



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8409/3
Permit Holder:	Atlas Iron Pty Ltd
Duration of Permit:	15 June 2019 to 30 April 2021

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 purposes of road upgrades, geotechnical and water investigations, water infrastructure, and road maintenance.

2. Land on which clearing is to be done

Corunna Downs Road reserve (PIN 11734822), Marble Bar
Crown Reserve 13676, Marble Bar
Crown Reserve 2906, Marble Bar
Halse Road reserve (PIN 11412373), Marble Bar
Hillside - Marble Bar Road reserve (PINs 11734807, 11734808, 11734809, 11734810, 11734811, 11734814), Marble Bar
Limestone - Marble Bar Road reserve (PIN 11997584), Marble Bar
Lot 111 on Plan 238589 (Pastoral Lease N049987), Marble Bar
Lot 266 on Plan 213709 (Crown Reserve 33941), Marble Bar
Lot 350 on Plan 49438 (Crown Reserve 2906), Marble Bar
Lot 148 on Plan 93594 (Crown Reserve 2906), Marble Bar
Lot 85 on Plan 189228 (Crown Reserve 41179), Marble Bar
Unallocated Crown Land (PIN 1017726), Marble Bar
Unallocated Crown Land (PIN 1017731), Marble Bar
Unnamed Road reserve (PIN 11734489), Marble Bar

3. Area of clearing

The Permit Holder must not clear more than 142 hectares of native vegetation within the area cross-hatched yellow on attached Plan 8409/3a.

4. 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

5. 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.

6. 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*:

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

7. Vegetation management - flora and fauna habitat

The Permit Holder shall not clear native vegetation within the area shaded red on attached Plan 8409/3b for the purpose of temporary construction areas, water infrastructure or extraction of borrow material, with the exception of minor access tracks to these areas.

8. Vegetation management - watercourse

The Permit Holder shall not clear the *riparian vegetation* of any *watercourse* or *wetland* within the area cross-hatched yellow on attached Plan 8409/3a for the purpose of temporary construction areas, water infrastructure or extraction of borrow material, with the exception of minor access tracks to these areas.

9. Flora management

The Permit Holder shall ensure that no clearing of native vegetation within 10 metres of *Swainsona thompsoniana* occurs.

10. Retain vegetative material and topsoil, 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) by 30 April 2021, *revegetate* and *rehabilitate* the areas that are no longer required for the purpose for which they were cleared under this Permit by:
 - (i) re-shaping the surface of the land so that it is consistent with the surrounding 5 metres of uncleared land;
 - (ii) ripping the ground on the contour to remove soil compaction; and
 - (iii) laying the vegetative material and topsoil retained under Condition 10(a) on the cleared area.

PART III - RECORD KEEPING AND REPORTING

11. 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;
 - (iv) the size of the area cleared (in hectares);
 - (v) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 5 of the Permit; and
 - (vi) actions taken to minimise the risk of the introduction and spread of *weeds* in accordance with condition 6 of this Permit.

- (b) In relation to the revegetation and rehabilitation of areas pursuant to condition 10 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; and
 - (iii) the size of the area revegetated and rehabilitated (in hectares).

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 under condition 11 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) 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.
- (c) Prior to 30 April 2021, the Permit Holder must provide to the CEO a written report of records required under condition 11 of this Permit where these records have not already been provided under condition 12(a) of this Permit.

DEFINITIONS

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

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

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;

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; **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.

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 Parks and Wildlife 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.

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Erika Eto
A/MANAGER
NATIVE VEGETATION REGULATION

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

28 January 2021
CPS 8409/3, 28 January 2021

Plan 8409/3a

119°39'7.200"E

119°41'27.600"E

119°43'48.000"E

119°46'8.400"E

21°10'37.200"S

21°12'57.600"S

21°15'18.000"S

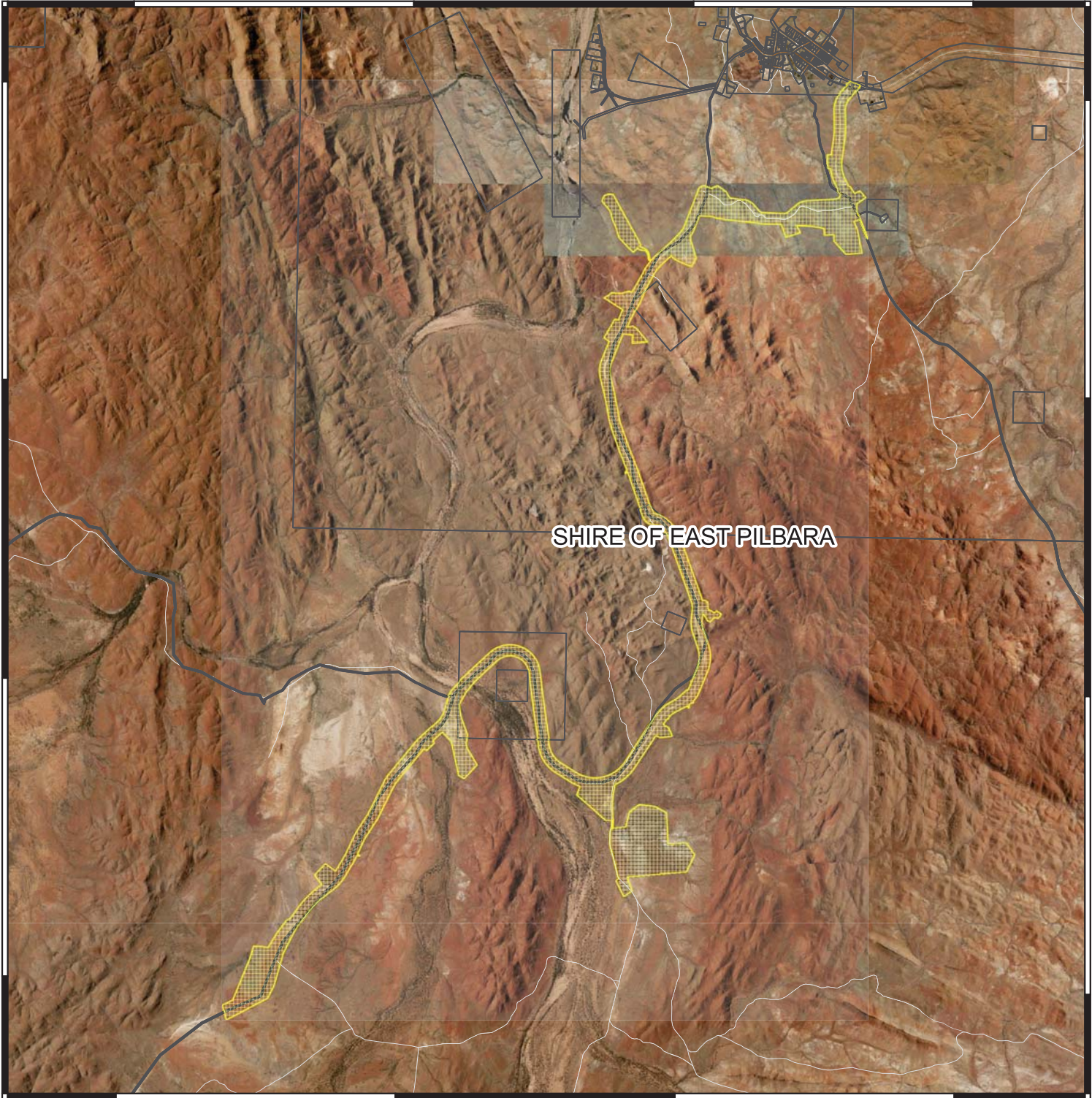
21°17'38.400"S

21°10'37.200"S

21°12'57.600"S

21°15'18.000"S

21°17'38.400"S



SHIRE OF EAST PILBARA




119°39'7.200"E

119°41'27.600"E



119°43'48.000"E

119°46'8.400"E

Legend

-  CPS areas approved to clear
-  Land Tenure (Landgate - 226)
-  Local Government Authorities

