Impact Reconciliation Procedure

McPhee Creek Iron Ore Project

09/12/2022

124-EN-PLN-0010 v [3]

Authorisation

Version	Reason for Issue	Prepared	Checked	Authorised
1	To support Environmental Review Document submission	J. Morgan	S. Shute	H. Nielssen
2	Updated to incorporate EPA feedback	J. Morgan	S. Blake	S. Shute
3	Updated to incorporate expected EPBC offset requirements	M. Bird	S. Shute	S. Shute

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Glossary

(the) Proposal	(the) McPhee Creek Project
(the) Proponent	Atlas Iron Pty Ltd

Abbreviations

CPI	Consumer Price Index
DAWE	(former) Department of Agriculture, Water and Environment
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DWER	Department of Water and Environment Regulation
EH&A	Environment, Heritage & Approvals
EP Act	Environmental Protection Act 1986
EPA	Environmental Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
GDP	Ground Disturbance Permit
GIS	Geographic Information System
Ha	Hectare
IBRA	Interim Biogeographic Regionalisation for Australia
IRP	Impact Reconciliation Procedure
IRR	Impact Reconciliation Report
MNES	Matters pf National Environmental Significance
Mtpa	Million tonnes per annum
PEOF	Pilbara Environmental Offset Fund

1 Introduction

Atlas Iron Pty Ltd (Atlas, the Proponent) is seeking approval to develop the McPhee Creek Project (the Proposal). The Proposal is a greenfield iron ore mine at McPhee Creek located approximately 30 km north of Nullagine townsite on Mining Lease 45/1243 in the Pilbara region of Western Australia. The Proposal includes above and below water table mining of iron ore from five open cut pits.

1.1 Assessment Process

The Proposal is subject to assessment under the Commonwealth *Environment Protection and* Biodiversity *Conservation Act 1999* (EPBC Act; EPBC 2021/8897) and Western Australian *Environmental Protection Act 1986* (EP Act; Assessment No. 2285). The Proposal is undergoing an accredited assessment in which the Commonwealth will rely on the outcomes of the assessment conducted by the Western Australian Environmental Protection Authority (EPA) to inform its consideration for approval under the EPBC Act.

1.2 Document Purpose

The purpose of this Impact Reconciliation Procedure (IRP) is to outline the method the Proponent intends to use to calculate the area of vegetation (or other environmental value) impacted within the Chichester Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the Pilbara.

This IRP has been prepared in accordance with the EPA's *Instructions for preparing Impact Reconciliation Procedures and Impact Reconciliation Reports* (EPA 2021).

2 The Proposal and anticipated Condition Requirements

2.1 The Proposal

The Proponent is proposing to develop a greenfield iron ore mine at McPhee Creek, located approximately 30 km north of Nullagine townsite on Mining Lease 45/1243 in the Pilbara region of Western Australia (Figure 2-1). The Proposal includes the above and below water table mining of iron ore from five open cut pits, with a production rate of up to 14 million tonnes per annum (Mtpa) of ore over an expected life of 15 years. Subject to approval, construction of the Proposal is planned to commence in 2022 with mining scheduled to occur from 2023 to approximately 2040.

The Proposal includes the development of mine pits and associated infrastructure, including but not limited to crushing and screening facilities, waste landforms, run of mine pad, access roads, power infrastructure, administration, accommodation camp, stockpile and laydown areas, borrow pits, groundwater bores and transfer infrastructure, explosive magazine, fuel storage and landfill.

The Proposal will involve clearing of up to 1,913 hectares (ha) within a Development Envelope of 4,465 ha (Figure 2-2). The Proposal includes the following impacts which are expected to require an offset:

