BHP

BHP Pilbara Strategic Assessment

Marillana Creek (Yandi) Validation Notice

29 May 2026

Foreword

Document Version

Rev	Description Of Amendment	Organisation	Date Validation Notice Finalised	Date Validation Notice Effective From
Rev 0	Draft for public consultation	BHP Iron Ore Pty Ltd		
Rev 1	Updated in response to DCCEEW comments; final Validation Notice	BHP Iron Ore Pty Ltd	29 May 2026	29 June 2026

Glossary and Abbreviations

Term	Meaning
Activity	The Activity refers to the proposed expansion of the existing Marillana Creek (Yandi) iron ore mine and includes clearing of up to 95 ha of native vegetation within a 125 ha Activity Area for the construction and operation of above and below water table mine pits and associated infrastructure, as defined in Sections 1.4 and 2.2.
Activity Area	The Activity Area is the spatial extent within which the Activity may be undertaken. It represents the maximum area that could be directly disturbed.
AER	Annual Environmental Report
APOP	Pilbara Strategic Assessment Assurance Plan and Offsets Plan, Revision 2.3. Published May 2023. Supersedes BHP (2018a and 2018b) versions.
Approval	The approval of the taking of an action or class of actions granted by the Minister on 19 June 2017 in accordance with the Program given under section 146B of the EPBC Act.
Approved Proposal	The works and activities for mining operations within the Marillana Creek (Yandi) Life of Mine Proposal comprising the Approved Proposal under the existing Ministerial Statements: 679 (as amended by 1039) as approved under the *Environmental Protection Act 1986* (WA).
Approval Holder	Any person or persons named in an Approval as an Approval Holder who may take action in accordance with the Program.
Assurance Plan	The plan that provides further detail on the process described in the Program, including management of Program Matters, stakeholder management, reporting and auditing requirements and governance arrangements, as approved by the Minister on 15 May 2023.
BC Act	*Biodiversity Conservation Act 2016* (WA)
BHP	BHP Iron Ore Pty Ltd
BNTAC	Banjima Native Title Aboriginal Corporation
Commence, commenced or commencement	Any preparatory works required to undertake a Notifiable Action including clearing, the erection of any onsite temporary structure and the use of heavy duty equipment for the purpose of breaking the ground.
DBCA	Department of Biodiversity, Conservation and Attractions (formerly Department of Park and Wildlife)
DCCEEW	Department of Climate Change, Energy, the Environment and Water (formerly DAWE)
Department, the	The Australian Government Department responsible for the administration of the EPBC Act or successors.

Term	Meaning
Development Envelope	The area within which the Yandi Life of Mine Proposal is located, as defined in Ministerial Statement 679
Direct disturbance	The clearing of native vegetation and/or moving of earth as a result of activities undertaken within the Strategic Assessment Area in accordance with the Program.
DotE	Department of the Environment (now known as the Department of Climate Change, Energy, the Environment and Water [DCCEEW])
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now known as the Department of Climate Change, Energy, the Environment and Water [DCCEEW])
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth).
Ha	Hectare
Impact or impacts	As defined in section 527E of the EPBC Act.
Indicative Footprint Elements	Expected physical elements of the Activity and their approximate location and extent within the Activity Area. It reflects the currently understood physical elements and disturbance but is subject to change during detailed design and implementation.
IRR	Impact Reconciliation Report
Km	kilometre
Minister	Minister responsible for administering the EPBC Act (being, at the date of this Validation Notice, the Minister for the Environment).
MNES	Matters of National Environmental Significance
New Listing	Any new listed threatened species or existing species that have been included in a higher endangerment category identified in accordance with Section 4.1.2 of the Program.
New Matters	Other matters protected by a controlling provision of Part 3 of the EPBC Act (other than listed threatened species) that may be identified in accordance with Section 4.1.2 of the Program.
Notifiable Action	An activity that is considered likely to have a relevant impact on a Program Matter based on an assessment of the proposed Activity against the thresholds defined for Program Matters in the Assurance Plan and Offset Plan. In relation to the voluntary part of the Program, this includes an activity that is considered likely to have a relevant impact on a New Listing or a New Matter.

Term	Meaning
Notifiable Action triggers	Criteria relating to the presence of a species, which if met, require a Validation Notice to be prepared.
NVCP	Native Vegetation Clearing Permit
Offsets Plan	The plan that provides further detail on the processes that will be implemented to identify and deliver offsets associated with a Notifiable Action, as approved by the Minister on 15 May 2023.
OSA	Overburden Storage Area
Practicable	Reasonably practicable having regard to, among other things, local conditions and circumstances (including costs) and to the current state of technical knowledge.
PEOF	Pilbara Environmental Offset Fund
Program	The BHP Billiton Iron Ore Pilbara Strategic Assessment Program endorsed by the Minister on 11 May 2017. Whilst the Agreement refers to a Plan, it was agreed with the Department that the term Program is a better reflection of the systems and processes to be delivered by BHP.
Program Matters	The listed threatened species Pilbara Leaf-Nosed Bat (*Rhinonicteris aurantius*), Northern Quoll (*Dasyurus hallucatus*), Greater Bilby (*Macrotis lagotis*) Ghost Bat (*Macroderma gigas*), Pilbara Olive Python (*Liasis olivaceus barroni*), Night Parrot (*Pezoporus occidentalis*) and Grey Falcon (*Falco hypoleucos*) as detailed in the Pilbara Strategic Assessment Assurance Plan and Offsets Plan (BHP 2023).
Protected Matters	Matters protected by a provision of Part 3 of the EPBC Act.
PMO	Program Matter Outcome
Significant Amendment	The amendment to the existing approved Yandi mine that is significant according to the definition in the *Environmental Protection Act 1986* (WA) (the Act) and requires referral under s38 of the Act (i.e. the Activity, the subject of this Validation Notice)
Strategic Assessment Area or SAA	The geographical extent of the assessment and boundaries within which the Program must be implemented, as depicted in Appendix 1.
SEA	Strategic Environmental Approval
Study Area	The geographical extent of a survey's boundaries
TSSC	Threatened Species Scientific Community
Validation Notice	This Validation Notice under Part C of the endorsed Program
WA	Western Australia

Contents

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Figures

1 Introduction

1.1 Background

BHP Iron Ore Pty Ltd (BHP) currently operates iron ore mines and associated rail and port infrastructure within the Pilbara region of Western Australia (WA). Current mining operations include:

- Newman Joint Venture hub (NJV)- located approximately 2 km west of Newman township and consists of Mount Whaleback, and Orebodies 29, 30 and 35
- Mining Area C – Northern and Southern Flanks - located approximately 100 km northwest of Newman township
- Wheelarra Hill (Jimblebar) Mine, Orebody 18 and Orebody 31 (Jimblebar hub) - located approximately 35 km east of Newman township
- Eastern Ridge hub - located approximately 5 km east of Newman township and consists of Orebodies 23, 24, 25 and 32
- Marillana Creek (Yandi) Mine - located approximately 90 km northwest of Newman township.

Mining operations at Yandi were first approved in 1988, with mining commencing in 1991. Since that time the Yandi mine has been in continuous operations.

Ore from the mining operations detailed above is transported by rail to Port Hedland via the BHP Newman to Port Hedland Mainline (and associated spur lines). Ore is then shipped overseas via Port Hedland at the BHP facilities at Nelson Point and Finucane Island.

BHP proposes to expand the existing Yandi mine through mining of the E8 deposit. This Validation Notice has been prepared to document the validation process for the Yandi mine expansion (the Activity) as required under the *BHP Billiton Iron Ore Pilbara Strategic Assessment Program* (the Program) (BHP 2017). This Validation Notice only applies to the Activity and does not apply to the existing operations or actions associated with the existing Yandi mine. BHP will review actions related to the existing operations on a case-by-case basis to determine if referral to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) is required.

1.2 Framework

The Program (BHP 2017) was endorsed by the Australian Government Minister for the Environment and Energy on 11 May 2017 and an Approval Decision (the Approval) for taking actions in accordance with the Program was issued on 19 June 2017. The Approval applies to the development of new iron ore mines and associated infrastructure and the expansion of existing iron ore mines and associated infrastructure within a defined Strategic Assessment Area (SAA) (Figure 1-1).

Key commitments of the endorsed Program and conditions of approval include the preparation and approval of an Assurance Plan (BHP 2018a) and Offsets Plan (BHP 2018b) and undertaking a validation process including preparation of a Validation Notice for each Notifiable Action undertaken in accordance with the Program.

