



Impact Reconciliation Procedure

Miralga Creek DSO Project

23/03/2023

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Impact Reconciliation Procedure

Miralga Creek DSO Project



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Abbreviations

ALRE	Abydos Link Road East
Atlas	Atlas Iron Pty Ltd
AUD	Australian Dollar
CPI	Consumer Price Index
DSO	Direct Shipping Ore
DWER	Department of Water and Environmental Regulation
EHA	Environment, Heritage & Approvals
EP Act	<i>Environmental Protection Act 1986</i>
EPA	Environmental Protection Authority
GDP	Ground Disturbance Permit
GIS	Geographic Information System
GST	Goods and Services Tax
IBRA	Interim Biogeographical Regionalisation for Australia
IRP	Impact Reconciliation Procedure
IRR	Impact Reconciliation Report
PEOF	Pilbara Environmental Offsets Fund
(the) Proposal	(the) Miralga Creek DSO Project
ROM	run-of-mine
TBC	to be confirmed
WA	Western Australia



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1 Introduction

1.1 The Proposal

Atlas Iron Pty Ltd (Atlas) is developing the Miralga Creek Direct Shipping Ore (DSO) Project (the Proposal). The Proposal is an iron ore mine located in the Pilbara region of Western Australia (WA), approximately 100 km southeast of Port Hedland, along the Marble Bar Road. The Proposal is located nearby to Atlas's existing Abydos mine, which closed in 2016.

The Proposal comprises the mining of iron ore using conventional drill and blast, load and haul methods from five satellite pits within three discrete mining areas, spread over 30 km, as follows:

- Miralga East (3 pits), 35 km northeast of the now closed Abydos mine, with the three pits located on a ridge trending east-to-west.
- Miralga West (1 pit), 22 km northeast of Abydos, with the pit on a ridge trending southwest to northeast.
- Sandtrax (1 pit), 7 km northeast of Abydos, with the pit along an east-west ridge.

The pits will be mined in a staged manner by a small, mobile mining fleet. The crushing and screening plant will be established at a run-of-mine (ROM) pad at Miralga West. Other support infrastructure typical for iron ore mining projects will be installed where needed, e.g. laydown areas, fuel storage and administration. A new haul road will be constructed between Miralga West and Miralga East. The existing Abydos Link Road East (ALRE) will be used, along with Abydos's existing licensed borefields and camp facilities.

It is expected that approximately 8 Mt of iron ore will be mined above the groundwater table over approximately 4 to 5 years.

The key proposal characteristics are summarised in Table 1 and Table 2. The Proposal's development schedule is shown in Table 3 for information only.

Table 1: Summary of the Proposal

Proposal Title	Miralga Creek DSO Project
Proponent Name	Atlas Iron Pty Ltd
Short Description	<p>The proposal is to develop above water table mining of iron ore from three areas referred to as Sandtrax, Miralga West and Miralga East, approximately 100 km south-east of Port Hedland, along the Marble Bar Road.</p> <p>The proposal includes the development of mine pits and associated infrastructure including but not limited to processing facilities, waste landforms and access roads. The proposal will include an accommodation camp and utilise some existing ancillary infrastructure from the nearby Abydos DSO Project.</p>

Source: Atlas (2020a, b)

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Table 2: Location and Proposed Extent of Physical and Operational Elements

Element	Location	Proposed Extent
Physical Elements		
Pits	<ul style="list-style-type: none">Three at Miralga East (Figure 3 of MS1154)One at Miralga West (Figure 4 of MS1154)One at Sandtrax (Figure 5 of MS1154)	Clearing of no more than 219.8 ha of native vegetation within a 556.8 ha Development Envelope
Waste dumps	<ul style="list-style-type: none">Miralga East (Figure 3 of MS1154)Miralga West (Figure 4 of MS1154)Sandtrax (Figure 5 of MS1154)	
Supporting infrastructure: <ul style="list-style-type: none">Access roadsMine Operation CentreLaydown areasAdministration areasExplosives magazineFuel storage areaHaulage routeROM stockyard	Figures 2 to 7 of MS1154	
<ul style="list-style-type: none">Accommodation campWastewater treatment plantIrrigation sprayfieldLandfill	Within tenement L45/562 (Figure 8 of MS1154)	
Operational Elements		
Groundwater abstraction	Existing borefields	Abstraction of no more than 0.9 GLpa of groundwater

Source: Ministerial Statement 1154

Table 3: Indicative Development Schedule

Development Stage	Timing
Obtain key environmental and mining approvals	April 2021
Commence site construction	June 2021
Commence mining	December 2021
Commence shipping	March 2022
Mining ceases	Q3 2026*
Decommissioning and closure	Q3 2027*

* Timing indicative.