- Clearing of critical fauna habitat comprising Breakaway/Cliff, Drainage Line, Gorge/Gully, Hillcrest/Hillslope and Spinifex Sandplain habitat types. These habitat types provide:
  - Pilbara Olive Python with high value breeding/ shelter and hunting/ foraging habitat (comprising Gorge/Gully, Breakaway/Cliff, Drainage Line and Hillcrest/Hillslope habitat).
  - Pilbara Leaf-nosed Bat with high value potential roosting and foraging habitat (comprising Gorge/Gully, Breakaway/Cliff and Drainage Line habitat).
  - Ghose Bat with high value potential roosting and foraging habitat (comprising Gorge/Gully and Breakaway/Cliff habitat).
  - Northern Quoll with core denning/breeding and foraging habitats (comprising Gorge/Gully, Breakaway/Cliff and Hillcrest/Hillslope habitat).
  - Greater Bilby with core breeding/ shelter, foraging and dispersal habitat (Spinifex Sandplain).
- Clearing of supporting habitat for the Northern Quoll and Pilbara Olive Python (Rocky Foothills).
- Clearing of native vegetation in 'Good to Excellent' condition.

Section 3.1 provides further detail on these values, the extent within the Conceptual Footprint and the expected offset rates.

2.2 Anticipated Approval Conditions

It is anticipated that conditions relating to offset requirements will be included under both the Ministerial Statement, to be issued under the EP Act, and EPBC approval, issued under the EPBC Act. As these approvals are currently pending, the actual approval conditions have not been included.

The approval conditions under the Ministerial Statement are expected to require financial offsets to be paid to the Pilbara Environmental Offsets Fund (PEOF) for impacts to:

- Critical Habitat.
- Native vegetation in 'Good to Excellent' condition.

The approval conditions under the EPBC approval are expected to require offsets to be paid to the PEOF for impacts to:

- Critical Habitat.
- Supporting habitat.

While this IRP has been developed based on the expected approval conditions, the IRP and subsequent IRRs will be implemented in accordance with the actual conditions received in the relevant approval documents.

0 mE
100,000 mE
200,000 mE
300,000 mE
7,800,000 mN
7,700,000 mN
7,600,000 mN

Port Hedland
Marble Bar
McPhee Creek Iron Ore Project
Nullagine

- Populated Places
- Minor Roads
- Major Roads
- Major Watercourses
- Development Envelope
- Project Tenements

File Name: GIS_3489.aprx	Projection: GDA 1994 MGA Zone 51		
Date: 30/11/2022	0 25 50 Kilometres	N	Regional Location
Drawn: Sam.Nikora			Figure No: 2-1
Doc No:	Scale 1:1,250,000 Page size: A3		

195,000 mE
200,000 mE
205,000 mE
210,000 mE
7,615,000 mN
7,610,000 mN
7,605,000 mN

Marble Bar Road
McPhee Creek
Branch of McPhee Creek
Liyrol Creek

Watercourses
Significant Fauna Exclusion Zone
Development Envelope
Conceptual Footprint
Infrastructure
Pit
Waste Rock Dump

File Name: GIS_3489.aprx	Projection: GDA 1994 MGA Zone 51		
Date: 30/11/2022	0 0.5 1 2 kilometres	N	Development Envelope and Conceptual Footprint
Drawn: Sam.Nikora			Figure No: 2-2
Doc No:	Scale 1:50,000 Page size: A3		

3 Impact Reconciliation Procedure

3.1 Identification of Biodiversity Values Requiring Offsets

The Proponent anticipates that the Ministerial Statement, to be issued under the *EP Act,* will require contributions to the to the PEOF to counterbalance significant residual Impacts to:

- Critical habitat for the northern quoll, ghost bat, Pilbara leaf-nosed bat, Pilbara olive python and greater bilby.
- 'Good to Excellent' condition native vegetation; and

The offset rates per hectare for the Chichester IBRA subregion are provided in Table 3-1. These rates were sourced from the PEOF webpage, Department of the Water Environmental and Regulation (DWER) and will subject to the Consumer Price Index (CPI) (DWER 2021).

The Proponent anticipates that the approval to be issued under the *EPBC Act,* will require contributions to the to the PEOF to counterbalance significant residual Impacts to:

- Critical habitat for the northern quoll, ghost bat, Pilbara leaf-nosed bat, Pilbara olive python and greater bilby.
- Supporting habitat for the Northern Quoll and Pilbara Olive Python.