The original versions of the Assurance Plan (BHP 2018a) and Offset Plan (BHP 2018b) have been revised and collated into one document now known as ‘the Assurance Plan and Offsets Plan’ (APOP) (BHP 2023) and were endorsed by the Minister on 15 May 2023 following a review of the Assurance Plan and the Offset Plan in 2022. This Validation Notice has been drafted in accordance with the APOP, which sets out the current processes and requirements for compliance with the Program.

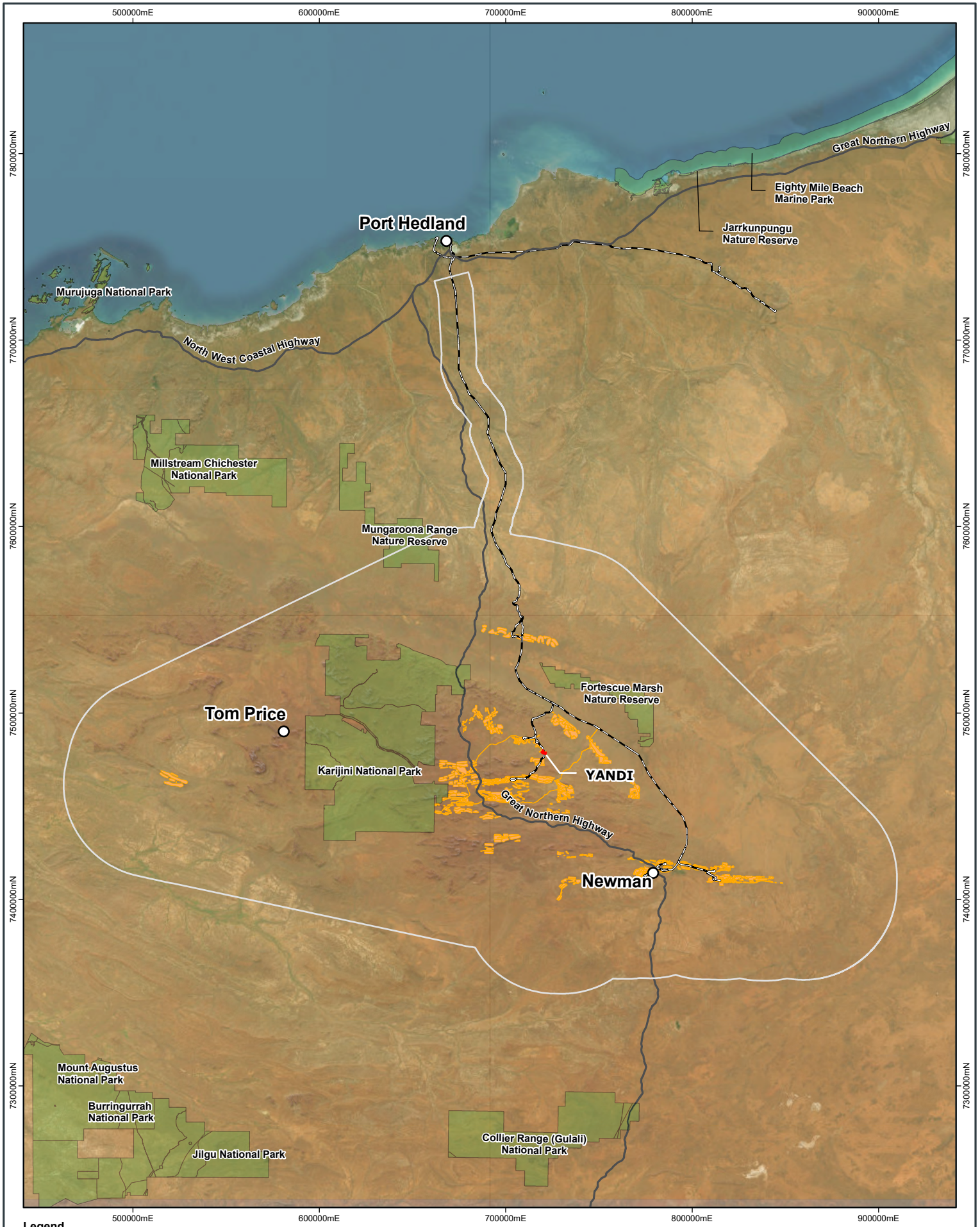
The APOP defines the environmental objectives, procedures and governance arrangements to ensure that all future activities within the scope of the Program are undertaken in accordance with the endorsed Program and achieve the Program's objectives. The APOP includes Program Matter Outcomes (PMO), which are measurable outcomes that BHP must meet to achieve the objectives developed for each Program Matter. Notifiable Action triggers are set out within the APOP to prompt the requirement for a Validation Notice.

The APOP also ensures that appropriate offset pathways are applied to address residual impact(s) of actions under the Program at an appropriate time.

In accordance with Part C of the Program, BHP has undertaken a validation process for the Yandi Life of Mine Program activity, to ensure that the PMOs are met across the SAA.

This Activity is considered to require a Validation Notice, as the Activity:

- is within the scope of the Program
- meets one or more of the Notifiable Action triggers identified in the APOP for the Pilbara Olive Python (*Liasis olivaceus barroni*).



Legend

- Yandi Activity Area
- Strategic Proposal Area (7,650,074 ha)
- Strategic Proposal Full Conceptual Development Scenario (98,500 ha)
- Conservation Area
- Townsite
- Major Roads
- Rail (BHP)

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0 25 50 75 100

KILOMETRES

GDA 1994 MGA ZONE 50

BHP

PUBLIC

MARILLANA CREEK (YANDI)
REGIONAL LOCATION

WAIO PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4:	1:2,600,000	REQUESTOR:	PROJECTS	FIGURE:	1-1
DATE:	20/05/2026	PREPARED:	GEOMATICS	NO:	A1394_028A
		REVIEWED:			

Document Path: Y:\Jobs\A1001_A1500\A1394\3Project\A1394_028_E_YandiE8_VN_RegionalLocation2_RevA.aprx

1.3 Program, Assurance Plan and Offsets Plan requirements

The endorsed Program and APOP specify the requirements and content of the Validation Notice. A summary of where the specified requirements and contents are addressed in this Validation Notice are provided in Table 1-1.

Table 1-1: Content of Validation Notice

Item	Strategic Assessment Program Offsets Plan Requirements	Sections which address these Requirements
1	Decision whether a Validation Notice is required for the Activity	Section 1.7
2	BHP authorisation and date the Validation Notice will take effect	Foreword
3	Program Matters and triggers relevant to the Validation Notice	Section 5 and Table 1-
4	Project description including Activity location, boundary of the Activity, area of disturbance and timeframes for the duration of activities	2
5	Stakeholder engagement and public consultation	3
6	Review of baseline and contemporary data, survey findings, a description of the direct and indirect impacts, description of proposed monitoring activities, detail how residual impacts to the Program Matters are calculated and demonstration of achievement of Program Matter Outcomes	5
7	Estimates of direct disturbance and residual impacts	2, 5, 7
8	Application of the mitigation hierarchy to avoid impacts on Program Matters	5
9	Outline the objective/s of the offset project/s, consistent with the scope of actions to offset impacts stated in the Program and APOP	7
10	Outline how the offset project/s will support the long-term persistence and viability of the relevant Program Matters	7
11	Commitment to measurable offset project milestones	7
12	Key monitoring, management, clearing, offset, contingency and corrective action commitments	8

1.4 Activity overview

The proposed Activity is located approximately 90 km northwest of Newman in the central Pilbara region of Western (Figure 1-1). BHP has prepared the Validation Notice for the development and operation of the Activity (**Figure 1-2** and Section 2). The Activity includes clearing of 95 hectares (ha) of native vegetation within a 125 ha Activity Area for the construction and operation of above and below water table mine pits and associated infrastructure.

The existing Yandi mine and associated activities are excluded from the Program as described in Section 2.3 of the Program as they are existing operations and infrastructure approved prior to commencement of the Program via the following:

- Mining operations at Yandi were approved by the Western Australian Minister for Environment, under Part IV of the *Environmental Protection Act 1986* (WA) under Ministerial Statement 29 dated 25 May 1988. Mining

operations within a 13,158 ha Development Envelope (excluding the proposed Activity) are currently approved by the Western Australian Minister for Environment under Ministerial Statement 679 dated 6 July 2005, as amended by Ministerial Statement 1039 dated 4 October 2016.

1.5 Activity Area

The Activity Area (Figure 1-2) is the area where the Activity will be undertaken and encompasses a total area of 125 ha. The Indicative Footprint Elements occur within the Activity Area and detail the indicative location of elements that are part of the Activity (i.e. mine pits, haul and access roads, and associated infrastructure; Figure 1-2). A total of up to 95 ha of native vegetation may be cleared within the 125 ha Activity Area.

The Activity Area borders an existing third party iron ore mine to the south and east, as shown in Figure 1-2.