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1.2 Approval Conditions

The Proposal has received the following environmental approvals:

- Ministerial Statement 1154 under Part IV of the *Environmental Protection Act 1986* (WA).
- EPBC 2019/8601 under the Environment Protection and Biodiversity Conservation Act 1999 (Cth).

The purpose of this Impact Reconciliation Procedure (IRP) is to meet the requirements of Ministerial Statement 1154 (MS1154) condition 7-5. It outlines the method Atlas will use to calculate the area of disturbance requiring offset contributions to the Pilbara Environmental Offsets Fund (PEOF).

The conditions of MS1154 relevant to the IRP are outlined in Table 4.

Table 4: Conditions of Ministerial Statement 1154 Relevant to This IRP

Condition No.	Condition
7-1	The proponent shall contribute funds to the Pilbara Environmental Offsets Fund calculated pursuant to condition 7-2, to achieve the objective of counterbalancing the significant residual impacts to 'Good' to 'Excellent' condition native vegetation, riparian vegetation, critical habitat for the northern quoll and ghost bat, subject to any reduction approved by the CEO under condition 7-10.
7-2	The proponent's contribution to the Pilbara Environmental Offsets Fund shall be paid biennially, with the amount to be contributed calculated based on the clearing undertaken in each year of the biennial reporting period in accordance with the highest applicable rate specified in condition 7-3. The first biennial reporting period shall commence from ground disturbing activities of the environmental value(s) identified in condition 7-3.
7-3	Calculated on the 2019-2020 financial year, the contribution rates are: <ul style="list-style-type: none"> (1) \$781 AUD (excluding GST) per hectare of 'Good' to 'Excellent' condition native vegetation, cleared as a result of the proposal within the Chichester IBRA subregion. (2) \$1,562 AUD (excluding GST) per hectare of riparian vegetation and denning and foraging habitat for northern quoll and roosting and foraging habitats for ghost bat, cleared as a result of the proposal within the Chichester IBRA subregion.
7-4	From the commencement of the 2019-2020 financial year, the rates in condition 7-3 will be adjusted annually each subsequent financial year in accordance with the percentage change in the CPI applicable to that financial year.
7-5	Subject to, and consistent with conditions 7-1, 7-2, 7-3 and 7-4, the proponent shall implement: <ul style="list-style-type: none"> (1) Atlas Iron, Impact Reconciliation Procedure Miralga Creek DSO Project (180-LAH-EN-PLN-0004, Revision 3, September 2020); or (2) if that plan has been revised, the latest version of the plan that the CEO has confirmed in writing meets the requirements of condition 7-1;
7-6	If the proponent wishes to or is directed to revise an Impact Reconciliation Procedure, the proponent shall submit a revised plan to the CEO that: <ul style="list-style-type: none"> (1) spatially defines the environmental value(s) identified in condition 7-3; (2) spatially defines the areas where offsets required by condition 7-1 are to be exempt;

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Condition No.	Condition
	(3) includes a methodology to calculate the amount of clearing undertaken during each year of the biennial reporting period for each of the environmental values identified in condition 7-3;
	(4) states that clearing calculations for the first biennial reporting period will commence from ground disturbing activities in accordance with condition 7-2 and end on the second 30 June following commencement of ground disturbing activities;
	(5) states that clearing calculations for each subsequent biennial reporting period will commence on 1 July of the required reporting period, unless otherwise agreed by the CEO;
	(6) indicates the timing and content of the Impact Reconciliation Reports; and
	(7) is prepared in accordance with <i>Instructions on how to prepare Environmental Protection Act 1986 Part IV Impact Reconciliation Procedures and Impact Reconciliation Reports</i> (or any subsequent revisions).
7-7	The proponent:
	(1) may review and revise the Impact Reconciliation Procedure; or
	(2) shall review and revise the Impact Reconciliation Procedure as and when directed by the CEO by a notice in writing.
7-8	The proponent shall submit an Impact Reconciliation Report in accordance with the Impact Reconciliation Procedure approved in condition 7-5.
7-9	The Impact Reconciliation Report required pursuant to condition 7-8 shall provide the location and spatial extent of the clearing undertaken as a result of the proposal during each year of each biennial reporting period.
7-10	The proponent may apply in writing and seek the written approval of the CEO to reduce all or part of the contribution payable under condition 7-2 where:
	(1) a payment has been made to satisfy a condition of an approval under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> in relation to the proposal; and
	(2) the payment is made for the purpose of counterbalancing impacts of the proposal on matters of national environmental significance identified in condition 7-1.

There are no conditions of Commonwealth approval EPBC 2019/8601 specifically relating to this IRP. However, this Commonwealth approval does require payments to be made to the PEOF that are related to those payments identified in MS 1154. The Department of Climate Change, Energy, the Environment and Water (DCCEEW) has requested that the biodiversity values required to be offset under EPBC 2019/8601 be listed in this IRP. Therefore, those conditions are outlined in Table 5.