The EPBC offset rates per hectare are presented in Table 3-1 and were sourced from the recently approved *Sanjiv Ridge Project Stage 2* (EPBC 2021/8885). While it is expected that the same rates will apply to the McPhee Creek Project, the actual rates to be used will be confirmed in the EPBC approval conditions (approval pending). It is expected that the EPBC approval will include a condition requiring an estimate of offset contributions per protected matter be provided, this has been included in Appendix A.

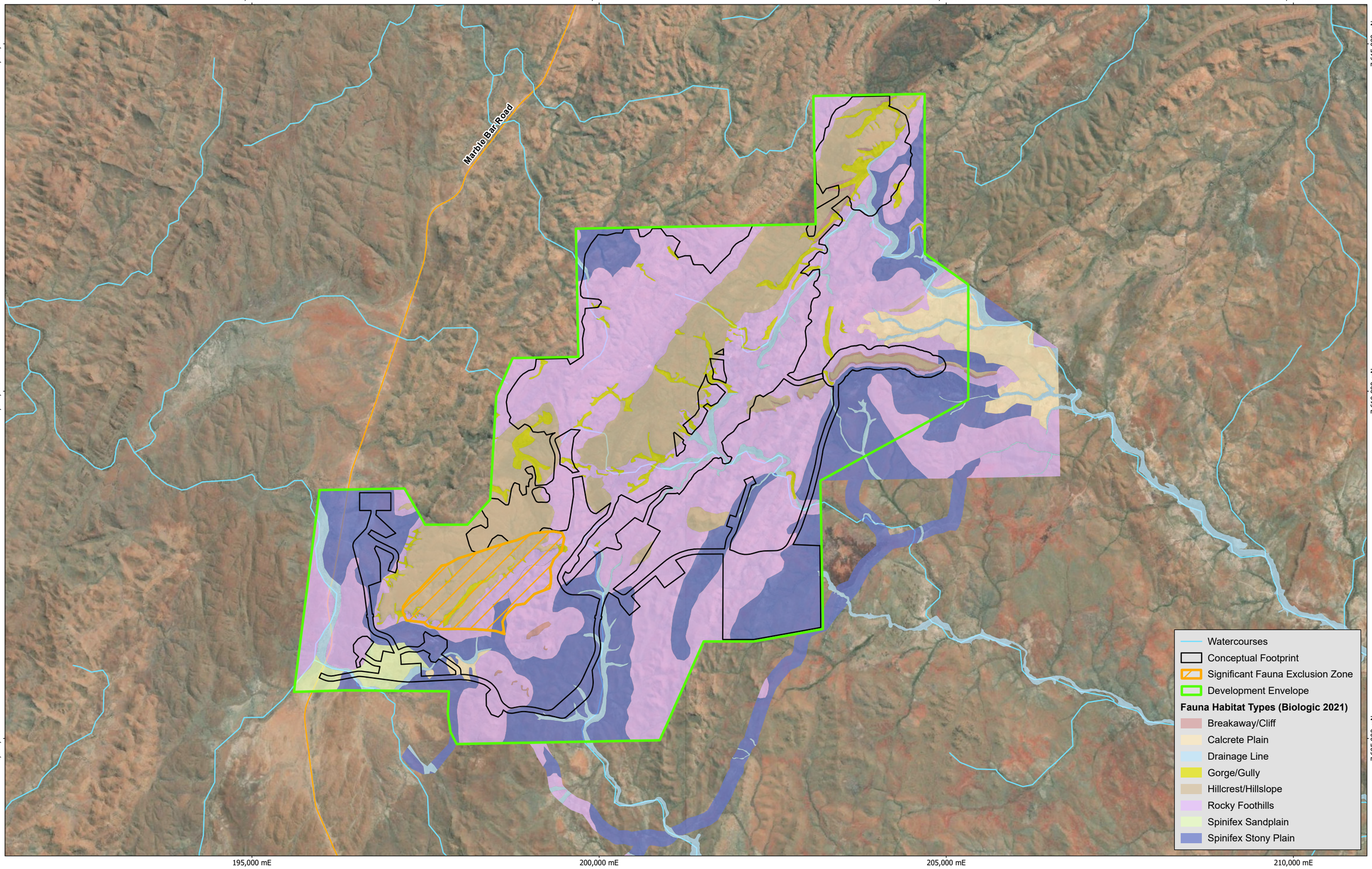
Habitat types and vegetation condition within the Development Envelope are presented in Figure 3-1 and Figure 3-2 respectively. Environmental Values requiring offset are shown in Figure 3-3.