1.6 Timeframes

This Validation Notice takes effect 20 business days from the date of authorisation (see Foreword page). If the Notifiable Action has not substantially commenced within a period of five years from that authorisation, BHP or a subsequent Approval Holder must not implement the Notifiable Action until either:

- DCCEEW authorises commencement of the action by BHP or the Approval Holder; or
- BHP issues a new Validation Notice for the action in accordance with this Program. This process extends the commencement timeframe for another five years.

The Notifiable Activity is forecast to be completed by approximately 2042 as this is the predicted life span of the mine operation including construction, mine operation, rehabilitation and closure.

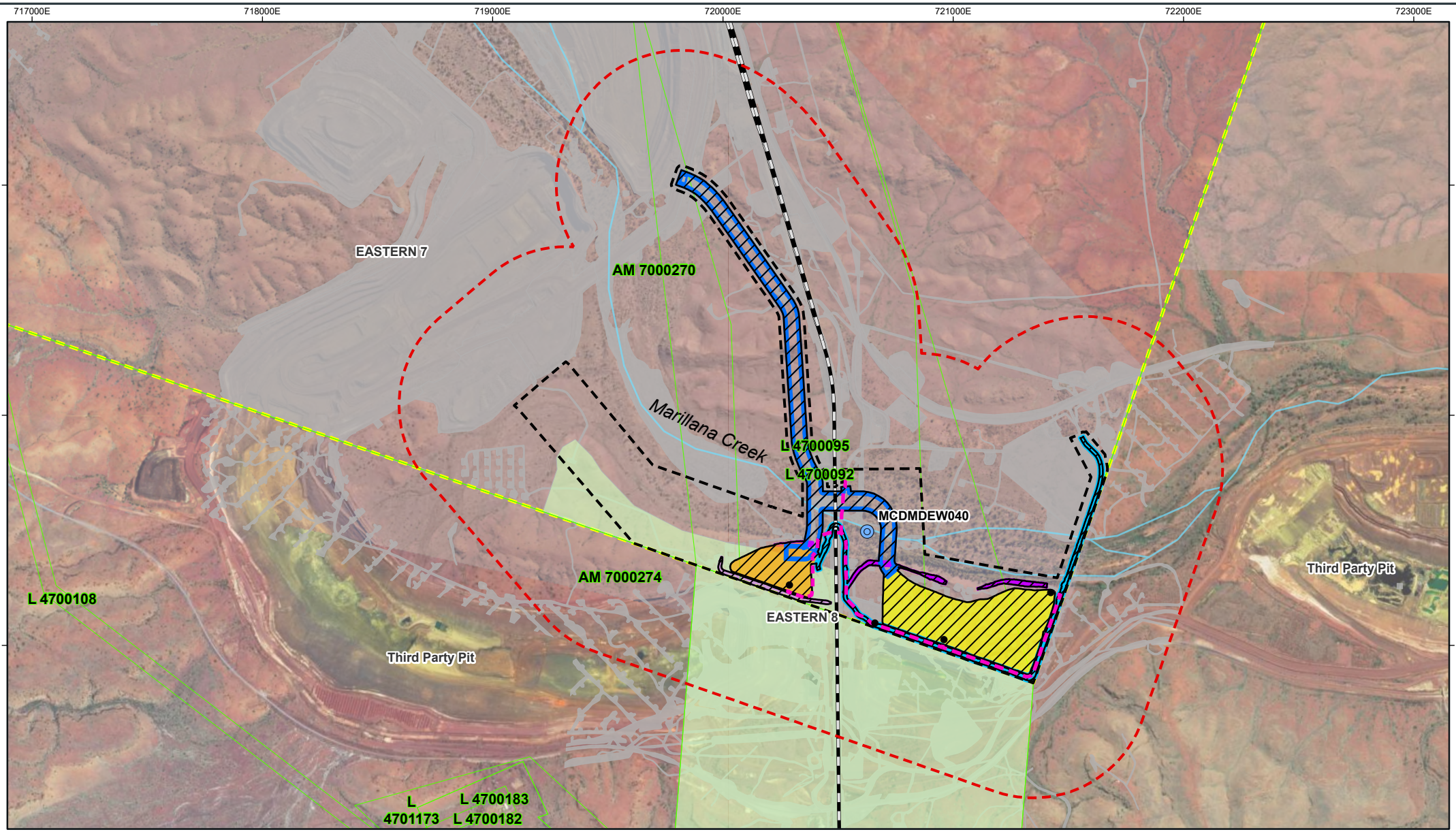
1.7 Decision for a Validation Notice

A Validation Notice is required for actions that are notifiable, in accordance with Notifiable Action triggers set out in the APOP (BHP 2023) and reproduced in Table 1-. The Activity is a Notifiable Action as it fulfils the triggers of the APOP for one Program Matter, the Pilbara Olive Python (*Liasis olivaceus barroni*).

The Validation Notice will demonstrate how the implementation and operation of the Activity will meet each of the PMOs provided for the Program Matters in the APOP by undertaking an impact assessment, applying the mitigation hierarchy and assessing residual impacts. This section of the Validation Notice satisfies the requirements of Section 6.2 of the APOP. The decision for a Validation Notice will also be reported in the Annual Environmental Report (AER).

The Activity does not fulfil the Notifiable Action triggers for Northern Quoll (*Dasyurus hallucatus*), Ghost Bat (*Macroderma gigas),* Greater Bilby (*Macrotis lagotis*), Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*), Grey Falcon (*Falco hypoleucos*) and Night Parrot (*Pezoporus occidentalis*) (Table 1-). Sections 5.2, 5.3, 5.4, 5.5, 5.6, 5.7 and 5.8 outline the findings in relation to these species to support this decision.

16 contemporary and historical fauna surveys which either intersect the proposed Activity Area and/or the 500 m buffer have been completed between 1994 and 2026, as summarised in Table 4-1 and Appendix 2. No Program Matters, other than the Pilbara Olive Python were identified as occurring within the Activity Area or 500 m buffer.



Activity Area
Activity Area 500 m buffer
Indicative Footprint Elements
Adjacent Mining Tenements
Ministerial Statement 679 / 1039
Native Vegetation Clearing Permit
Cleared Area
Western Pit
Eastern Pit
LV road
Haul Road
Flood bunds
Watercourse
BHP rail
Dewatering Pipelines
Discharge point
Production bore

N

0 0.5 1
KILOMETRES

GDA 1994 MGA ZONE 50

BHP

PUBLIC

YANDI VALIDATION NOTICE
ACTIVITY AREA

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4:	1:22,365	REQUESTOR:	ENV APPROVALS	FIGURE:	1-2
DATE:	28/05/2026	PREPARED:	GEOMATICS	NO:	A1394/002E

Document Path: Y:\Jobs\A1001_A1500\A1394\3Project\A1394_002_E_YandiE8_VN_ActivityAreaandIF_RevD.aprx\A1394_002_E_YandiE8_VN_ActivityAreaandIF_RevE

Table 1-2: Notifiable Action Triggers for the Activity

Program Matter	Notifiable Action Trigger	Activity Area Program Matter Data*	Applicable Trigger?
Ghost Bat (*Macroderma gigas*)	Within the Activity Area and or within a 500 m buffer of the Activity boundary, there is: Presence of Ghost Bat critical habitat and or supporting habitat **AND** Presence or sign/s of Ghost Bat colony or residing individuals	Critical and supporting habitat is present within the Major Drainage Line, Medium Drainage Line, Drainage Area/Floodplain, Stony Plain, and Wetland habitats within the Activity Area and 500 m buffer. The Ghost Bat has not been recorded in the Activity Area, or within the 500 m buffer despite extensive survey effort over multiple years including contemporary surveys. Therefore, despite the presence of some critical and supporting habitats, there is no evidence that a population, colony or residing individuals are present within the Activity Area or 500 m buffer.	No
	Within the Activity Area there is: Presence of Ghost Bat critical habitat and or supporting habitat **AND** Presence or sign of Ghost Bat transient, infrequent or dispersing individual/s	Whilst there is critical and supporting habitat for the Ghost Bat present within the Activity Area (described above), there are no records or signs of transient, infrequent or dispersing individuals.	No
Northern Quoll (*Dasyurus hallucatus*)	Within the Activity Area and or within a 500 m buffer of the Activity boundary, there is: Presence of Northern Quoll critical habitat and or supporting habitat **AND**	There is no critical habitat present in the Activity Area or 500 m buffer. Supporting habitat is present in the Activity Area and 500 m buffer within the Major Drainage Line, Medium Drainage Line, Wetland, Stony Plain and Drainage Area/Floodplain habitats. One record of Northern Quoll has historically been recorded 800 m northwest of the Activity Area, and outside of the 500 m buffer. This record comprises a direct observation of an individual. Another record occurs approximately 8.8 km to the	No