Road Centrelines

-  Local Rd - Sealed
-  No Classification



0 1 2 3 4 km



1:80000

MGA Zone 50
Geocentric Datum of Australia 1994

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Officer delegated under section 20 of the
Environmental Protection Act 1986



GOVERNMENT OF
WESTERN AUSTRALIA

Plan 8409/3b

119°39'7.200"E

119°41'27.600"E

119°43'48.000"E

119°46'8.400"E

21°10'37.200"S

21°12'57.600"S

21°15'18.000"S

21°17'38.400"S

21°10'37.200"S

21°12'57.600"S

21°15'18.000"S

21°17'38.400"S









119°39'7.200"E

119°41'27.600"E

119°43'48.000"E

119°46'8.400"E

Legend

-  CPS subject to conditions
-  CPS areas approved to clear
-  Land Tenure (Landgate - 226)
-  Local Government Authorities
- Road Centrelines
 -  Local Rd - Sealed
 -  No Classification



0 1 2 3 4 km



1:80000

MGA Zone 50
Geocentric Datum of Australia 1994

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Officer delegated under section 20 of the
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GOVERNMENT OF
WESTERN AUSTRALIA



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 8409/3
Permit type:	Purpose permit
Applicant name:	Atlas Iron Pty Ltd
Application received:	19 November 2020
Application area:	142 hectares of native vegetation
Purpose of clearing:	Road upgrades and maintenance, geotechnical and water investigations, and water infrastructure.
Method of clearing:	Mechanical
Property:	Corunna Downs Road Reserve (PIN 11734822) Crown Reserve 13676 Crown Reserve 2906 Halse Road Reserve (PIN 11412373) Hillside-Marble Bar Road Reserve (PINs 11734807, 11734808, 11734809, 11734810, 11734811, 11734814) Limestone-Marble Bar Road Reserve (PIN 11997584) Lot 85 on Plan 189228, Marble Bar (Crown Reserve 41179) Lot 111 on Plan 238589, Marble Bar (Pastoral Lease N049987) Lot 148 on Plan 93594, Marble Bar (Crown Reserve 2906) Lot 350 on Plan 49438, Marble Bar (Crown Reserve 2906) Lot 266 on Plan 213709, Marble Bar (Crown Reserve 33941) Unallocated Crown Land (PIN 1017726) Unallocated Crown Land (PIN 1017731) Unnamed Road Reserve (PIN 11734489)
Location (LGA area):	Shire of East Pilbara
Localities (suburb):	Marble Bar

1.2. Description of clearing activities

The proposed amendment to clearing permit CPS 8409/2 is for the purpose of:

- Amending the Permit Holder details to Atlas Iron Pty Ltd;
- Amending the purpose for which clearing may be done to include road maintenance. The proposed amended purpose is “road upgrades and maintenance, geotechnical and water investigations, and water infrastructure”;

- Extending the duration of the permit by 3 months to 30 April 2021, to align with Atlas Iron Pty Ltd's existing Licence to Occupy Crown Land under the *Land Administration Act 1997* ('section 91 Licence') over the area under application; and
- Amending Condition 10(b) to extend the date by which revegetation and rehabilitation activities must be completed to 30 April 2021, to align with the existing section 91 Licence over the land.

Clearing permit CPS 8409/2 allowed for the clearing of no more than 142 hectares within a footprint of 642.6 hectares within various lots in Marble Bar, for the purpose of road upgrades, geotechnical and water investigations, and water infrastructure. The entire clearing permit footprint sought under CPS 8409/3 is unchanged and remains no more than 142 hectares within a footprint of 642.6 hectares (see Figure 1, Section 1.5).

1.3. Decision on application

Decision:	Granted
Decision date:	28 January 2021
Decision area:	142 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, 51M 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 no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix A), relevant datasets (see Appendix E.2), the findings of flora, vegetation and fauna surveys (see Appendix D), the clearing principles set out in Schedule 5 of the EP Act (see Appendix B), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The Delegated Officer also took into consideration that the proposed amendments relate only to:

- extending the permit duration;
- extending the duration in which revegetation and rehabilitation must be undertaken;
- a minor addition to the purpose of clearing; and
- that no modifications to the clearing footprint or approved clearing area have been proposed.

The Delegated Officer noted that the Permit Holder originally proposed to extend the permit duration by five years to 31 January 2026 and to extend the date by which revegetation and rehabilitation activities must be completed to 31 January 2022. However, noting that authority to access the land under an existing section 91 Licence was valid to 30 April 2021, the Delegated Officer determined to extend both durations to 30 April 2021, to ensure that the Permit Holder has authority to access the land for life of the permit, to undertake clearing, revegetation and rehabilitation activities.

The Delegated Officer considered that the assessment has not changed since the assessment for clearing permits CPS 8409/1 and CPS 8409/2, and that the existing avoid and minimise, weed control, vegetation management, flora management, and revegetation and rehabilitation conditions are sufficient to limit the impacts of the proposed clearing. The Delegated Officer determined that, given the nature of the proposed amendments and the existing permit conditions, the proposed amendments are not likely to lead to an unacceptable risk to environmental values.