Table 5: Conditions of EPBC 2019/8601 Relevant to PEOF Payments

Condition No.	Condition
8.	To compensate for the residual significant impacts of clearing of up to 219.8 ha of Ghost Bat and Northern Quoll habitat, the approval holder must comply with conditions 9-14.
9.	The approval holder must contribute to the Pilbara Environmental Offsets Fund (PEOF). In making the contribution to the PEOF, the approval holder must:

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Condition No.	Condition
	<p>a. Contribute funds towards an offset activity or offset activities that:</p> <ul style="list-style-type: none"> i. is intended to reduce the rate of decline of the Ghost Bat and Northern Quoll; ii. is intended to ensure that a viable population of Ghost Bat and Northern Quoll species remain in the Pilbara bioregion; and iii. has specified outcomes and performance indicators; timeframes and milestones for their achievement; sufficient monitoring to detect achievement of performance indicators, milestones and the outcomes; and regular reporting to the approval holder of the outcomes of the monitoring.
	<p>b. Based on evidence of the actual clearing footprint from the date of commencement of the impact to the second 30 June following commencement of the impact, and then biennially during each subsequent 24 month period ending 30 June, make a payment to the PEOF within 20 business days of receipt of an invoice for payment to the PEOF equivalent to the sum of the following amounts on the date of this approval, by adjustment in accordance with the consumer price index (CPI) from the date of this approval decision until the date on which any payment is made, a minimum of:</p> <ul style="list-style-type: none"> i. At least \$3,000 AUD (excluding GST) per hectare for the 47.4 hectares (including cave CMRC-02) identified as critical habitat for Ghost Bat and/or Northern Quoll being cleared within the development envelope). ii. At least \$1,500 AUD (excluding GST) per hectare for the 172.3 hectares identified as suitable foraging habitat for the Ghost Bat being cleared within the development envelope and not already counted under condition 9(b)(i).
	<p>c. As an advance payment, prior to commencement of the impact, contribute \$100,000 to the PEOF towards achieving the outcomes set out in condition 9(a). This advanced payment is not additional to the biennial payments required by condition 9(b).</p>
Definitions	Critical habitat for Ghost Bat and/or Northern Quoll means gorge/gully (0.1 ha), hillcrest/hillslope (40.1 ha) and major drainage (7.2 ha) within the development envelope as shown in Attachment 7.
Definitions	Suitable foraging habitat for the Ghost Bat means sand plain (26.0 ha), spinifex sandplain (13.1 ha), low stony hills (66.7 ha) and stony plain (66.5 ha) within the development envelope as shown in Attachment 7.



2 Impact Reconciliation Procedure

2.1 Identification of Environmental Values Requiring Offsets

Table 6 identifies the environmental values that require offsets under MS 1154 and EPBC 2019/8601 approvals. Although the State and Commonwealth approvals are worded slightly differently regarding environmental values to be offset, both approvals effectively refer to the same environmental values as each other spatially, as per Figures 9, 10, and 11 of MS 1154 and Attachment 7 of EPBC 2019/8601. Therefore, for the purposes of offset calculations, the environmental values referred to in MS 1154 are equivalent to those referred to in EPBC 2019/8601.

Table 6: Environmental Values Requiring Offsets

Environmental Value (defined under MS 1154) to be cleared ¹	Equivalent Protected Matter (defined under EPBC 2019/8601) to be cleared	Area to be Offset (ha)	IBRA Region and Subregion	Offset Rates (\$/hectare)		Maximum Total to be Offset (\$) ⁴
				MS 1154 ²	EPBC 2019/8601 ³	
Critical habitat for Northern Quoll	Critical habitat for Ghost Bat and/or Northern Quoll, including CMRC-02	Up to 47.4 ha	Pilbara, Chichester	\$1,562 (Higher rate)	\$3,000 (Critical habitat)	\$142,200 (47.4 ha x \$3,000)
Critical habitat for Ghost Bat			Pilbara, Chichester	\$1,562 (Higher rate)	\$3,000 (Critical habitat)	
Riparian vegetation			Pilbara, Chichester	\$1,562 (Higher rate)	\$3,000 (Critical habitat)	
Vegetation in good to excellent condition	Suitable foraging habitat for Ghost Bat (Sand Plain, Stony Plain, Low Stony Hills and Spinifex Sandplain)	Up to 172.3 ha	Pilbara, Chichester	\$781 (Base rate)	\$1,500 (Supporting habitat)	\$258,450 (172.3 ha x \$1,500)
Total amount to be offset						\$400,650
Maximum total amount payable to PEOF (Commonwealth requirement)						\$400,650
Initial contribution ^{5, 6}						\$100,000

1. See also Appendix A.

2. Rates are calculated on the 2019-2020 financial year as required by condition 7-3 of MS 1154. Rates are shown in Australian dollars and do not include GST. Rates are to be indexed annually as per condition 7-4 of MS 1154.