Table 3-1: Environmental Values to be Offset

Fauna Habitat within Development Envelope	Potential Area to be Offset (ha)[1]	EP Act		EPBC Act		Applicable Offset Rate ($/ha)[4]
		Environmental Value requiring Offset	Offset Rate ($/ha)[2]	Environmental Value requiring Offset	Offset Rate ($/ha)[3]	
Breakaway/Cliff	16.4	Critical Habitat	$1,683	Critical Habitat	$3,306	$3,306
Drainage Line	54.1					
Gorge/Gully	90.3					
Hillcrest/Hillslope	422.5					
Spinifex Sandplain	24.5					
Rocky Foothills	883.8	Native vegetation in good to excellent condition	$841	Supporting Habitat	$1,653	$1,653
Calcrete Plain, Spinifex Stoney Plain	306.5	Native vegetation in good to excellent condition	$841	N/A	N/A	$841
Cleared Areas[5]	115.3	N/A	N/A	N/A	N/A	N/A

1. Area based on the habitat extent within the Conceptual Footprint, less any cleared areas defined as *Other Clearing* as per Table 3-2 and exempt from offset. Calculations may include rounding errors.
2. Rates are calculated on the 2021-2022 financial year and are to be indexed annually. Rates are shown in Australian dollars and do not include GST.
3. Rates are based on the Sanjiv Ridge Project Stage 2 approval (EPBC 2021/8885). Rates are shown in Australian dollars, are to be indexed annually and do not include GST.
4. Rates to be indexed annually according to the indexation rules for the applicable offset rate.
5. Cleared areas presented are those within the Conceptual Footprint. An additional 24.2 ha of clearing exists outside the Conceptual Footprint (within the Development Envelope) as discussed in Section 3.2.2. These areas are considered *Other Clearing* under Table 3-2 and exempt from offset.

195,000 mE
200,000 mE
205,000 mE
210,000 mE
7,615,000 mN
7,610,000 mN
7,605,000 mN
Marble Bar Road



File Name: GIS_3489.aprx	Projection: GDA 1994 MGA Zone 51	
Date: 30/11/2022	0 0.5 1 2 Kilometres	N
Drawn: Sam.Nikora		
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Habitat Types within the Development Envelope

Figure No: 3-1

200,000 mE

205,000 mE

7,615,000 mN

7,610,000 mN

7,605,000 mN

Significant Fauna Exclusion Zone

Development Envelope

Vegetation Condition

Excellent

Good

Cleared

Conceptual Footprint

File Name: GIS_3496.aprx	Projection: GDA 1994 MGA Zone 51	
Date: 9/12/2022	0 0.5 1 Kilometres	N
Drawn: Sam.Nikora		
Doc No:	Scale 1:40,000	Page size: A3

Vegetation Condition

Figure No: 3-2

196,000 mE 198,000 mE 200,000 mE 202,000 mE 204,000 mE

7,614,000 mN
7,612,000 mN
7,610,000 mN
7,608,000 mN
7,606,000 mN
7,604,000 mN
7,602,000 mN

Significant Fauna Exclusion Zone
Development Envelope
Conceptual Footprint

Environmental Value

Critical Habitat
Supporting Habitat
Good to Excellent Vegetation
Existing Cleared Area

File Name: GIS_3496.aprx	Projection: GDA 1994 MGA Zone 51		Figure No:
Date: 9/12/2022	0 0.5 1 Kilometres	N	3-3
Drawn: Sam.Nikora			
Doc No:	Scale 1:40,000 Page size: A3		

Environmental Values Requiring Offset

3.2 Methods to Determine Impacts

Atlas has well established processes for documenting and recording ground disturbances. The processes relevant to the IRP and subsequent Impact Reconciliation Reports (IRRs) are summarised below.