1.5. Site map

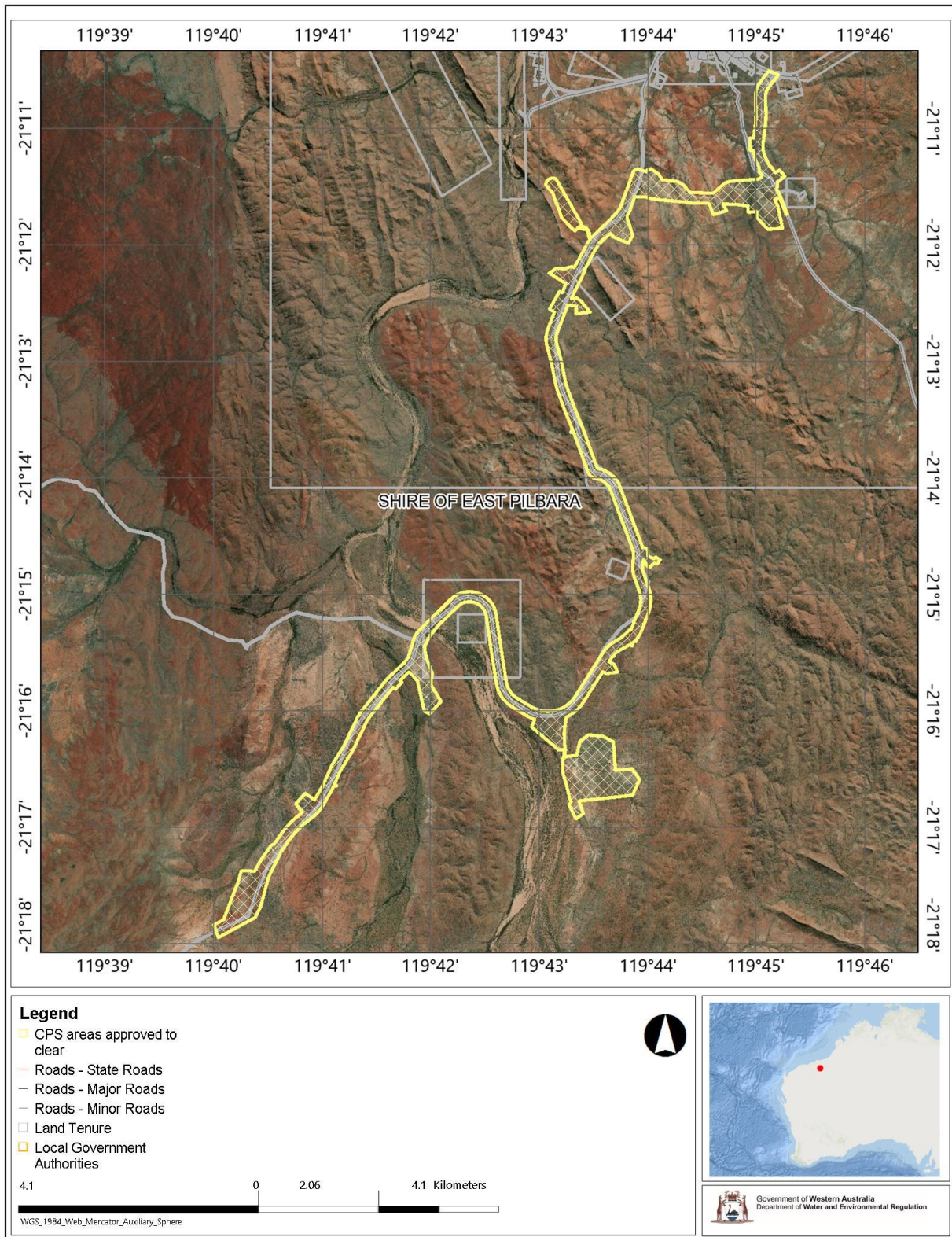


Figure 1. The area crosshatched yellow indicates the area authorised to be cleared under the granted clearing permit.

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.

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

The applicant advised that the proposed works had been planned to utilise existing road infrastructure and minimise the clearing of native vegetation required, where the alternative was the construction of a new road with a greater clearing footprint (Atlas Iron Limited, 2019a).

The applicant also made numerous commitments during the assessment of the previous versions of the permit, to minimise impacts to environmental values. This included a commitment to limit clearing within suitable habitat for conservation significant flora and fauna, where only minor clearing for access tracks would occur in these areas and all secondary infrastructure (temporary laydown areas, water infrastructure), borrow pits, and geotechnical and water investigations would occur outside of these areas (Atlas Iron Limited, 2017; Atlas Iron Limited, 2019b). The applicant also committed to avoid the clearing of riparian vegetation and to revegetate areas that had been cleared for temporary infrastructure (Atlas Iron Limited, 2017; Atlas Iron Limited, 2019b).

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. Assessment of impacts on environmental values

A review of current environmental information (see Appendix A) reveals that the assessment against the clearing principles has not changed from Clearing Permit CPS 8409/1. The Delegated Officer considered that the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values, also remains unchanged from the original assessment under Clearing Permit CPS 8409/1. Noting the above and that no modifications to the clearing footprint or approved clearing area have been proposed, the Delegated Officer considered that the existing conditions under Clearing Permit CPS 8409/2 are sufficient to limit the impacts of the proposed clearing and that the proposed clearing can be managed to be environmentally acceptable with the existing avoid and minimise, weed control, vegetation management, flora management, and revegetation and rehabilitation conditions.

3.3. Relevant planning instruments and other matters

The amendment application was advertised on the Department of Water and Environmental Regulation's website on 3 December 2020, inviting submissions from the public within a 14 day period. No submissions were received in relation to this application.

The Shire of East Pilbara were invited to provide comment on the proposed amendment to CPS 8409/3. No comments were received.

The assessment against other *Relevant planning instruments and other matters* is unchanged and can be found in the decision report for Clearing Permit CPS 8409/1.

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is unchanged from Clearing Permit CPS 8409/2 and includes 142 hectares of native vegetation within a linear footprint of 642.6 hectares in the extensive land use zone of Western Australia. The proposed clearing area includes existing road infrastructure and is surrounded by an extensive area of remnant vegetation, adjacent to previously cleared areas for residential use and mining purposes.</p> <p>Spatial data indicates the local area (50 kilometre radius from the centre of the area proposed to be cleared) retains approximately 99.94 per cent of the original native vegetation cover (see Appendix A.2).</p>
Ecological linkage	<p>There are no mapped ecological linkages intersecting the area proposed to be cleared. Given the application area is part of an extensive area of remnant vegetation, it is not considered likely to form a significant ecological linkage in the local area.</p>
Conservation areas	<p>The closest conservation areas are Mungaroo Range Nature Reserve and Eighty Mile Beach Marine park, which respectively occur 124 kilometres south-west and 124 kilometres north of the clearing area.</p>
Vegetation description	<p>The area of vegetation proposed to be cleared is unchanged from Clearing Permits CPS 8409/1 and CPS 8409/2. A Level 2 flora and vegetation survey undertaken by Woodman Environmental Consulting Pty Ltd (Woodman) in 2016 to support the original assessment of Clearing Permit CPS 8409/1 indicates the vegetation within the proposed clearing area consists of 12 vegetation types, including:</p> <ul style="list-style-type: none"> • VT1: Mid sparse shrubland dominated by mixed <i>Acacia</i> species over low sparse shrubland of mixed species including <i>Acacia stellaticeps</i>, <i>Pluchea tetranthera</i> and <i>Eremophila latrobei</i> subsp. <i>glabra</i> over low hummock grassland dominated by <i>Triodia epactia</i> on grey to brown sand to clay loam with occasional granite outcropping, on stony plains, low hills or sandy dunes; • VT2: Tall to mid open shrubland dominated by mixed <i>Acacia</i> species including <i>Acacia eriopoda</i> and <i>Acacia maitlandii</i> over low sparse shrubland of mixed species including <i>Acacia stellaticeps</i>, <i>Corchorus parviflorus</i> and <i>Corchorus laniflorus</i> over low hummock grassland dominated mainly by <i>Triodia epactia</i> on red-brown sandy clay to clay loam, on granite outcrops to stony plains and drainage lines with exposed granite; • VT4: Low open woodland usually dominated by <i>Corymbia hamersleyana</i> over tall sparse shrubland dominated by mixed <i>Acacia</i> species including <i>Acacia trachycarpa</i> and <i>Acacia ancistrocarpa</i> with <i>Dichrostachys spicata</i> over low hummock grassland dominated by species including <i>Triodia wiseana</i> and <i>Triodia epactia</i>, with <i>Eragrostis eriopoda</i> on brown sandy loams on plains and drainage lines; • VT5: Mid sparse shrubland of mixed <i>Acacia</i> species usually dominated by <i>Acacia synchronicia</i> over low hummock grassland dominated by various <i>Triodia</i> species including <i>Triodia epactia</i>, <i>Triodia wiseana</i> and <i>Triodia longiceps</i> on brown clay loams on stony plains and base of low hills; • VT6: Tall hummock grassland dominated by <i>Triodia longiceps</i> with tall isolated shrubs of <i>Acacia synchronicia</i> on red or brown sandy to clay loams on stony plains, interspersed with low sparse forbland of mixed species including <i>Sida fibulifera</i>, <i>Rhynchosia minima</i>, <i>Tephrosia</i> sp. clay soils (S. van Leeuwen et al. PBS 0273), <i>Crotalaria dissitiflora</i> subsp. <i>benthamiana</i>, <i>Cullen graveolens</i> and <i>Eriachne flaccida</i> on brown cracking clay in clay pans; • VT7: Tall sparse shrubland dominated by species including <i>Acacia bivenosa</i>, <i>Acacia synchronicia</i> and <i>Dichrostachys spicata</i> over mid hummock grassland dominated by <i>Triodia longiceps</i> over sparse tussock grassland and chenopod shrubland dominated by <i>*Cenchrus ciliaris</i> and <i>Sclerolaena hostilis</i> on brown clay loam on flats and in open depressions;