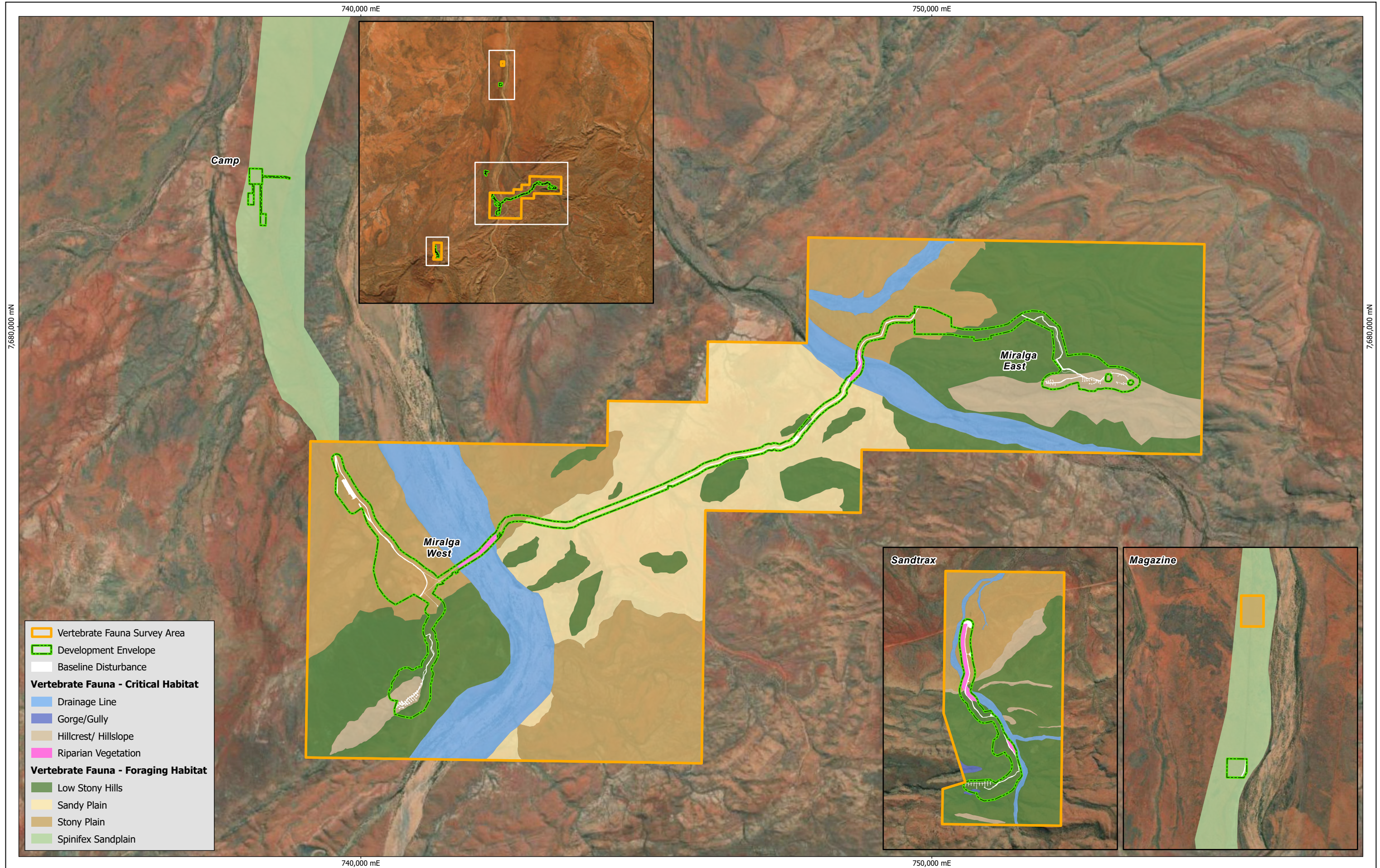
3. Rates are calculated on the 2020-2021 financial year as required by condition 9(b) of EPBC 2019/8601. Rates are shown in Australian dollars and do not include GST. Rates are to be indexed annually as per condition 9(b) of EPBC 2019/8601.