Program Matter	Notifiable Action Trigger	Activity Area Program Matter Data*	Applicable Trigger?
	Presence or sign/s of Northern Quoll colony or residing individuals	northwest, a deceased Northern Quoll that was observed on the main Yandi access road. Both records are from pre-2016 and are considered to be transient, dispersing individuals. Despite the presence of some supporting habitat, there is no evidence of a Northern Quoll population, colony or residing individuals in the Activity Area or 500 m buffer, despite extensive survey effort. The closest known population present within ridgelines is located approximately 13 km to the north (Astron 2023).	
	Within the Activity Area: Presence of Northern Quoll critical habitat and or supporting habitat. **AND** Presence or sign of Northern Quoll transient, infrequent or dispersing individual/s.	There is no critical habitat present within the Activity Area. Supporting habitat is present, as described above. There are no records of transient, infrequent or dispersing individuals of Northern Quoll within the Activity Area.	No
Greater Bilby (*Macrotis lagotis*)	Within the Activity Area and or within a 500 m buffer of the Activity boundary, there is: Presence of Greater Bilby critical habitat and or supporting habitat **AND** Presence or sign/s of Greater Bilby residing individuals	There is no critical habitat for the Greater Bilby present within the Activity Area or 500 m buffer due to the high level of existing disturbance from mining operations and the lack of extensive connected sand plain habitat, given that most of the soils are stony or hard and not suitable for burrowing, Suitable supporting habitat is present within the Drainage Area/Floodplain, Stony Plain, Sand Plain and Major and Medium Drainage Line habitats within the Activity Area and/or 500 m buffer; however, these are considered marginal at best. There are no records of the Greater Bilby within the Activity Area and/or 500m buffer, with the closest record being 26 km to the northeast. Despite the	No

Program Matter	Notifiable Action Trigger	Activity Area Program Matter Data*	Applicable Trigger?
		presence of some supporting habitat, there is no presence or sign of Greater Bilby residing individuals.	
	Within the Activity Area there is: Presence of Greater Bilby critical habitat and or supporting habitat **AND** Presence or sign of Greater Bilby transient, infrequent or dispersing individual/s	There is no critical habitat for the Greater Bilby present within the Activity Area; however, supporting (marginal) habitat is present within the Drainage Area/Floodplain, Stony Plain, Sandy/Stony Plain and Major and Medium Drainage Line habitats within the Activity Area. There is no evidence of transient, infrequent or dispersing Greater Bilby individuals within the Activity Area.	No
Pilbara Olive Python *(Liasis olivaceus barroni)*	Within the Activity Area and or within a 500 m buffer of the Activity boundary, there is: Presence of Pilbara Olive Python critical habitat and or supporting habitat **AND** Presence or sign/s of a Pilbara Olive Python population or residing individuals	Critical habitat for the Pilbara Olive Python occurs within the Wetland and Major Drainage Lines within the Activity Area and/or 500m buffer. Supporting habitat occurs within the Medium Drainage Line habitat. There are two historical records of the Pilbara Olive Python within the Activity Area and the 500 m buffer, including direct sightings and indirect evidence of skin sloughs and/or scats. This demonstrates that a population or individuals are residing within the Activity Area and/or 500 m buffer.	Yes
	Within the Activity Area there is: Presence of Pilbara Olive Python critical habitat and or supporting habitat **AND**	Critical habitat for the Pilbara Olive Python occurs within the Wetland and Major Drainage Lines within the Activity Area. Supporting habitat occurs within the Medium Drainage Line habitat. There are two historical records of the Pilbara Olive Python within the Activity Area and the 500 m buffer, including direct sightings and indirect evidence of	Yes

Program Matter	Notifiable Action Trigger	Activity Area Program Matter Data*	Applicable Trigger?
	Presence or sign of Pilbara Olive Python transient, infrequent or dispersing individual/s	skin sloughs and/or scats. This demonstrates that a population or individuals are residing within the Activity Area and/or 500 m buffer.	
Pilbara Leaf-Nosed Bat *(Rhinonicteris aurantia)*	Within the Activity Area and or within a 500 m buffer of the Activity boundary, there is: Presence of Pilbara Leaf-nosed Bat critical habitat and or supporting habitat **AND** Presence or sign/s of Pilbara Leaf-nosed Bat colony or residing individuals	There is no critical habitat for the Pilbara Leaf-Nosed Bat present within the Activity Area or 500 m buffer; however, supporting habitat is present within the Wetland, Major Drainage, Medium Drainage, Drainage Area/Floodplain, Stony Plain, Hillcrest/Hillslope, and Gorge/Gully habitats. The Pilbara Leaf-Nosed Bat has not been recorded in the Activity Area or 500 m buffer despite extensive survey effort over multiple years including contemporary surveys. The closest record of the Pilbara Leaf-Nosed Bat is located approximately 15.3 km north of the Activity Area; however, the majority of records occur approximately 17-20 km north of the Activity Area where permanent roosts are known to occur (Astron 2023). Despite the presence of some supporting habitat, there is no evidence that the species resides in the Activity Area or 500 m buffer.	No
	Within the Activity Area there is: Presence of Pilbara Leaf-nosed Bat critical habitat and or supporting habitat **AND** Presence or sign of Pilbara Leaf-nosed Bat transient, infrequent or dispersing individual/s	There is no critical habitat for the Pilbara Leaf-Nosed Bat present within the Activity Area; however, supporting habitat is present within the Wetland, Major Drainage, Medium Drainage, Drainage Area/Floodplain, Stony Plain, Hillcrest/Hillslope and Gorge/Gully habitats. The lack of evidence of the Pilbara Leaf-nosed Bat in the Activity Area, as well as the closest record occurring approximately 15.3 km north of the Activity Area demonstrates that there are no transient, infrequent or dispersing individuals currently (or historically) utilising the Activity Area.	No

Program Matter	Notifiable Action Trigger	Activity Area Program Matter Data*	Applicable Trigger?
Grey Falcon (*Falco hypoleucos*)	Within the Activity Area and or within a 500 m buffer of the Activity boundary, there is: Presence of Grey Falcon critical habitat and or supporting habitat **AND** Presence or sign/s of Grey Falcon residing individuals	Critical habitat for the Grey Falcon occurs within the Major Drainage Line and Drainage Area/Floodplain habitats within the Activity Area and 500 m buffer. Supporting habitat occurs within the Medium Drainage Line and Undulating Low Hills habitats. Despite the presence of some supporting habitat, the Grey Falcon has not been recorded within the Activity Area or 500 m buffer. The closest record of the species is 33.1 km south. This demonstrates that a population or individuals of the Grey Falcon do not reside in the Activity Area or 500 m buffer.	No
	Within the Activity Area there is: Presence of Grey Falcon critical habitat and or supporting habitat **AND** Presence or sign/s of Grey Falcon transient, infrequent or dispersing individual/s	Critical and supporting habitat is present within the Activity Area within the Major Drainage Line and Wetland habitat. The lack of evidence of the Grey Falcon in the Activity Area, despite numerous survey effort, demonstrates that there are no transient, infrequent or dispersing individuals present within the Activity Area.	No
Night Parrot (*Pezoporus occidentalis*)	Within the Activity Area and or within a 500m buffer of the Activity boundary there is: Presence of Night Parrot critical habitat and or supporting habitat **AND** Presence or sign(s) of Night Parrot population(s) or residing individuals	There is no critical habitat for the Night Parrot present within the Activity Area or 500m buffer due to the lack of old growth *Triodia* present and given the high levels of disturbance and fragmentation. Some supporting habitat is present within the Drainage Area/Floodplain, Undulating Low Hills, and Stony Plain habitats. Despite the presence of some supporting habitat, the Night Parrot has not been recorded within the Activity Area or 500 m buffer. The closest record of the	No

Program Matter	Notifiable Action Trigger	Activity Area Program Matter Data*	Applicable Trigger?
		species is 50 km northeast. This demonstrates that a population or individuals of the Night Parrot do not reside in the Activity Area or 500 m buffer.	
	Within the Activity Area there is: Presence of Night Parrot critical habitat and or supporting habitat **AND** Presence or sign(s) of Night Parrot transient, infrequent or dispersing individual/s	There is no critical habitat for the Night Parrot present within the Activity Area (see above). Supporting habitat is present within the Drainage Area/Floodplain, Undulating Low Hills, and Stony Plain, habitats. The Night Parrot has not been recorded within the Activity Area and there are no signs of transient, infrequent or dispersing Night Parrot individuals. The closest record of the species is 50 km northeast.	No

* source references provided in Table 4-1.