3.2.1 Ground Disturbance Permits

The Proponent's Ground Disturbance Permit (GDP) Procedure (950-HSE-EN-PRO-0006) will apply to all ground disturbance undertaken for the Proposal. The GDP Procedure does not itself form part of this IRP, however the following is an outline of how it operates:

1. The need for ground disturbance (including the clearing of native vegetation) is identified.
2. A GDP application is made to the Environment & Approvals (E&A) team identifying the clearing to be undertaken, including the boundary of the area required to be cleared.
3. The GDP application is assessed to ensure it complies with relevant approval boundaries, limits and conditions.
4. A GDP is approved and issued to a GDP owner, a person designated as responsible for the clearing.
5. When clearing is finished, the GDP owner arranges for a surveyor to map the actual extent of ground disturbance and clearing via an on-ground survey ('survey pick-up').
6. The completed GDP and survey pick-up is returned to the E&A team. The E&A team follows up any overdue GDPs.
7. The master ground disturbance layer in the Proponent's Geographic Information System (GIS) is updated to capture clearing undertaken, including details such as the clearing date, purpose and relevant approval instruments.

The purpose of the on-ground survey mentioned in step 5 is to accurately determine and map the edge of areas that have been cleared. The resulting product is spatial data polygons representing cleared areas. While this is the primary and most common method Atlas uses to determine clearing extents, Atlas also acquires high resolution aerial imagery of active project sites from time to time. Imagery is used as part of suite of mapping tools to accurately capture on-ground conditions including ground disturbance. It is used to help verify the extent of ground disturbance as mapped and reported by surveyors. The extent of recent ground disturbance can also be determined from recent aerial imagery where survey pick-up has not yet been completed. Once survey pick-up is complete, the master ground disturbance layer is amended accordingly.

3.2.2 Determining the Extent of Clearing

The extent of clearing to be reported in the Impact Reconciliation Report (IRR) will be determined using spatial analysis. Given that each successive IRR relates to a specific reporting period and there may be other clearing within the Development Envelope (i.e. not part of this Proposal), new clearing can also be determined using the following approach (terms are defined in Table 3-2):

New Clearing = Total Clearing – Previously Reported Clearing – Other Clearing

Table 3-2: Definitions of clearing terms

Term	Definition
New Clearing	Extent of clearing to be reported in the IRR.
Total Clearing	Extent of the master ground disturbance layer within the Development Envelope, as at the end of the reporting period, based on survey pick-up and GIS mapping.
Previously Reported Clearing	Total extent of clearing reported in all IRRs previously submitted. If no IRRs have been submitted, this value is zero.
Other Clearing	Extent of clearing that is not part of this Proposal, i.e. clearing that is not attributable to the Proposal. Examples include: • Clearing undertaken inside the Development Envelope by others, e.g. pastoralist activities • Other clearing undertaken by Atlas in a lawful manner, e.g. clearing exempted by the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 such as for exploration work. Future amendments to Other Clearing, i.e. to account for new areas of Other Clearing, will be accounted for in IRRs.

The current extent of *Other Clearing* within the Development Envelope totals 139.5 ha, consisting of 115.3 ha within the Conceptual Footprint and 24.2 ha outside the Conceptual Footprint.

4 Reporting

The Proponent will prepare one or more IRRs to document the clearing undertaken. The IRR(s) will be provided to DWER to enable DWER to determine the contributions payable.

4.1 Frequency and Timing

Clearing will be calculated for each annual **reconciliation period**. The first reconciliation period starts on the day ground disturbing activities commence under the Ministerial Statement and ends on the next 30 June. Each successive reconciliation period starts on 1 July and ends on the next 30 June.

Clearing will be reported in IRRs biennially; i.e. each IRR covers a two-year **reporting period** spanning two reconciliation periods. The first reporting period starts on the day ground disturbing activities commence and ends on the second 30 June following. Each successive reporting period starts on 1 July and ends on the second 30 June following. The IRR will tabulate clearing data for each reconciliation period.