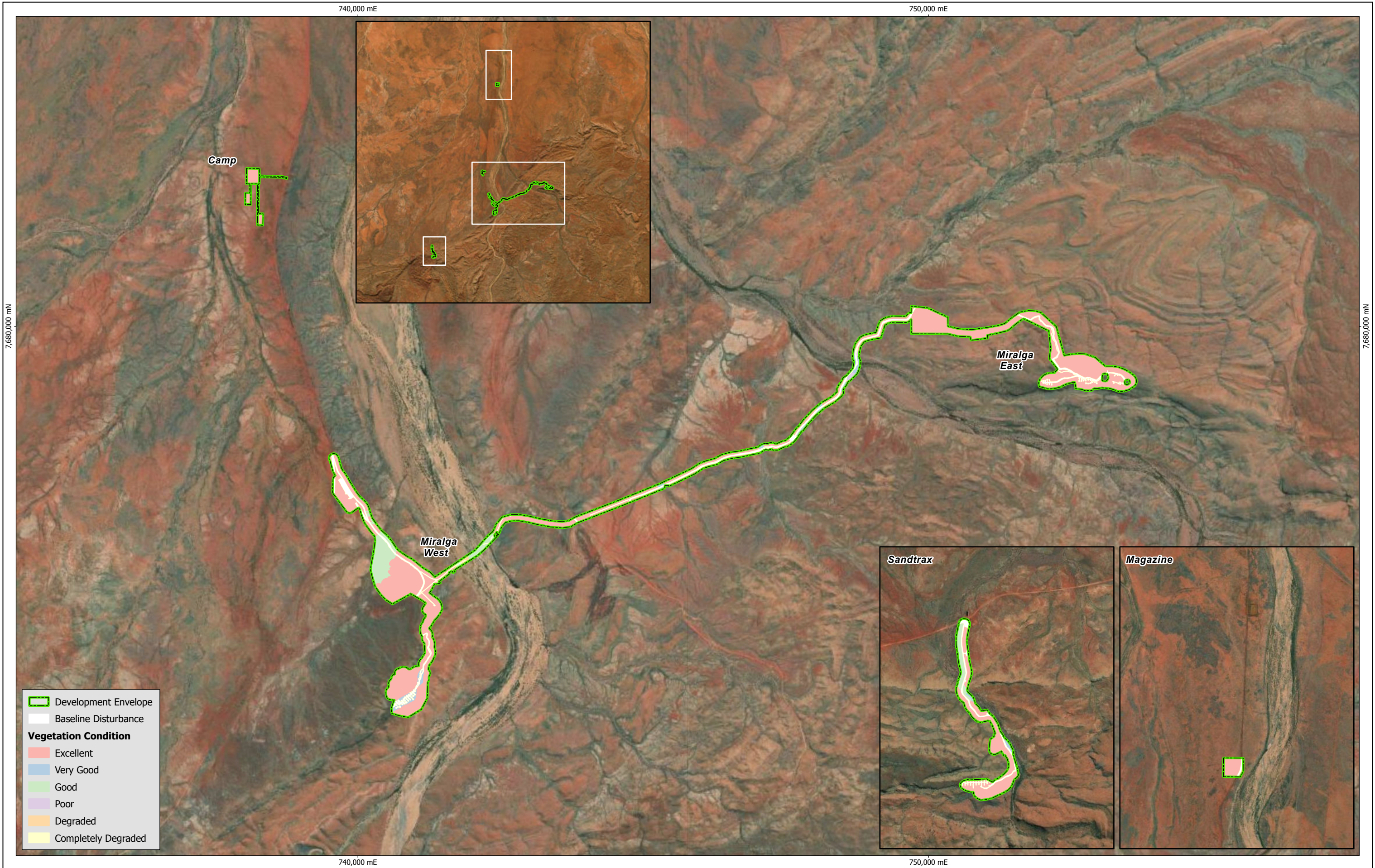
4. Offsets for environmental values should not be duplicated, therefore the higher rates specified by EPBC 2019/8601 for each environmental value to be offset have been used to calculate the maximum total offset payable.

5. The initial contribution required prior to commencement of action, as per condition 9(c) of EPBC 2019/8601.

6. Atlas made an initial contribution of \$100,000 on 19 March 2021 (DWER invoice RI003191), prior to the commencement of the action on 15 June 2021.

The values requiring offsetting are shown as mapped from surveys on Figure 1 and Figure 2.







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2.2 Method to Determine Clearing

This section:

- Provides the clearing baseline against which future clearing will be measured.
- Provides context on Atlas Iron's Ground Disturbance Permit (GDP) Procedure, an internal process established to approve, control and verify ground disturbance.
- Describes how the extent of clearing will be determined for the purpose of reporting.

2.2.1 Baseline Data

2.2.1.1 Vegetation

Vegetation was mapped by Woodman Environmental following field surveys undertaken in 2019 (Woodman Environmental, 2019). Vegetation mapping includes a 'cleared' mapping unit, which represents areas that were recorded as already cleared. The other 12 mapping units represent native vegetation in Excellent to Degraded condition and cover the vast majority of the Development Envelope.

Following a change to the Proposal under section 43A of the EP Act during assessment, the Proposal is entirely within the Chichester subregion of the Pilbara IBRA region.