2 Project disturbance and description

Section 2.1 summarises the proposed disturbance for the Activity, while Section 2.2 below describes the Activity in detail. Figure 1-2 illustrates the location of the proposed works comprising the Activity under assessment in this Validation Notice.

2.1 Proposed disturbance

The proposed Activity may result in the disturbance of up to 95 ha of native vegetation and fauna habitat within the 125 ha Activity Area as defined in Figure 1-2. Clearing for this activity has been minimised by utilising existing disturbed areas, existing infrastructure and planning new proposed infrastructure on already cleared areas, where possible. The disturbance allocated to the SAA upper disturbance limit to date, and including the consequence of this Validation Notice, is detailed in Table 2-1.

Table 2-1: SAA Program Disturbance Allocation

Project Name	Decision Made	Date Decision Documented	Proposed Disturbance (ha)	Overall Cumulative Program Disturbance Remaining (ha)
MAC/South Flank	Validation Notice	May-18	16,000	94,000
Jimblebar OSA1 Stage 1	Not a Notifiable Action	Aug-18	95	93,905
Western Creek Diversion	Not a Notifiable Action	Feb-20	15	93,890
MAC Surplus Water	Not a Notifiable Action	Apr-20	0	93,890
Jimblebar Optimisation Project	Validation Notice	Jun-20	2,000 ha removed from SAA (included in revised version below)	91,890
OB31 Stage 1 clearing	Not a notifiable action	Dec-22	5	91,885
Mooka Rail Siding	Validation Notice	Apr-23	23	91,862
Revised Jimblebar Optimisation Project	Validation Notice	May-23	1,042 ha (in addition to 2,000 ha as provided under previous Validation Notice)	90,820
Western Ridge	Validation Notice	Jul-23	4,266	86,554
Yeerabiddy Rail Works	Validation Notice	Aug-23	60	86,494

Project Name	Decision Made	Date Decision Documented	Proposed Disturbance (ha)	Overall Cumulative Program Disturbance Remaining (ha)
Thirteen Creek Drilling Program	Not a Notifiable Action	Aug-23	11	86,483
Rail decarbonisation electrification Project	Not a Notifiable Action	Aug-23	0.02	86,483.00
Orebody 32 Below Water Table	Not a Notifiable Action	Sep-23	224	86,259
Newman West (Mount Whaleback Mine)	Not a Notifiable Action	Nov-23	155	86,104
Newman Water Treatment Plant Tank Replacement and Upgrades (Rev 1)	Not a Notifiable Action	Nov-23	7	86,097
Jimblebar Met Mast Decision Report	Not a Notifiable Action	Nov-23	2	86,095
Jimblebar Validation Notice	Validation Notice	Feb-24	2067	84,028
East Pilbara Surplus Water Drilling	Validation Notice	Apr-24	45	83,983
Jugari (Yandicoogina) Gorge Supplementation Trial Project	Not a Notifiable Action	May-24	1	83,982
Whaleback Hub Landfarm	Not a Notifiable Action	Apr-25	12	83,970
Newman Water Treatment Plant Tank Replacement and Upgrades (Rev 2)	Not a Notifiable Action	May-25	1	83,969
Homestead Bore 46	Not a Notifiable Action	Jun-25	38	83,931
Yandicoogina Gorge Mitigation Trial Additional Bore Installation	Not a Notifiable Action	1/06/2025	5.4	83,925
Orebody 29/30/25	Validation notice	1/05/2025	116	83,809

Project Name	Decision Made	Date Decision Documented	Proposed Disturbance (ha)	Overall Cumulative Program Disturbance Remaining (ha)
Yarnima IPG1 Project	Not a Notifiable Action	10/09/2025	3	83,806
Orebody 25 West	Validation Notice	30/3/2026	175	83,631
Newman Source Water Upgrade	Not a Notifiable Action	11/12/2025	29	83,602
Orebody 32 BWT Creek Discharge	Not a Notifiable Action	TBC	40	83,562
Ministers North Enabling Communication Works	Not a Notifiable Action	20/3/2026	1.1	83,560.90
Ministers North 132kV Relocation	Not a Notifiable Action	20/3/2026	64.5	83,496.4
Mesa Gap	Not a Notifiable Action	2/4/2026	59	83,437.40
OB32 Go Line	Not a Notifiable Action	TBC	9.8	83,427.60
Ministers North Project	Validation Notice	TBC	1,848	81,579.60
Marillana Creek (Yandi)	Validation Notice	TBC	95	81,484.60

2.2 Activity description

As the existing Yandi mine site heads towards closure, BHP have identified the need to maintain production of iron ore until additional new proposals are defined and assessed. The Activity is a sustaining tonnes project, vital to ensure continuity of iron ore supply.

The Activity includes the following key activities and elements:

- clearing of up to 95 ha of native vegetation within a 125 ha Activity Area
- mining of approximately 25 Mt of iron ore over approximately 5 years
- open cut mining of overburden and ore from the Channel Iron Deposit (CID)
- development of the E8 West and East pits
- placement of overburden in existing mine voids
- dewatering of up to approximately 4.6 GL/a to access below water table (BWT) ore
- installation of water management infrastructure, including production bores and pipelines

- construction and use of haul roads and access roads, including two Marillana Creek crossings
- construction of flood mitigation bunds and abandonment bunds
- discharge of up to approximately 10 GL/a[1] to Marillana Creek
- Decommissioning, rehabilitation and closure activities (Section 2.4).

The Activity will utilise existing infrastructure within the Yandi mine to haul, process and store iron ore mined from the E8 pits prior to transport via rail to Port Hedland for export overseas. Overburden and ore will be stored in the existing overburden and ore stockpile storage areas, located within the existing operational mine footprint, with no additional disturbance required. Additional production bores and associated pipelines will be constructed to allow below water table mining, and conveyance of surplus water to the existing discharge point at Marillana Creek.

Mining will be undertaken as a conventional open pit operation, comprising development of the E8 West and East pits. Initial mining at the E8 pits will not require dewatering due to the influence of existing Yandi and third-party operations, which have already lowered groundwater levels. Additional dewatering will, however, be required to access ore below the existing water table at the E8 East pit. The additional Activity dewatering will not increase the total volume of groundwater abstraction as authorised by the existing State-government *Rights in Water and Irrigation* Act *1914* (RiWI Act) Groundwater Licence (GWL89501) for the Yandi mine (Section 2.3).

The estimated pit base is approximately 480 mAHD, representing around 60 m below the natural surface (approximately 530–542 mAHD). Groundwater levels in the area are currently reduced by approximately 25 m from pre-development conditions, to around 488 mAHD. Dewatering associated with the Activity is proposed to further lower groundwater levels to approximately 12 m below the pit base (approximately 468 mAHD). This represents an additional drawdown of approximately 20 m relative to current groundwater levels.

Predicted groundwater drawdown contributions from E8 are illustrated in Figure 2-1. The figure shows that an additional 20 m of groundwater drawdown is predicted within the Channel Iron Deposit (CID) and 10m in the undifferenced basement hydrogeological units[2] surrounding E8. The figure also shows the maximum extent of the modelled 1 m drawdown contour for each hydrogeological unit at the end of the dewatering.

In summary:

- Channel Iron Deposit (CID) – within the CID, ground drawdown migrates approximately the same distance east and west along the CID from E8 (up to 2.5 km in both directions). To the west however, the magnitude is greater. The predicted drawdown extends approximately 200 m to 250 m in a northerly direction towards Marillana Creek.
- Undifferentiated Basement – within the basement, drawdown of up to 1 m is predicted to extend between 2.5 km (north-south) and 4.5 km (east-west) from E8.
- The predicted drawdown of the Activity does not intersect with sensitive environmental receptors in the region including Flat Rocks, Marillana Creek pools or Yandicoogina Gorge.

Surplus mine dewatering from the Activity will be discharged into Marillana Creek at the existing discharge point (outlet) with a maximum proposed discharge rate of 26 ML/day. This is the combined discharged rate for the existing Yandi operations and proposed Activity. The discharge of surplus water to Marillana Creek is regulated by surplus discharge conditions detailed in the existing State-government *Environmental Protection Act 1986* (EP Act) Part V Licence (L6168/1991/10) which authorises discharge of up to 15,000,000 tonnes (41.1 ML/day) of mine dewater per year (Section 2.3).

[1] 10 GL/a is the estimated combined surplus water discharge for existing Yandi mine pits and proposed E8 pits

[2] Refer to Appendix 5 for additional information on the E8 Groundwater Model.