Characteristic	Details
	<ul style="list-style-type: none"> • VT8: Low isolated shrubs dominated by <i>Melaleuca glomerata</i> over mid hummock grassland dominated by <i>Triodia longiceps</i> over low mixed sedgeland, grassland and forbland of mixed species including <i>Schoenus falcatus</i>, <i>Trianthema cussackiana</i> and <i>Stemodia grossa</i> on white to brown clay to clayey sand with occasional calcrete and dolerite stones, at the head of drainage lines; • VT9: Low open woodland to isolated trees to <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i> and/or <i>Corymbia hamersleyana</i> over tall sparse shrubland of mixed species usually dominated by <i>Acacia orthocarpa</i>, <i>Acacia monticola</i>, <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Grevillea wickhamii</i> over low shrubland to sparse shrubland of mixed species dominated by <i>Acacia ptychophylla</i>, <i>Acacia spondylophylla</i>, <i>Goodenia stobbsiana</i>, <i>Dampiera candicans</i> and <i>Ptilotus calostachyus</i> over low hummock grassland dominated by <i>Triodia epactia</i> and occasionally <i>Triodia brizoides</i> on red to brown clay loam usually over ironstone or metamorphosed granite outcropping; • VT11: Low isolated trees of <i>Corymbia hamersleyana</i> over tall sparse shrubland dominated by <i>Acacia inaequilatera</i> and often <i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i> over low sparse shrubland dominated by <i>Corchorus parviflorus</i>, <i>Indigofera monophylla</i> and <i>Senna glutinosa</i> subsp. <i>glutinosa</i> over low hummock grassland dominated by <i>Triodia wiseana</i> and/or <i>Triodia epactia</i> on red to brown clay loam often with dolerite or occasionally quartz or metamorphosed granite outcropping, on low hills, ridges and occasionally undulating plains; • VT12: Low open woodland of <i>Corymbia hamersleyana</i> over mid sparse shrubland dominated by <i>Acacia bivenosa</i> over low sparse shrubland of mixed species including <i>Corchorus parviflorus</i>, <i>Heliotropium cunninghamii</i>, <i>Indigofera monophylla</i> and <i>Pluchea ferdinandi-muelleri</i> over low hummock grassland dominated by <i>Triodia wiseana</i> and/or <i>Triodia angusta</i> or <i>Triodia longiceps</i> on brown clay loam on stony undulating plains and low rises often with calcrete outcropping; • VT14: Mid open woodland of mixed species including <i>Eucalyptus victrix</i> and <i>Corymbia hamersleyana</i> over tall open to sparse shrubland of mixed species including <i>Acacia coriacea</i> subsp. <i>pendens</i>, <i>Acacia trachycarpa</i>, <i>Acacia pyrifolia</i> var. <i>pyrifolia</i>, <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Melaleuca glomerata</i> over low sparse shrubland of mixed species including <i>Pluchea ferdinandi-muelleri</i>, <i>Cajanus pubescens</i> and <i>Stemodia grossa</i> over mid open grassland and sedgeland of mixed species dominated by <i>*Cenchrus ciliaris</i>, <i>Triodia longiceps</i>, <i>Triodia epactia</i>, <i>Chrysopogon fallax</i> and <i>Cyperus vaginatus</i> on red to brown sand to sandy loam with river stones in minor to medium drainage lines; and • VT15: Mid open forest to woodland dominated by <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> and occasionally <i>Eucalyptus victrix</i> over tall open shrubland dominated by species including <i>Acacia ampliceps</i>, <i>Melaleuca glomerata</i> and <i>Acacia pyrifolia</i> var. <i>pyrifolia</i> over mixed mid open grassland and sedgeland dominated by <i>*Cenchrus ciliaris</i>, <i>Cyperus vaginatus</i> and <i>Triodia longiceps</i> on red to brown sandy to clay loam with river stone in major drainage lines (Woodman, 2016). <p>*denotes a weed species.</p> <p>The full survey mapping is available in Appendix D.</p> <p>This is broadly consistent with the mapped Beard vegetation associations:</p> <ul style="list-style-type: none"> • 82, which is described as hummock grasslands, low tree steppe; snappy gum over <i>Triodia wiseana</i>; • 93, which is described as hummock grasslands, shrub steppe; kanji over soft spinifex; • 171, which is described as hummock grasslands, low tree steppe; snappy gum over soft spinifex and <i>Triodia brizoides</i>; • 587, which is described as a mosaic including hummock grasslands, open low tree-steppe; snappy gum over <i>Triodia wiseana</i> / hummock grasslands, shrub-steppe; kanji over <i>Triodia pungens</i>; • 619, which is described as medium woodland of river gum (<i>Eucalyptus camaldulensis</i>) (Shepherd et al, 2001).