Vegetation type and condition mapping has previously been provided in Figures 5.3 and 5.4 of the Referral Document (Atlas, 2020a) and Figure 5 of the section 43A request to change the Proposal during assessment (Atlas, 2020b).

2.2.1.2 Fauna Habitat

Vertebrate fauna habitat was mapped predominantly by Biologic Environmental Survey following field surveys undertaken in 2019 (Biologic, 2020). Fauna habitat at the camp area was mapped by Outback Ecology (2012). The fauna habitat mapping does not distinguish existing cleared areas.

Fauna habitat mapping has previously been provided in Figure 6.1 of the Referral Document (Atlas, 2020a) and Figure 6 of the section 43A request to change the Proposal during assessment (Atlas, 2020b).

2.2.1.3 Existing Cleared Areas

Atlas is aware of some areas that are cleared but are not mapped as such in Woodman Environmental's vegetation mapping. These areas were either not marked as cleared by Woodman Environmental (e.g. due to survey limitations) or have been cleared since the survey was undertaken (but not as part of this Proposal). For the purposes of defining baseline data, Atlas considers both of these areas as already cleared. Areas considered cleared will be captured in IRRs.

As the fauna habitat mapping does not map cleared areas, the areas considered cleared of vegetation are also considered cleared of fauna habitat.

See also Section 2.2.3 for how clearing unrelated to this Proposal is to be handled when it occurs after the baseline data has been collected.

2.2.2 Ground Disturbance Permits

Atlas's Ground Disturbance Permit (GDP) Procedure (950-EN-PRO-0006) will apply for all ground disturbance undertaken for the Proposal. The GDP Procedure document 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.

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2. A GDP application is made to the Environment, Heritage & Approvals (EHA) 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 EHA Team. The EHA Team follows up any overdue GDPs.
7. The master ground disturbance layer in Atlas'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.

2.2.3 Determining the Extent of Clearing

The extent of clearing for each environmental value will be determined through spatial data analysis and reported in the IRR. 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 7):

$$\text{New Clearing} = \text{Total Clearing} - \text{Previously Reported Clearing} - \text{Other Clearing}$$

Table 7: 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.



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Term	Definition
Other Clearing	<p>Extent of clearing that is not part of this Proposal, i.e. clearing that is not attributable to the Proposal. Examples include:</p> <ul style="list-style-type: none"> • Clearing that already existed prior to the implementation of the Proposal, e.g. existing roads and tracks. • Clearing undertaken inside the Development Envelope by others, e.g. pastoralist activities. • Other clearing undertaken by Atlas in a lawful manner. Examples include clearing: <ul style="list-style-type: none"> ○ Exempted by the <i>Environmental Protection (Clearing of Native Vegetation) Regulations 2004</i>, such as for mining exploration. ○ Undertaken for the ALRE in accordance with clearing permits CPS 5343/4 and CPS 9394/1. <p>Future amendments to Other Clearing – e.g. to account for new areas of Other Clearing – will be accounted for in IRRs.</p>