Discharge has been ongoing at the current surface water discharge outlet for approximately 15 years. This has created a 'permanent' pool and artificial wetland. The associated wetting front extends downstream from the discharge point within Marillana Creek. The wetting front was analysed in 2013 and defined by aerial imagery. It was estimated an average discharge rate of 22.5 ML/day produced an average wetting front length of approximately 6.5 km. Based on this analysis and historical observations, the wetting front is estimated to extend up to 9 km downstream at a maximum discharge rate of 26 ML/day.

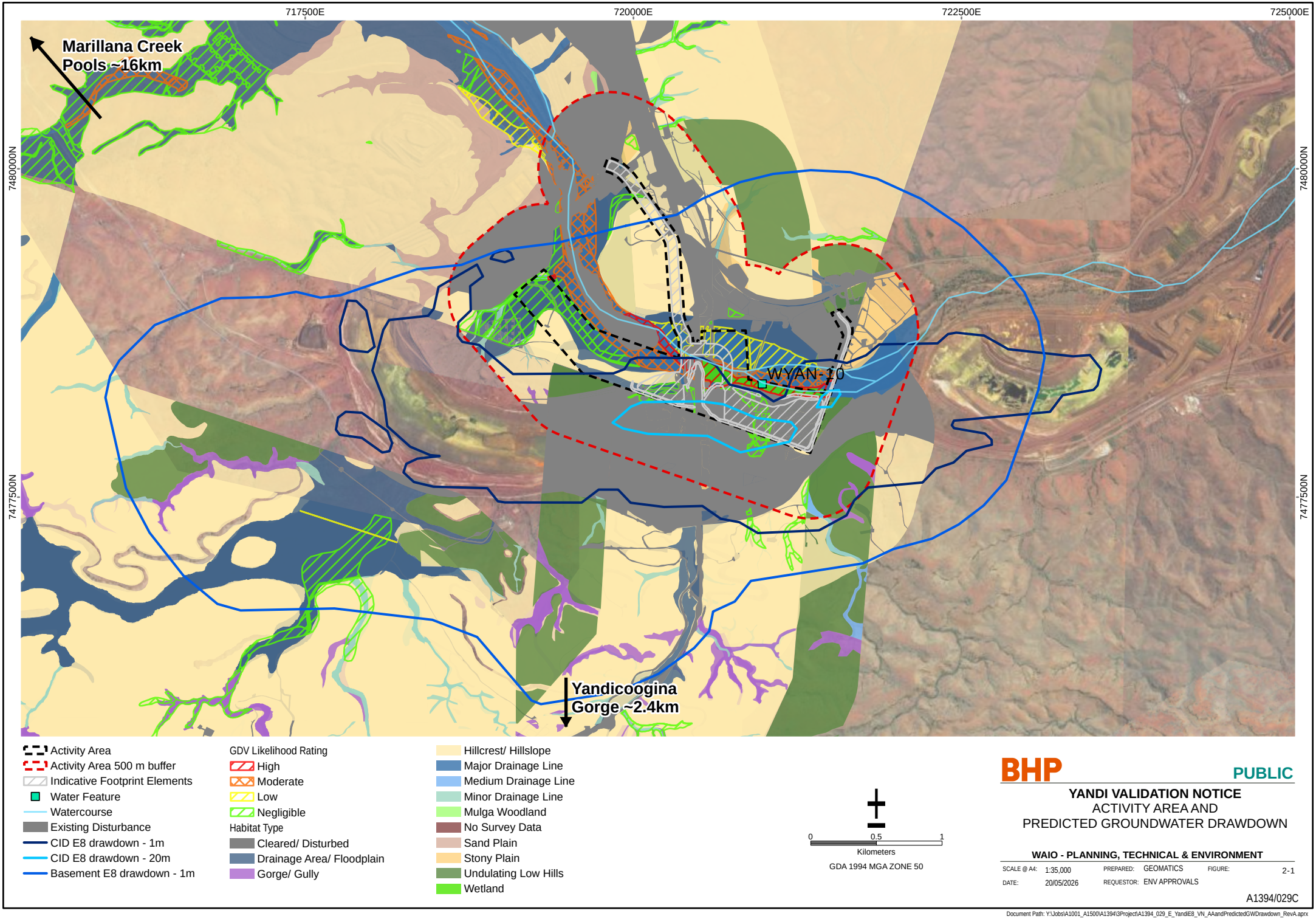
The excavation of pits and construction of infrastructure (e.g. roads) has the potential to change surface water regimes by disrupting natural surface flows and reducing the availability of surface water (runoff) downstream. Mining creates internally draining mine pits and can impact the quantity of rainfall runoff that reaches the waterways. The Activity Area lies immediately south of Marillana Creek. In this location the existing (pre-mining) topography slopes towards Marillana Creek and surface water flow is contributed predominantly through diffuse overland flow within this part of the Marillana Creek Catchment. There are no contributing flows into the proposed location of the eastern E8 pit from outside the Activity Area. This is due to a neighbouring third party mine immediately to the south having altered the catchment to not contribute any flow towards Marillana Creek at this location. Overall, the Activity is predicted to reduce the surface water contribution to the Marillana Creek Catchment by approximately 0.01%.

The creation of road infrastructure can result in changing waterway channel morphology and the clearing of riparian vegetation. Haul roads and light vehicle tracks across Marillana Creek will be designed to convey flows and not prevent or restrict the movement of water in the creek. Two creek crossings are proposed; the eastern creek crossing will be constructed level will the current flow channel with a number of gaps included to reduce any obstruction to flow. The western creek crossing has been designed with culverts to convey flows up to 20% annual exceedance probability flows, with bigger events designed to flow over the top of the road. Drainage culverts in both haul roads will maintain fauna access along the creek.

A flood bund is used to create a barrier to protect infrastructure from damage and ingress of flood waters. The Activity includes the construction of flood bunds on the downstream side of the proposed E8 pits adjacent to Marillana Creek. The Activity includes the use of flood bunds to prevent the ingress of infrequently occurring flood events into pits during mining operations. The bunding proposed is designed to keep floodwater within the natural channel of Marillana Creek and simulate the natural catchment flow and prevent creek capture into the E8 pits. There is no diversion of the creek required for the Activity.

Geochemical assessments have concluded the risk of Acid Mine Drainage and metalliferous drainage and subsequent increase in metal concentrations in surplus water discharged to Marillana Creek is low. This assessment is supported by water quality monitoring results at the Yandi discharge point throughout the life of the mine, which show that metals generally remain within defined tolerance levels. Based on this, it is considered a low risk that metalliferous drainage would be triggered by additional mining activities occurring within the same geological unit. Water quality sampling for the Activity will continue in accordance with the monitoring requirements detailed in the existing EP Act Part V Licence and the RiWI Act Groundwater Licence.

Decommissioning, rehabilitation and closure will be managed in accordance with the Mine Closure Plan (MCP; BHP 2025a) as described in Section 2.4.



BHP

PUBLIC

YANDI VALIDATION NOTICE
ACTIVITY AREA AND PREDICTED GROUNDWATER DRAWDOWN

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4:	1:35,000	PREPARED:	GEOMATICS	FIGURE:	2-1
DATE:	20/05/2026	REQUESTOR:	ENV APPROVALS		

A1394/029C

Document Path: Y:\Jobs\A1001_A1500\A1394\3Project\A1394_029_E_YandiE8_VN_AAandPredictedGWDrawdown_RevA.aprx

2.3 Existing approvals

BHP's Marillana Creek (Yandi) iron ore mine was approved by the Western Australian Minister for Environment on 25 May 1988 under Ministerial Statement 29, issued in accordance with Part IV of the *Environmental Protection Act 1986* (WA) and has been in operation since 1991.

At a State level, the Yandi mine is currently approved by Ministerial Statement 679 (MS679), which was approved on 6 July 2005 as amended by MS1039 (4 October 2016), pursuant to the Environmental Protect Act (EP Act). The Development Envelope for MS679 encompasses the whole of the Activity Area and extends across BHP's Yandi mine. The activities approved by MS679 include the mining of the entire Yandi orebody within Mining Lease 270SA, including central mesa pits (C1 to C5), eastern mesa pits (E1 to E8) and the western mesa pits (W1 to W6) and associated infrastructure. MS679 approves the clearing of 4,558 ha of native vegetation within the total approved Development Envelope of 13,158 ha, including:

- Clearing of no more than 393 ha for Marillana Creek Diversion
- Clearing of no more than 18 ha for Marillana Creek Crossings.

Approximately 66 ha of clearing remains under the current Ministerial Statement 679.

The residual impact caused by the clearing of native vegetation from the implementation of the Yandi mine is currently required to be offset under Ministerial Statement 1039, with funds provided to the Pilbara Environmental Offset Fund.

Vegetation clearing for the Activity at a State level will be authorised by Part IV of the EP Act as part of the approval of the Significant Amendment referred to the Environmental Protection Authority (WA) in May 2025.