Characteristic	Details
Vegetation condition	<p>A Level 2 flora and vegetation survey undertaken by Woodman Environmental Consulting Pty Ltd (Woodman) in 2016 to support the original assessment of Clearing Permit CPS 8409/1 indicates the vegetation within the proposed clearing area is in Excellent to Poor (Trudgen, 1991) condition (Woodman, 2016), described as:</p> <ul style="list-style-type: none"> • Excellent: Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement; and • 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 (Trudgen, 1991). <p>The full Trudgen (1991) condition rating scale is provided in Appendix C. The full survey mapping is available in Appendix D.</p>
Climate and landform	<p>The application area is located in the Pilbara region in generally mountainous areas, with peaks rising to 1250 metres (Woodman, 2016).</p> <p>The average rainfall and evapotranspiration rate for the area is 400 millimetres. Annual mean maximum temperature is 35.7°C and annual mean minimum temperature is 20.4°C.</p>
Soil description	<p>The soil is mapped within the following land systems:</p> <ul style="list-style-type: none"> • Rocklea System (280Rk), described as basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex and occasionally soft spinifex grasslands with scattered shrubs; • Satirist System (280St), described as stony plains and low rises supporting hard spinifex grasslands, and gilgai plains supporting tussock grasslands; • River System (280Ri), described as narrow, seasonally active flood plains and major river channels supporting moderately close, tall shrublands or woodlands of acacias and fringing communities of eucalypts sometimes with tussock grasses or spinifex; • Capricorn System (280Cp), described as rugged sandstone hills, ridges, stony footslopes and interfluves supporting low acacia shrublands or hard spinifex grasslands with scattered shrubs; and • Macroy System (280Mc), described as stony plains and occasional tor fields based on granite supporting hard and soft spinifex shrubby grasslands. (Schoknecht et al., 2004).
Land degradation risk	<p>The mapped soil types Rocklea System, Satirist System, Capricorn System, and Macroy System are considered to have a low to moderate risk of land degradation resulting from wind erosion, water erosion, salinity, subsurface acidification, phosphorus export, waterlogging or flooding (Van Vreeswyk et al., 2004).</p> <p>The River System has a moderate to high risk of land degradation resulting from salinity, wind erosion, water erosion, waterlogging and flooding, particularly in areas of red/brown non-cracking clays on alluvial plains and in drainage zones (Van Vreeswyk et al., 2004).</p>
Waterbodies	<p>The desktop assessment and aerial imagery indicated that the Coongan River and several associated minor non-perennial watercourses transect the area proposed to be cleared. The application area does not occur within any mapped wetlands.</p>
Hydrogeography	<p>The application area is mapped within the Pilbara Surface Water Area and the Pilbara Groundwater Area, both proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (the RIWI Act).</p> <p>The northern portion of the application area also intersects the Marble Bar Water Reserve, a Priority 1 Public Drinking Water Source Area (PDWSA) proclaimed under the <i>Country Areas Water Supply Act 1947</i> (the CAWS Act).</p>

Characteristic	Details
Flora	<p>The desktop assessment identified that a total of 25 threatened or priority flora species have been recorded within the local area, comprising seven Priority 1 (P1) flora, two Priority 2 (P2) flora, 14 Priority 3 (P3) flora, two Priority 4 (P4) flora, and one threatened flora (Western Australian Herbarium, 1998-).</p> <p>A Level 2 flora and vegetation survey did not identify any threatened flora species occurring within or adjacent to the application area (Woodman, 2016). However, two priority flora species, <i>Rostellularia adscendens</i> var. <i>latifolia</i> (P3) and <i>Swainsona thompsoniana</i> (P1), were recorded within the application area (Woodman, 2016). A further two priority flora species, <i>Cochlospermum macnamarae</i> and <i>Schoenus</i> sp. Marble Bar, and two undescribed species, <i>Portulaca</i> sp. and <i>Oldenlandia</i> sp., were considered as potentially occurring within the application area, with any impacts to these species considered significant (DBCA, 2017). The full flora and vegetation mapping is available at Appendix D.</p> <p>Given the area proposed to be cleared is unchanged from Clearing Permits CPS 8409/2 and that the existing permit includes conditions limiting clearing of suitable habitat for the aforementioned flora species, impacts to conservation significant flora species are considered to remain unchanged from the previous assessments and did not require further consideration.</p>
Ecological communities	<p>The desktop assessment identified no records of threatened or priority ecological communities within the local area. The closest record is an occurrence of the Stony saline clay plains of the Mosquito Land System priority ecological community (PEC), located approximately 63 kilometres south-east of the application area. The closest occurrence of a state-listed threatened ecological community (TEC) is the Species-rich faunal community of the intertidal mudflats of Roebuck Bay, located approximately 403 kilometres north-east of the application area.</p>
Fauna	<p>The desktop assessment identified that a total of 21 threatened or priority fauna species have been recorded within the local area, including six threatened fauna species, seven priority fauna species, seven fauna species protected under international agreement, and one other specially protected fauna species (DBCA, 2007-).</p> <p>A Level 1 fauna survey was undertaken by MWH in 2016 and identified that the habitat types present within the application area are may provide suitable habitat for 18 conservation significant fauna species, including the eastern great egret (<i>Ardea modesta</i>), <i>Ctenotus nigrilineatus</i>, <i>Ctenotus uber johnstonei</i>, northern quoll (<i>Dasyurus hallucatus</i>), grey falcon (<i>Falco hypoleucos</i>), peregrine falcon (<i>Falco peregrinus</i>), spectacled hare-wallaby (<i>Lagorchestes conspicillatus leichardti</i>), Pilbara olive python (<i>Liasis olivaceus barroni</i>), ghost bat (<i>Macroderma gigas</i>), western pebble-mound mouse (<i>Pseudomys chapmani</i>), Pilbara leaf-nosed bat (<i>Rhinonicteris aurantia</i>), long-tailed dunnart (<i>Sminthopsis longicaudata</i>), and six species of migratory bird (MWH, 2017). In particular, the survey identified that drainage line and riverine habitat types were of the highest significance to the aforementioned fauna species (MWH, 2017). The full fauna habitat mapping and descriptions are available in Appendix D.</p> <p>Given the area proposed to be cleared is unchanged from Clearing Permits CPS 8409/2 and that the existing permit includes conditions limiting clearing within the drainage line and riverine habitat types, impacts to conservation significant fauna species are considered to remain unchanged from the previous assessments and did not require further consideration.</p>

A.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Pilbara	17,808,657.04	17,731,764.88	99.57	1,802,099.28	10.12
Beard vegetation associations*					
82	2,565,901.28	2,553,206.19	99.51	295,377.96	11.51
93	3,044,293.40	3,040,639.40	99.88	59,536.96	1.96
171	331,951.73	330,643.09	99.61	36,093.44	10.87
587	580,726.60	580,696.99	99.99	123,367.39	21.24
619	119,074.85	118,167.58	99.24	236.34	0.2
Beard vegetation association in IBRA bioregion*					
82	2,563,583.23	2,550,888.14	99.5	295,377.96	11.52
93	3,042,114.27	3,038,471.67	99.88	59,536.96	1.96
171	331,307.41	330,026.24	99.61	36,093.44	10.89
587	580,726.60	580,696.99	99.99	123,367.39	21.24
619	118,920.31	118,116.78	99.32	236.08	0.2
Local area					
50 km radius	970,670.04	970,132.44	99.94	-	-