Table 4-1 outlines the timeframes and frequency of impact reconciliation activities under this IRP.

Table 4-1: Impact Reconciliation Reporting Periods

Reporting Period[1]	Action	Timing[2]
-	Ministerial Statement issued	Q2 2023
-	Clearing commences	Q3 2023
Period 1	**Clearing undertaken during period**	**Date of first ground disturbing activities – 30 June 2025**
	Survey pick-up	August 2025
	IRR submitted to DWER	31 October 2025
	Payment to the PEOF	Within 6 weeks of invoice from DWER confirming amount to be paid[3]
Period 2	**Clearing undertaken during period**	**1 July 2025 – 30 June 2027**
	Survey pick-up	August 2027
	IRR submitted to DWER	31 October 2027
	Payment to the PEOF	Within 6 weeks of invoice from DWER confirming amount to be paid[3]
Period 3	**Clearing undertaken during period**	**1 July 2027 – 30 June 2029**
	Survey pick-up	August 2029
	IRR submitted to DWER	31 October 2029
	Payment to the PEOF	Within 6 weeks of invoice from DWER confirming amount to be paid[3]
Period 4	**Clearing undertaken during period**	**1 July 2029 – 30 June 2031**
	Survey pick-up	August 2031
	IRR submitted to DWER	31 October 2031

Reporting Period[1]	Action	Timing[2]
	Payment to the PEOF	Within 6 weeks of invoice from DWER confirming amount to be paid[3]
Period 5	**Clearing undertaken during period**	**1 July 2031 – 30 June 2033**
	Survey pick-up	August 2033
	IRR submitted to DWER	31 October 2033
	Payment to the PEOF	Within 6 weeks of invoice from DWER confirming amount to be paid[3]
Period 6	**Clearing undertaken during period**	**1 July 2033 – 30 June 2035**
	Survey pick-up	August 2035
	IRR submitted to DWER	31 October 2035
	Payment to the PEOF	Within 6 weeks of invoice from DWER confirming amount to be paid[3]
Period 7	**Clearing undertaken during period**	**1 July 2035 – 30 June 2037**
	Survey pick-up	August 2037
	IRR submitted to DWER	31 October 2037
	Payment to the PEOF	Within 6 weeks of invoice from DWER confirming amount to be paid[3]
Period 8	**Clearing undertaken during period**	**1 July 2037 – 30 June 2039**
	Survey pick-up	August 2039
	IRR submitted to DWER	31 October 2039
	Payment to the PEOF	Within 6 weeks of invoice from DWER confirming amount to be paid[3]

1. Additional reporting periods will be added until all approved clearing has occurred, or until DWER advises in writing that Atlas is no longer required to implement this IRP.
2. Timing is Indicative and assumes clearing commences on or before 30 June 2024.
3. After the IRR is submitted, DWER has final responsibility for determining and confirming the amount to be paid. Atlas cannot make payment until DWER has issued an invoice confirming the amount to be paid.

Reporting Period 1 may be less than two years to align with a financial year reporting period. No clearing is expected after the end of the last reporting period, as identified in Table 4-1. If all approved clearing has not been completed by the end of the last reporting period, additional reporting periods will be added according to the reporting frequency established by Table 4-1. Reporting periods will continue until DWER advises in writing that Atlas is no longer required to implement this IRP.

4.2 Impacts and Reconciliation

As per Section 3.1 and Table 3-1, the total areas for each of the offset values based on the Conceptual Footprint are:

- 694.7 ha of critical habitat.
- 900.0 ha of supporting habitat.
- 318.3 ha of native vegetation in good to excellent condition.

Each IRR will include the following information:

- Impacts that have occurred during each reconciliation period of the reporting period, attributed by environmental value and offset rate.
- Summary of information used to validate impact areas, including as applicable, aerial imagery, digitised polygons and ground-truthing surveys used to determine impacts for each reconciliation period.
- Information regarding any exemptions, other clearing approvals or reductions to contributions to the fund, where relevant (such information may include details and spatial data for impacts approved against a previous Ministerial Statement, or clearing permit).
- Details and spatial data for historical impacts that are excluded from offset contributions.
- An estimate of impacts expected to be reported in subsequent reporting periods.
- A spatial data package representing the impacts that have occurred during the reporting period.