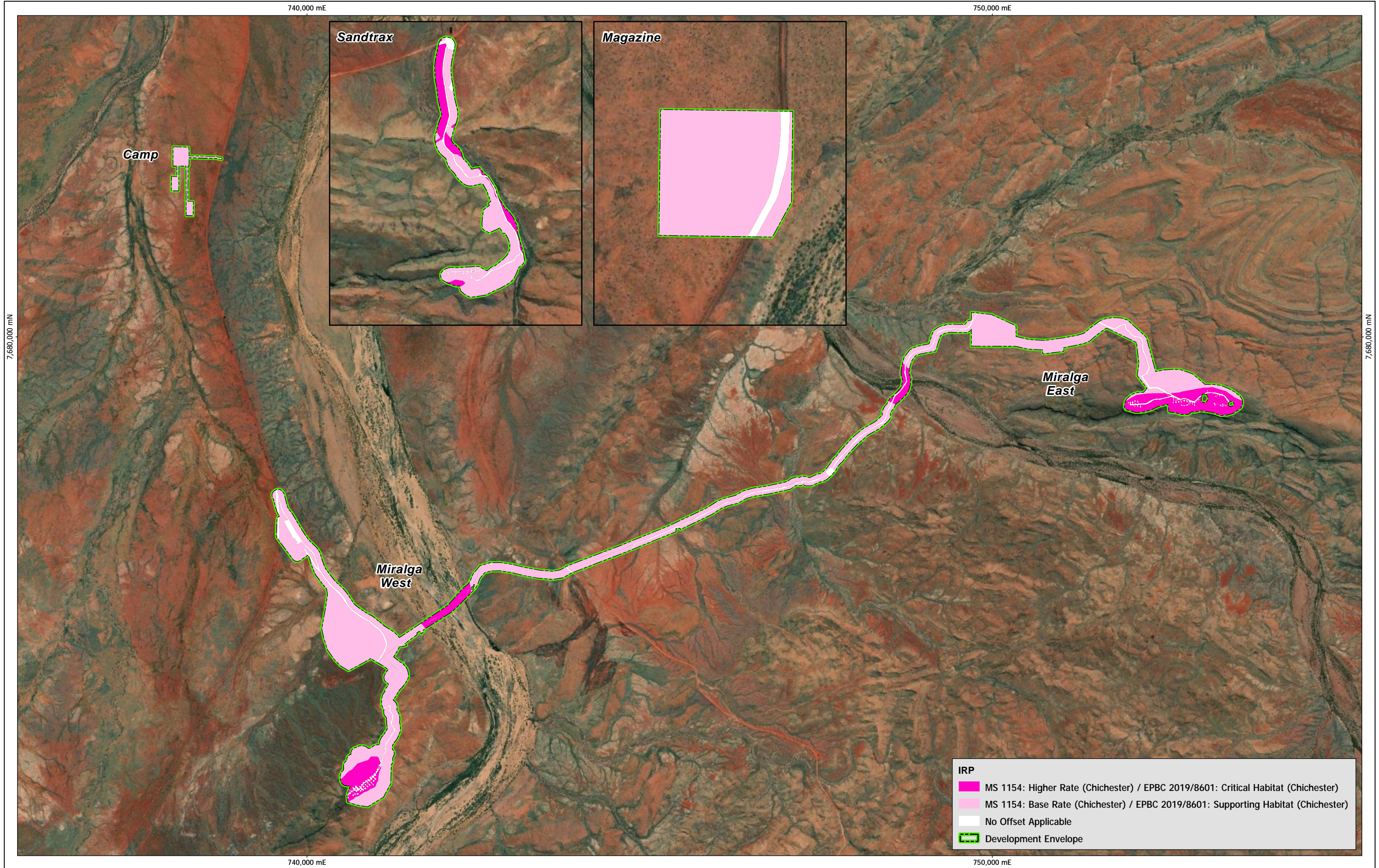
Note: Only native vegetation is included in calculations. Refer to the baseline described in Section 2.2.1.

Figure 3 shows the offset rates applicable within the Development Envelope based on the biodiversity values identified in Table 4 (as shown on Figure 1 and Figure 2) and existing clearing (i.e. Other Clearing in the formula above).

To determine the extent of clearing subject to each offset rate identified in Table 6, areas of New Clearing are compared to Figure 3.

Note that the areas subject to the base and higher rates shown on Figure 3 have been determined in accordance with the published guidance for IRPs (DWER, 2020). The method for allocating particular values to one value or another using spatial data is provided in Appendix A. The areas within the Development Envelope currently subject to each offset rate as shown on Figure 3 are:

- Base rate – 425.29 ha.
- Higher rate – 85.64 ha.
- No offset applicable – 45.82 ha.





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3 Reporting

Atlas will prepare one or more IRRs to document the clearing undertaken. IRRs will be provided to DWER to enable DWER to determine the contributions payable for that biennial period.

3.1 Frequency and Timing

3.1.1 MS 1154

IRRs will be prepared biennially (i.e., every two years). The first reporting period commenced on the day ground disturbing activities occurred (15 June 2021) and ended on the second 30 June following (30 June 2022). Each successive biennial reporting period runs from 1 July until the second 30 June following, unless otherwise agreed by the CEO of DWER.

Table 8 outlines the timeframes and frequency of impact reconciliation activities under this IRP.

Table 8: Impact Reconciliation Reporting Periods

Reporting Period ¹	Action	Timing
–	Ministerial Statement issued	23 November 2020
–	Clearing commenced	15 June 2021
Period 1	Clearing undertaken during period	15 June 2021 – 30 June 2022
	Survey pick-up	August 2022
	IRR submitted to DWER	31 October 2022
Period 2	Clearing undertaken during period	1 July 2022 – 30 June 2024
	Survey pick-up	August 2024
	IRR submitted to DWER	31 October 2024
Period 3	Clearing undertaken during period	1 July 2024 – 30 June 2026
	Survey pick-up	August 2026
	IRR submitted to DWER	31 October 2026
Period 4	Clearing undertaken during period	1 July 2026 – 30 June 2028
	Survey pick-up	August 2028
	IRR submitted to DWER	31 October 2028

1. No further clearing is anticipated beyond the end of the last reporting period identified.

In accordance with the indicative development schedule set out in Table 3, no clearing is expected after the end of the last reporting period identified in Table 8. However, Atlas will continue to prepare and submit IRRs according to the reporting frequency established by Table 8 until DWER advises in writing that Atlas is no longer required to implement this IRP.