*Government of Western Australia (2019)

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p>Principle (a): "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p>Assessment: The area proposed to be cleared remains unchanged from previous version of this clearing permit, and may contain significant habitat for priority flora and conservation significant fauna species. However, existing permit conditions ensure that only minimal clearing for access tracks can occur within suitable habitat for conservation significant flora and fauna, and it is unlikely that significant impacts to these species will occur.</p>	<p>May be at variance</p> <p>(as per CPS 8409/1)</p>	No
<p>Principle (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>Assessment: The area proposed to be cleared remains unchanged from previous version of this clearing permit, and may contain significant habitat for conservation significant fauna species. However, existing permit conditions ensure that only minimal clearing for access tracks can occur within suitable</p>	<p>May be at variance</p> <p>(as per CPS 8409/1)</p>	No

Assessment against the clearing principles	Variance level	Is further consideration required?
habitat for conservation significant fauna, and it is unlikely that significant impacts to these species will occur.		
<p><u>Principle (c):</u> <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> The area proposed to be cleared remains unchanged from CPS 8409/1 and 8409/2 and is unlikely to contain significant habitat for any threatened flora species listed under the BC Act.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 8409/1)</p>	<p>No</p>
<p><u>Principle (d):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared remains unchanged from previous version of this clearing permit and does not contain species that are representative of any threatened ecological community listed under the BC Act.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 8409/1)</p>	<p>No</p>
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u> The extent of the mapped vegetation type and native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia.</p>	<p>Not at variance</p> <p>(as per CPS 8409/1)</p>	<p>No</p>
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u> Given the distance to and separation from the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of adjacent or nearby conservation areas.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 8409/1)</p>	<p>No</p>
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared remains unchanged from previous version of this clearing permit and is intersected by a number of water courses associated with the Coongan River. However, existing permit conditions ensure no clearing of riparian vegetation will occur and that all temporarily cleared areas are revegetated or rehabilitated. Therefore, the proposed clearing is unlikely to impact on- or off-site hydrology and water quality.</p>	<p>At variance</p> <p>(as per CPS 8409/1)</p>	<p>No</p>
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared remains unchanged from previous version of this clearing permit and is partially mapped within the River System, which is susceptible to land degradation resulting from salinity, wind erosion, water erosion, waterlogging and flooding. Given the above, the proposed clearing may have an appreciable impact on land degradation if these areas are left exposed. However, the area proposed to be cleared is within a linear footprint of 642.6 hectares along existing road infrastructure, and existing permit conditions ensure that no clearing of riparian vegetation occurs within the River System and that all temporarily cleared areas are revegetated or rehabilitated, which is expected to minimise the potential for significant land degradation.</p>	<p>May be at variance</p> <p>(as per CPS 8409/1)</p>	<p>No</p>

Assessment against the clearing principles	Variance level	Is further consideration required?
<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> Given the area proposed to be cleared intersects several water courses associated with the Coongan River and is mapped within proclaimed surface and groundwater areas and a PDWSA, the proposed clearing may impact surface or ground water quality. However, the existing permit conditions ensure that no clearing of riparian vegetation will occur and that all temporarily cleared areas are revegetated or rehabilitated, which is expected to minimise impacts to water quality.</p>	<p>May be at variance</p> <p>(as per CPS 8409/1)</p>	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> The area proposed to be cleared intersects several water courses associated with the Coongan River and is partially mapped within the River System, which is susceptible to waterlogging and flooding. Given the above, the proposed clearing may contribute to increased incidence or intensity of flooding. However, the existing permit conditions ensure that no clearing of riparian vegetation occurs within the River System and that all temporarily cleared areas are revegetated or rehabilitated, which is expected to minimise the potential for increased flooding events.</p>	<p>May be at variance</p> <p>(as per CPS 8409/1)</p>	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.

Condition	Description
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. Biological survey information excerpts

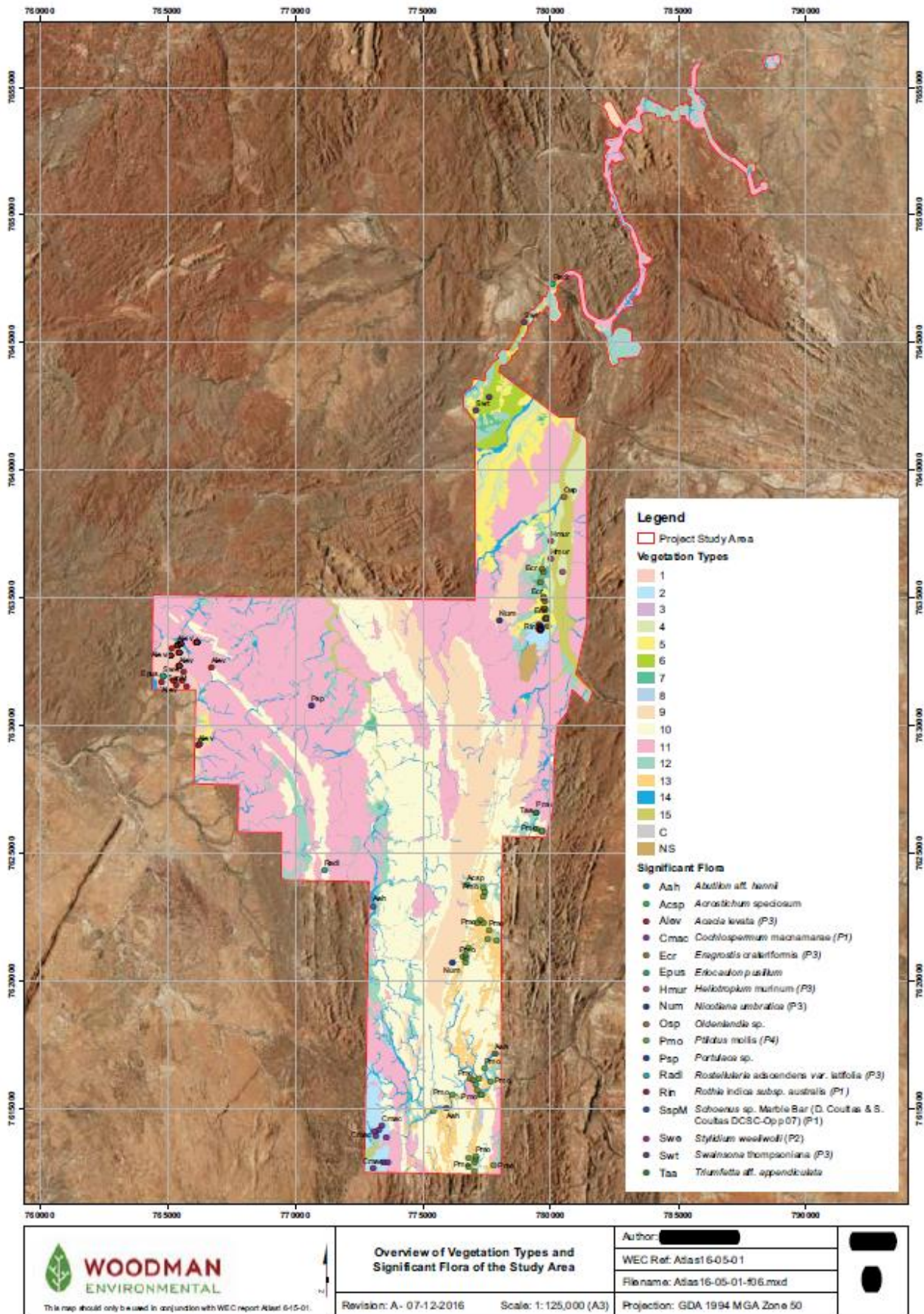


Figure 1. Vegetation type mapping of the area proposed to be cleared and additional project areas for Atlas Iron Limited, including location of conservation significant flora (Woodman Environmental, 2016).