The IRR and accompanying spatial data will be prepared in accordance with the 'Instructions on how to prepare *Environmental Protection Act 1986* Part IV Impact Reconciliation Procedures and Impact Reconciliation Reports' (EPA 2021) or equivalent guidance published by the EPA applicable at the time of preparing the IRR. The instructions contain minimum information requirements for the IRR and set out standards on spatial data content, structure and format.

5 References

Biologic Environmental Survey Pty Ltd (Biologic) 2021. *McPhee Creek Consolidated Terrestrial Fauna Report*. Report prepared for Roy Hill and Atlas Iron Limited.

Department of Water and Environmental Regulation (DWER). 2021. The Pilbara Environmental Offsets Fund. Retrieved 1 October 2021, from https://www.dwer.wa.gov.au/peof. Department of Water and Environmental Regulation, Joondalup, WA.

Ecoscape (Australia) Pty Ltd (Ecoscape) 2020a. McPhee Creek Flora and Vegetation Survey, report prepared for Atlas Iron.

Ecoscape (Australia) Pty Ltd (Ecoscape) 2020b. *McPhee Creek Flora and Vegetation Survey Addendum*. Report prepared for Atlas Iron Limited.

Environmental Protection Authority (EPA). 2021. Instructions on how to prepare *Environmental Protection Act 1986* Part IV Impact Reconciliation Procedures and Impact Reconciliation Reports. Environmental Protection Authority, Joondalup, WA.

Appendix A. Estimate of Contributions to the PEOF

It is expected that the EPBC approval will include a condition that requires this IRP to include the estimated financial contributions that will be paid into the Pilbara Environmental Offsets Fund per hectare of habitat, for each protected matter that is impacted.

Table A1 shows the estimated financial contributions to the PEOF based on the expected EPBC approval conditions.

Table A-1: Estimate of Contributions to the PEOF under the EPBC Act

EPBC Act Protected Matter to be Offset	Potential Area to be Offset (ha)	Protected Matter Value Rating Category	Environmental Value Justification[1]	IBRA[1] Region and Subregion	Offset Rate (per ha)[2]	Total to be Offset[2]
Northern quoll, ghost bat, Pilbara leaf-nosed bat, Pilbara olive python, greater bilby	607.8	Critical habitat	Impacts to critical habitat for northern quoll, ghost bat, Pilbara leaf-nosed bat, Pilbara olive python and/or greater bilby within the Development Envelope	Pilbara, Chichester	$3,306	$2,009,387
Northern quoll, ghost bat, Pilbara leaf-nosed bat, Pilbara olive python, greater bilby	883.4	Supporting habitat	Impacts to supporting habitat for northern quoll, ghost bat, Pilbara leaf-nosed bat, Pilbara olive python and/or greater bilby within the Development Envelope	Pilbara, Chichester	$1,653	$1,460,260
Cleared areas[3]	103.5	N/A	Defined as *Other Clearing* as per Table 3-2 and exempt from offset	Pilbara, Chichester	N/A	$0
					Estimated Total Amount to be Offset	**$3,469,647**
					Maximum Total Amount Payable to PEOF (Commonwealth requirement)	**$3,469,647**
					Initial Contribution[4] (10% of Estimated Total)	$346,965

1. Interim Biogeographic Regionalisation for Australia.
2. Rates are based on those identified in the Sanjiv Ridge Project Stage 2 approval (EPBC 2021/8885), are calculated on the **2021-2022** financial year and are to be indexed annually. Rates are shown in Australian dollars and do not include GST.
3. Cleared areas for the purpose of this table only includes clearing with the areas identified as critical and supporting habitats for the EPBC Act offsets, as defined in Table 3-1.
4. It is expected that the EPBC approval will include a condition that requires an initial contribution of at least 10% of the estimated total to be paid prior to commencement of the action.