3.1.2 EPBC 2019/8601

As per condition 9(b) of EPBC 2019/8601 (varied 17 February 2023), a biennial payment to the PEOF must be made within 20 business days of receipt of an invoice for payment to the PEOF, based on evidence of the actual clearing footprint from the date of commencement to the second 30 June, and biennially thereafter. This reporting timeframe matches the reporting requirements outlined in Table 8.

To support these payments, Atlas will submit IRRs as per Table 8 to both DWER and DCCEE for review and confirmation of contribution payable to the PEOF for that biennial period.



3.2 Content of the IRR

Each IRR will include:

- Identification of the relevant Ministerial Statement, applicable conditions, the Proposal and the reporting period.
- Quantification of clearing undertaken during the reporting period, broken down into the environmental values identified in Table 6 of this IRP.
- Information from surveys supporting the quantification of clearing undertaken, including spatial data representing areas of ground disturbance and supporting reports.
- A quantitative estimate of clearing expected in future.

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.



4 Review and Implementation

No scheduled review of this IRP is required. However, DWER at its discretion may direct Atlas to revise this IRP.

Irrespective of the schedule set out in Table 8, Atlas will continue to implement this IRP until any of the following occurs:

- DWER approves a revised version of this IRP, at which time the revised IRP will be implemented instead.
- DWER advises in writing that this IRP no longer needs to be implemented.



5 References

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Appendix A. Derivation of Applicable Offset Rates Using Spatial Data

The Department of Water and Environmental Regulation (DWER) has published guidance on contributions to the Pilbara Environmental Offsets Fund (PEOF). For each region (DWER, 2020):

- A **base rate** applies for impacts to native vegetation in good to excellent condition.
- A **higher rate** may apply for impacts to some types of specialised environmental values, including but not limited to riparian vegetation, threatened or priority ecological communities, important vegetation types and specialised fauna habitat.
- A **negotiated rate** or alternative approach may be applied in special circumstances.

For the Miralga Creek DSO project, Atlas has applied the base rate and higher rates as shown in Table A1, which align to Ministerial Statement 1154 and EPBC 2019/8601.

Table A1: Biodiversity Values Assigned to Each Offset Rate

PEOF Offset Rate		Environmental Values Assigned to Offset Rate		Mapping Units Corresponding to Environmental Values ¹
MS 1154	EPBC 2019/8601	MS 1154	EPBC 2019/8601	
Base rate	Supporting habitat	Native vegetation in good to excellent conditions	Suitable foraging habitat for Ghost Bat	Native vegetation in Good, Very Good and Excellent condition Sand Plain, Stony Plain, Low Stony Hills, and Spinifex Sandplain
Higher rate	Critical habitat	Critical habitat for Northern Quoll	Critical habitat for Ghost Bat and/or Northern Quoll, including CMRC-02	Hillcrest/Hillslope, Gorge/Gully and Major Drainage habitats
	Critical habitat	Critical habitat for Ghost Bat		Hillcrest/Hillslope and Gorge/Gully habitats
	Critical habitat	Riparian vegetation		Vegetation type VT 5 ²

1. The fifth column lists which mapping units correspond to the environmental values described in the third and fourth columns by MS 1154 and EPBC 2019/8601 respectively. Refer to the original referral documentation for the full description of each vegetation community and fauna habitat.

2. Vegetation type VT 5 is encoded in the spatial data as vegetation where the value in the CommunityCode field is 5.

If a particular value meets the criteria for both rates, the higher rate will be applied.

Table A2 shows the construction of the base rate and higher rate areas from spatial data as shown in Figure 3 in the main document. The rules in Table A2 give effect to the assignments in Table A1, ensuring that the higher rate takes precedence where the criteria for both rates are met and that neither rate is applied to cleared areas.

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Table A2: Derivation of Applicable Offset Rates Using Vegetation and Fauna Habitat Spatial Data

	Vegetation Type	Vegetation Condition	Fauna Habitat	
			Suitable foraging habitat for Ghost Bat: <i>Sand Plain</i> <i>Stony Plain</i> <i>Low Stony Hills</i> <i>Spinifex Sandplain</i>	Critical Habitat for Ghost Bat and Northern Quoll including CMRC-02: <i>Hillcrest/Hillslope</i> <i>Gorge/Gully</i> <i>Major Drainage</i>
Vegetation	VT 5 (Riparian Vegetation)	Any	MS 1154: Higher rate EPBC 2019/8601: Supporting habitat	MS 1154: Higher rate EPBC 2019/8601: Critical habitat
	All other VTs	Excellent Very Good Good	MS 1154: Base rate EPBC 2019/8601: Supporting habitat	MS 1154: Higher rate EPBC 2019/8601: Critical habitat
		Poor Degraded Completely Degraded	No offset applicable	MS 1154: Higher rate EPBC 2019/8601: Critical habitat
	Cleared	Completely Degraded	No offset applicable	No offset applicable

Note: this table assumes the Proposal is entirely within IBRA subregions covered by the PEOF.