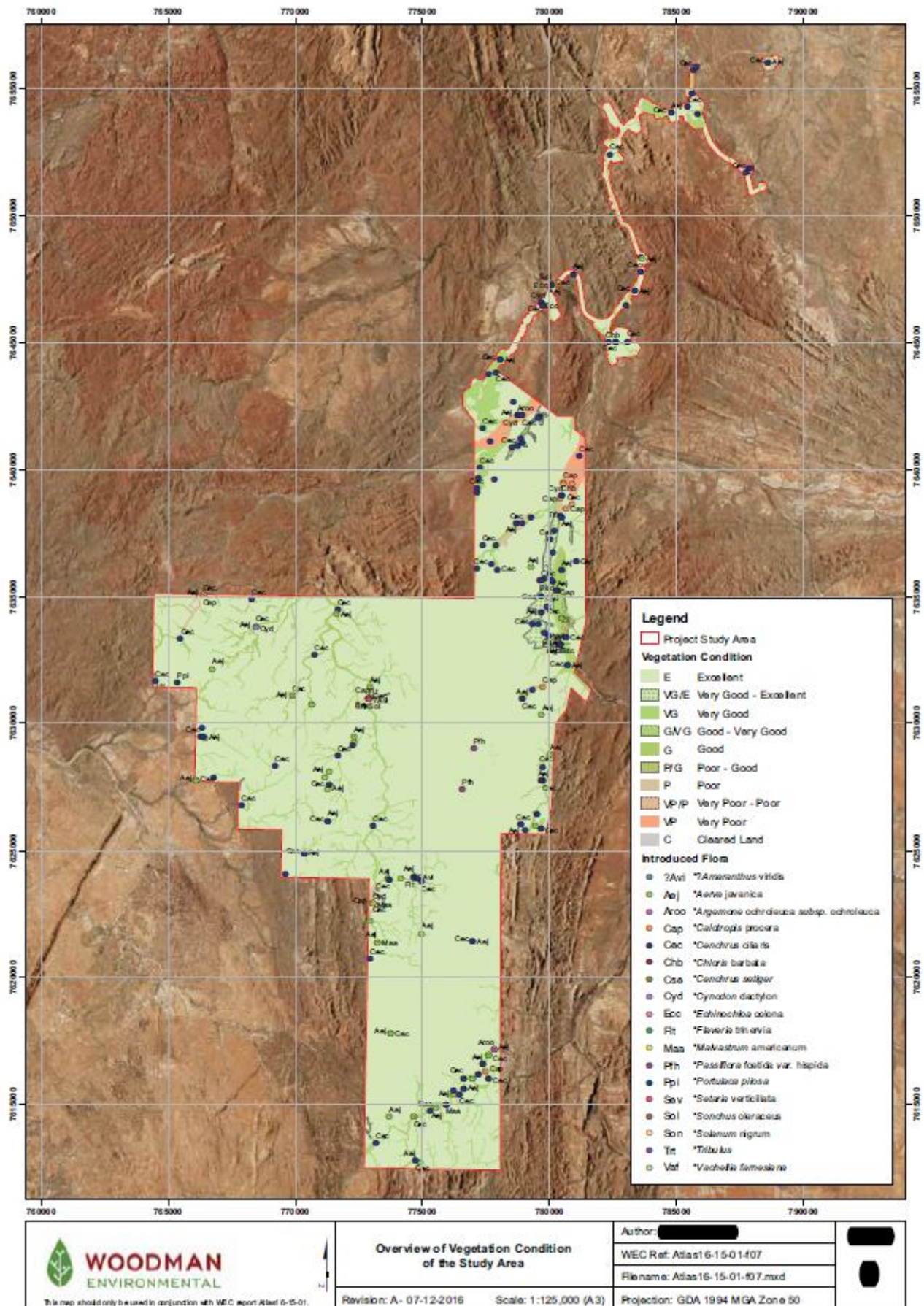


Figure 2. Vegetation condition mapping of the area proposed to be cleared and additional project areas for Atlas Iron Limited, including location of introduced flora (Woodman, 2016).