There is one EP Act Part V Native Vegetation Clearing Permit (NVCP) currently in place over the southern portion of the Activity Area, NVCP 7009/3, for the Newman Mainline Rail, which was approved 13 August 2016 (as shown in Figure 1-2). The purpose of the permit is for the clearing of native vegetation for railway construction and maintenance. This NVCP is not required for the Activity.

Ore processing and discharge of surplus mine dewatering will be authorised by EP Act Part V License to Operate (L6168/1991/10) for the existing operations, which includes approval to discharge up to 15,000,000 tpa of mine dewater (41.1 mega litres per day (ML/day)) to Marillana Creek.

Groundwater abstraction will be authorised by 5C Groundwater Licence GWL89501(11) (June 2018-June 2028) issued under the *Rights in Water and Irrigation Act 1914* (WA) (RiWI Act) for the existing operations. This authorises an Annual Water Entitlement of 20.65 giga litres per annum.

At a Commonwealth level, the Activity is within the scope of BHP's Pilbara Strategic Assessment (2017) approved under the EPBC Act, as the Activity is directly associated with the expansion of existing iron ore mines and associated infrastructure and their use within the Strategic Assessment Area (SA).

2.4 Closure and Decommissioning

BHP has advanced detailed internal closure studies for Yandi mine since 2019 and continues working towards an optimised and final closure strategy to meet regulatory obligations and an agreed stakeholder solution.

To guide the development and implementation of mine closure and rehabilitation for the Pilbara operations, BHP has developed a set of guiding closure principles. The principles address post-closure land use, land management, safety, landform, mine planning, ecosystem sustainability, water, decommissioning, contaminated sites, human resources and community assets. The closure objectives and guiding principles have been supplemented by the Yandi-specific closure objective derived from MS679 as amended by MS1039: *Ensure that the mine is decommissioned and rehabilitated in an ecologically sustainable manner.*

The Marillana Creek (Yandi) Mine Closure Plan (MCP) (BHP 2025a) has been updated to include the Activity and submitted as part of the referral to the EPA and will be implemented following the granting of a new Ministerial Statement issued under Part IV of the EP Act. The MCP outlines proposed decommissioning, rehabilitation and closure strategy for the Activity. Recognising the importance of mine planning in facilitating the completion criteria for rehabilitation has been critical in planning and implementing successful rehabilitation practices. Embedding closure and rehabilitation planning in the Life of Asset and Five-Year Planning process for the business has resulted in rehabilitation being included as part of the mining process rather than being considered an add on or separate from mining. This allows identification of areas available for rehabilitation so that plans for executing final landform earthworks and rehabilitation within the subsequent five-year timeframe are integrated with mine plans. To allow appropriate landform design, planners now use waste characterisation information and with site input, model design options to identify the most appropriate rehabilitation plan for any given situation.

As detailed in the MCP (BHP 2025a), all infrastructure that forms part of the Activity will be decommissioned and removed at closure and the E8 pits will be backfilled to the Marillana Creek invert level to prevent creek capture. This is above the recovered groundwater level and consequently, the pit is not expected to have seasonal expressions of water post-closure. This is expected to result in a minimal net impact to groundwater levels in this location (i.e. post-closure groundwater levels would be influenced by the existing operations and third-party operations).

Groundwater levels will recover post-backfill (albeit to a lower level than pre-mining groundwater levels). The closure design for the E8 pits represents a potential opportunity to support riparian vegetation in this area. Marillana Creek riparian vegetation will be maintained commensurate with the final hydrological regime at closure.

3 Stakeholder engagement

BHP's commitment to community engagement is articulated in BHP's *Communications, Community and External Engagement Our Requirements* (BHP 2019), which states:

> '*Working openly with the communities in which we operate and with governments contributes to economic and social development and enhancement of BHP's reputation and social licence to operate...*'

To support this commitment, BHP has comprehensive company standards and dedicated resources to ensure its activities are underpinned by continuous community engagement and feedback.

3.1 Stakeholder consultation

BHP is required to maintain a register of interested parties for the purpose of stakeholder consultation. Interested parties listed on this register have been identified through the formal Strategic Assessment public consultation period or have self-identified after the consultation period. Members of the community and groups are able to self-identify through local stakeholder engagement activities such as Community Consultative Groups in Port Hedland and Newman, and regular meetings with Traditional Owner groups, or through www.bhp.com/contact. The BHP community team will advise on any enquiries or requests to be included in stakeholder engagement activities relating to the Strategic Assessment.

Key regulatory authorities, and target stakeholders were consulted during the development of the proposed Activity and discussions were held on the potential direct and indirect impacts. Consultation outlined the SAA, proposed submission, including a description of proposed activities of the Notifiable Action, the potential impacts on the Program Matters and the proposed management approach. The stakeholders consulted and level of stakeholder engagement undertaken depended on the location, complexity, size and risk of the particular activity, and the level of stakeholder interest.

Table 3-1 summarises the relevant consultation undertaken by BHP regarding the aspects of this Validation Notice.

3.2 Public consultation

BHP has made the draft Validation Notice publicly available for comment for a minimum period of 28 days. The public consultation period commenced 17 March 2026. Registered stakeholders, including the Department of Climate Change, Energy, the Environment and Water, the Department of Water and Environmental Regulation and the Banjima Native Title Aboriginal Corporation, were notified via email that the consultation period had commenced.

Table 3-1: Stakeholder Engagement to date

Stakeholder	Date	Topics/issues raised	BHP response / outcome
DCCEEW, DWER and BNTAC	17 March 2026	BHP published the draft Validation Notice for 28 day public comment period.	Comments received from DCCEEW, BHP comment responses provided as Appendix 5 and final VN updated.
DCCEEW	10 March 2026, Perth-Melbourne	Pre-submission meeting for the Marillana Creek (Yandi) Validation Notice to discuss the Activity's direct and indirect impacts on relevant Program Matters.	BHP notified DCCEEW that the intention was to provide the draft Validation Notice for 28 public review on 13 March 2026.
DWER-EPA Services	9 April 2025, Perth	EP Act Part IV pre-referral meeting to further discuss the Activity, discuss key factors in more detail, predicted impacts and proposed management measures.	BHP notified DWER that the intention was to refer the proposal in May 2025.
Banjima representatives, BNTAC	21 March 2025, Perth	BHP sought endorsement for the E8 (the Activity) Social and Cultural Heritage Environmental Management Plan (SCHEMP) from the Banjima Heritage Advisory Council (Banjima HAC).	The Banjima HAC provided conditional support and the BNTAC Board of Directors formally endorsed the resolution on 8 April 2025.
Banjima representatives, BNTAC	6 September 2024, Perth	BHP sought endorsement from the Banjima Heritage Advisory Council (Banjima HAC) of the E8 SCHEMP.	BHP agreed to defer the request to endorse the SCHEMP until other matters were adequately resolved
DWER-EPA Services, Northwest Region	4 September 2024, Perth	EP Act Part IV pre-referral meeting to further discuss the Activity, discuss key factors in more detail, predicted impacts and proposed management measures, with a particular focus on Inland Waters.	BHP notified DWER that the intention was to refer the proposal in late 2024/early 2025.
BNTAC	30 August 2024, Perth	BHP and BNTAC undertook a workshop to review the technical details of environmental impact assessment presented in the EP Act Part IV draft Environmental Review Document (ERD), and the management measures provided in the management plans and Mine Closure Plan.	Review of draft ERD and associated management plans. BNTAC raised a number of technical queries regarding the impact assessment and management actions detailed in the ERD and management plans. BHP have responded to the questions raised and updated the ERD and supporting management plans to provide additional information and clarity.
Banjima representatives, BNTAC	6 and 7 June 2024, Perth	BHP provided an overview of the Activity and tabled the SCHEMP for endorsement.	Banjima advised they were not in a position to endorse the SCHEMP. BHP agreed to provide the ERD for Banjima review.

