (1995) Hydrogeology of the Kalgoorlie 1:250 000 Sheet. Geological Survey of Western Australia, 1:250 000 Hydrogeological Series Explanatory Notes, 16p, Western Australia.
Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Parks and Wildlife. <http://florabase.dpaw.wa.gov.au/> (Accessed February 2019).

GIS Database List

- SAC Bio datasets (February 2019)
- Hydrography, linear
- Aboriginal Sites of Significance
- RIWI Areas
- Hydrography, linear
- Groundwater Salinity
- Pre-European vegetation
- DPaW Estate
- Soils, statewide
- Salinity Risk