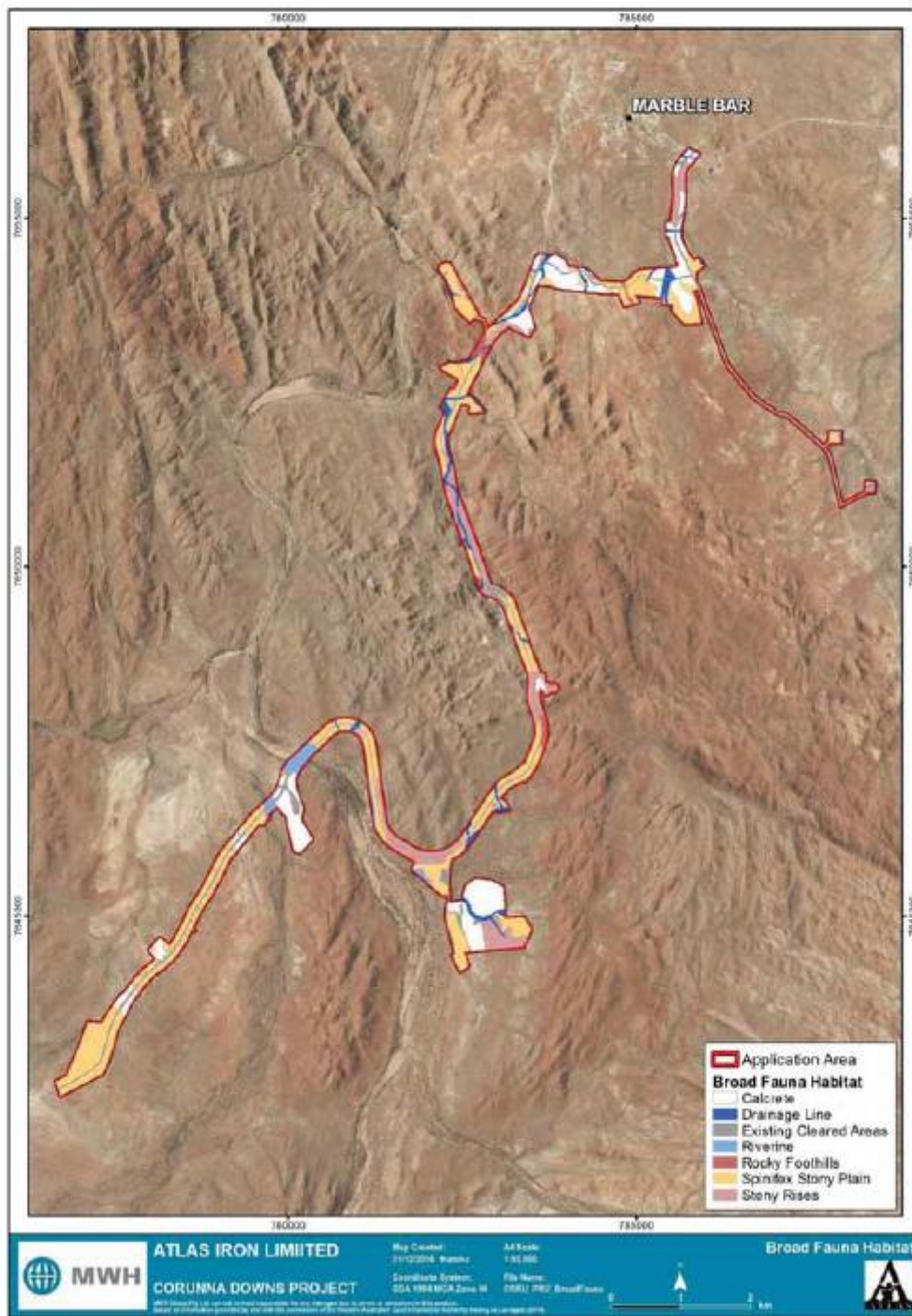








Figure 3. Fauna habitat mapping within the area proposed to be cleared (MWH, 2017).

Table 1. Descriptions of broad fauna habitat types within the area proposed to be cleared (MWH, 2017).

Habitat type	Extent (ha)	Vegetation and substrate description	Value to terrestrial fauna	Habitat condition	Disturbance types	Representative photograph
Spinifex Stony Plain <ul style="list-style-type: none"> Widespread Limited Significance 	282 ha (43%)	Sparse woodland of <i>Corymbia hamersleyana</i> over mixed open shrubland dominated by <i>Acacia pyrifolia</i> , <i>Acacia inaequilatera</i> , <i>Senna</i> spp., and <i>Grevillia wickhamii</i> over dense hummock grassland of <i>Triodia</i> spp. and herbs on reddish brown sandy loam	This habitat type was characterised by extensive spinifex cover over a stony substrate with occasional patches of interspersed sandier substrate. It contained very little woody debris and leaf litter, and poor burrowing suitability	Excellent - Good	Recent fire, historical mining, tracks	
Calcrete <ul style="list-style-type: none"> Widespread Limited Significance 	153 ha (23%)	Scattered <i>Corymbia hamersleyana</i> over scattered <i>Acacia inaequilatera</i> shrubland over low hard hummock grassland of <i>Triodia</i> spp. on clay-loam with calcrete	The Calcrete habitat was characterised by extensive hard-spinifex hummock grassland over a stony, calcareous substrate. This habitat contained very little woody debris, leaf litter and low burrowing suitability.	Very Good	Recent fire and cattle adjacent	
Habitat type	Extent (ha)	Vegetation and substrate description	Value to terrestrial fauna	Habitat condition	Disturbance types	Representative photograph
Stony Rises <ul style="list-style-type: none"> Widespread Limited Significance 	84 ha (13%)	Scattered <i>Corymbia hamersleyana</i> trees over scattered to open shrubland dominated by <i>Grevillea wickhamii</i> , <i>Acacia inaequilatera</i> and/or <i>Hakea lorea</i> ; over open to dense hummock grassland of <i>Triodia</i> spp. on skeletal soils of brown clay-loam	The Stony Rises habitat was characterised by rolling hills supporting <i>Triodia</i> hummock grasslands and small rocky outcrops. It contained very little woody debris and leaf litter, and poor burrowing suitability.	Excellent - Very Good	Recent fire, cattle grazing and trampling	
Drainage Line <ul style="list-style-type: none"> Widespread Significant 	38 ha (6%)	Open woodland dominated by <i>Eucalyptus victrix</i> and/or <i>E. camaldulensis</i> , over open-dense shrubland of <i>Acacia tumida</i> and/or <i>Melaleuca glomerata</i> with scattered/clumps of tussock grasses dominated * <i>Cenchrus ciliaris</i> , <i>Eriachne</i> spp. and <i>Triodia</i> spp. hummock grasses on river sand and alluvial loam	The Drainage Line habitat was recorded throughout the Application Area and supported a thin band of eucalypts as well as a dense shrubland of <i>Acacia</i> species (e.g. <i>Acacia tumida</i>), often over soft spinifex and Buffel Grass, and usually on sandy or loamy alluvial soils. It provides moderate amounts of woody debris, leaf litter and tree hollows, and is prone to pooling water.	Good	Cattle, weeds, recent fire	

Habitat type	Extent (ha)	Vegetation and substrate description	Value to terrestrial fauna	Habitat condition	Disturbance types	Representative photograph
Riverine <ul style="list-style-type: none"> Limited Extent Significant 	16 ha (2%)	Woodland of <i>Eucalyptus victrix</i> , <i>E. camaldulensis</i> and/or <i>Melaleuca argentea</i> over shrubland of <i>Hakea Lorea</i> , <i>Melaleuca glomerata</i> and/or <i>Grevillea pyramidalis</i> with pockets of <i>Triodia</i> hummock grassland and * <i>Cenchrus ciliaris</i> tussock grassland on brown sandy river sands and brown sandy loam.	The Riverine habitat differed from Drainage Line habitat by the presence of large open sandy channels which were often fringed by large eucalypts with tree hollows. The Riverine habitat holds a stable source of food and water and high amount of woody debris and leaf litter	Very Good - Good	Cattle and camel grazing, weeds	
Rocky Foothills <ul style="list-style-type: none"> Limited Extent Limited Significance 	9 ha (1%)	Scattered <i>Corymbia hamersleyana</i> trees over scattered to open shrubland dominated by <i>Grevillea wickhamii</i> and/or <i>Acacia inaequilatera</i> over hard spinifex on stony red clay loam	Rocky Foothills were characterised by low hills with <i>Triodia</i> hummock grasslands and small rocky outcrops containing cracks, crevices and loose rocks for saxicolous fauna. It contained very little woody debris and leaf litter, and poor burrowing suitability.	Excellent - Good	Recent fire, tracks	

Appendix E. Sources of information

E.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)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- DBCA Statewide Vegetation Statistics
- 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)
- Native Vegetation Extent (DPIRD-005)
- 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 Mapping – Best Available
- Soil Landscape Mapping – Systems

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)

E.2. References

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- Atlas Iron Limited (Atlas) (2019a). *Clearing permit application form and supporting documents for CPS 8409/1*, received 11 March 2019 (DWER Ref: A1770859).
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