Stakeholder	Date	Topics/issues raised	BHP response / outcome
Banjima representatives, BNTAC	18 April 2024, Perth	Closed session with Banjima and BNTAC.	Nil
DWER-EPA Services	20 March 2024, Perth	EP Act Part IV pre-referral meeting to introduce the Activity, discuss key factors, predicted impacts and proposed management measures.	BHP notified DWER that the intention was to refer the Proposal under Part IV of the *Environmental Protection Act 1986* in April 2024.
DWER	10 January 2024, Perth	Meeting to discuss implementation of the existing Yandi mine and mitigation strategies for identified project related impacts. BHP provided an overview of the Activity.	BHP to provide a technical memo detailing proposed mitigation measures for identified impacts from the existing operations
Banjima representatives, BNTAC	6-7 December 2023, Perth	BHP provided an overview of the engagement between Banjima and BHP to date for the Activity, including issues raised by Banjima and recommendations/ commitments made by BHP. These included: • Amendment to the Activity Area of the Activity on the western side to provide options to haul road. • BHP to identify and implement mitigation option/s to address identified impacts from the existing operations • BHP to engage with Banjima on management plans applicable to the Activity. • BHP to provide an opportunity for Banjima to be involved in and undertake environmental monitoring, surveys and rehabilitation activities for the Activity • BHP to share key environmental data metrics which can be monitored through time by Banjima people. BHP sought endorsement of the SCHEMP.	Banjima acknowledged the 'good work' that BHP had undertaken in regard to social surroundings engagement and mitigation planning progress to address impacts from the existing mining operations. Regardless, Banjima were not in a position to support or endorse the SCHEMP.
Banjima representatives, BNTAC	2 November 2023, Perth	BHP provided an overview of the Activity (reduced scope now excluding C3 and Iowa Creek diversion) and summary of recommendations from previous engagement.	No further recommendations were provided during this one-day engagement. BHP to continue working with Banjima on ongoing commitments/ recommendations.
Banjima representatives, BNTAC	26 – 27 September 2023, Perth	Banjima HAC meeting in Perth, BHP provided a project overview of the Activity including identification of existing values, potential impacts and proposed environmental management to the committee members. Outcomes of Water and Closure Workshop were shared.	Further information on the Activity provided to Banjima and Nov 23 consultation arranged. Requested further engagement on the project does not need to be in the field.

Stakeholder	Date	Topics/issues raised	BHP response / outcome
BHP/ RTIO/ BNTAC	25 August 2023, Perth	BHP, Rio Tinto (RTIO) and BNTAC continued with workshop, developing a mitigation strategy for closure outcomes and impacts to water values. RTIO joined workshop, in recognition and acknowledgement that impacts to these water values are shared and cumulative in nature. BHP presented proposed mitigation plans for historic impacts. BHP presented the closure strategy for the Activity, including backfill of mine pit to above returning groundwater level around invert level of the creek.	BHP/ RTIO agreed on pathway forward to develop collaborative solutions to shared challenges. • Mitigation strategy for impacts from existing project • Yandi (BHP)/ Yandicoogina (RTIO) Closure (long term) • Proposed Activity closure solution (near term) BNTAC supported the solution presented for impacts related to current operations.

Banjima representatives, BNTAC	13-15th June 2023, Yandi Mine	During the consultation, Banjima representatives raised several concerns relating to likely and possible impacts on the physical and biological surroundings and the related potential harm to Social Surroundings.
		During and following consultation Banjima provided feedback and requested further information regarding:
		• Mining Design
		  ○ Depth of E8 deposit
		  ○ Final design of C3 land bridge
		  ○ Water Management
		  ○ Importance of water to Banjima People
		  ○ Distance of the Activity to Marillana Creek
		  ○ Mitigation actions for current operational impacts
		  ○ Mining below water table
		  ○ E7 discharge point
		• Biodiversity / Land
		  ○ Importance of biodiversity values in C3 areas
		  ○ Spatial data capture for additional hectares
		  ○ Cumulative impacts to Pebble Mound Mouse population
		• Closure
		  ○ Encouraged by Yandi rehabilitation nursery
		  ○ Strong preference for not having pit lakes.
			BHP committed to providing the information requested by Banjima People.
			BHP committed to working with Banjima to provide further information and investigate and mitigate identified impacts from existing operations
			BHP committed to co-developing the SCHEMP with Banjima People.

Stakeholder	Date	Topics/issues raised	BHP response / outcome
Banjima representatives, BNTAC	22 March 2023, Perth	Banjima HAC meeting in Perth, BHP provided a project overview of the proposed Activity including identification of existing environmental values, potential impacts and proposed environmental management to the committee members.	Banjima representatives requested a site visit with Senior Elders, BHP General Managers and relevant Subject Matter Experts to discuss management of impacts to water on country. BHP committed to an on-country consultation as requested.

4 Validation process

4.1 Guidance

The most recent Commonwealth guidance considered in the preparation of this Validation Notice include:

- *Recovery Plan for the Greater Bilby (Macrotis lagotis)* (DCCEEW 2023)
- *EPBC Act referral guideline for the endangered northern quoll* (DotE 2016)
- *Threat Abatement Plan for competition and land degradation by rabbits* (Department of the Environment and Energy [DoEE] 2016)
- Threat abatement plan for predation by feral cats (DCCEEW 2024)
- *Matters of National Environmental Significance Significant Impact Guidelines 1.1 EPBC Act* (DotE 2013)
- *Survey guidelines for Australia's threatened bats* (Department of the Environment, Water, Heritage and the Arts [DEWHA] 2010)
- *Threat abatement plan for predation by the European red fox* (DEWHA 2008a)
- *Approved Conservation Advice for Liasis olivaceus barroni (Olive Python - Pilbara subspecies)* (DEWHA 2008b)
- *Survey guidelines for Australia's threatened mammals* (Department of Sustainability, Environment, Water, Population and Communities [DSEWPaC] 2011a)
- *Survey guidelines for Australia's threatened reptiles* (DSEWPaC 2011b)
- *Threat abatement plan for the biological effects, including lethal toxic ingestion, caused by cane toads* (DSEWPaC 2011c)
- *Conservation Advice Falco hypoleucos Grey Falcon* (Threatened Species Scientific Committee [TSSC] 2020)
- *Conservation Advice Macroderma gigas ghost bat* (TSSC 2016a)
- *Conservation Advice Macrotis lagotis greater bilby* (TSSC 2016b)
- *Conservation Advice Rhinonicteris aurantia (Pilbara form) (Pilbara Leaf-nosed Bat)* (TSSC 2016c)
- *Conservation Advice Pezoporus occidentalis night parrot* (TSSC 2016d)
- *Commonwealth Listing Advice on Northern Quoll (Dasyurus hallucatus)* (TSSC 2005e).

The most recent Western Australian guidance considered includes:

- *Technical Guidance: Terrestrial vertebrate fauna surveys for environmental impact assessment* (Environmental Protection Authority [EPA] 2020).

Other guidance considered includes:

- *A review of ghost bat ecology, threats and survey requirements* (Bat Call WA 2021a)
- *A review of Pilbara leaf-nosed bat ecology, threats and survey requirements* (Bat Call WA 2021b)
- *Verifying bilby presence and the systematic sampling of wild populations using sign-based protocols – with notes on aerial and ground-based techniques and asserting absence*. (Southgate *et al.* 2018)

- *Guidelines for surveys to detect the presence of bilbies and assess the importance of habitat in Western Australia* (Department of Biodiversity, Conservation and Attractions [DBCA] 2017)
- *Guidelines for determining the likely presence and habitat usage of Night Parrot (Pezoporus occidentalis) in Western Australia* (DBCA 2024).

4.1.1 Important population

For this Validation Notice, and following EPBC Act guidance (DotE 2013), an important population for all Program Matters, with exception of Northern Quoll, is defined as:

'a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are:

- *key source populations either for breeding or dispersal*
- *populations that are necessary for maintaining genetic diversity and/or*
- *populations that are near the limit of the species range.'*

An important population for the long-term survival of the Northern Quoll is specifically defined by DotE (2016) as including:

- *'high density quoll populations, which occur in refuge-rich habitat critical to the survival of the species, including where cane toads are present*
- *occurring in habitat that is free of cane toads and unlikely to support cane toads upon arrival i.e. granite habitats in WA, populations surrounded by desert and without permanent water*
- *subject to ongoing conservation or research actions i.e. populations being monitored by government agencies or universities or subject to reintroductions or translocation.'*

4.1.2 Critical habitat

Critical habitat is defined by DotE (2013) as '*Habitat critical to the survival of a species or ecological community*' and refers to areas that are necessary:

- *for activities such as foraging, breeding, roosting, or dispersal*
- *for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators)*
- *to maintain genetic diversity and long term evolutionary development*
- *for the reintroduction of populations or recovery of the species or ecological community.*

Critical and supporting habitats for the seven Program Matters are defined in Table 12.1 of the APOP (BHP 2023) and are based on relevant published conservation guidance. Note that critical and supporting habitats may also be further refined during field surveys.

4.2 Surveys and studies

At least 16 contemporary and historical fauna surveys that wholly or partially intersect the Activity Area and/or the 500 m buffer have been completed between 1994 and 2026 (Table 4-1; Appendix 2).

Two small sections of the 500 m buffer could not be surveyed in January 2026 due to either access or time restraints (Biota 2026). However, fauna habitats were still mapped based on satellite imagery and observations made on site (Biota 2026; Figure 5-1).

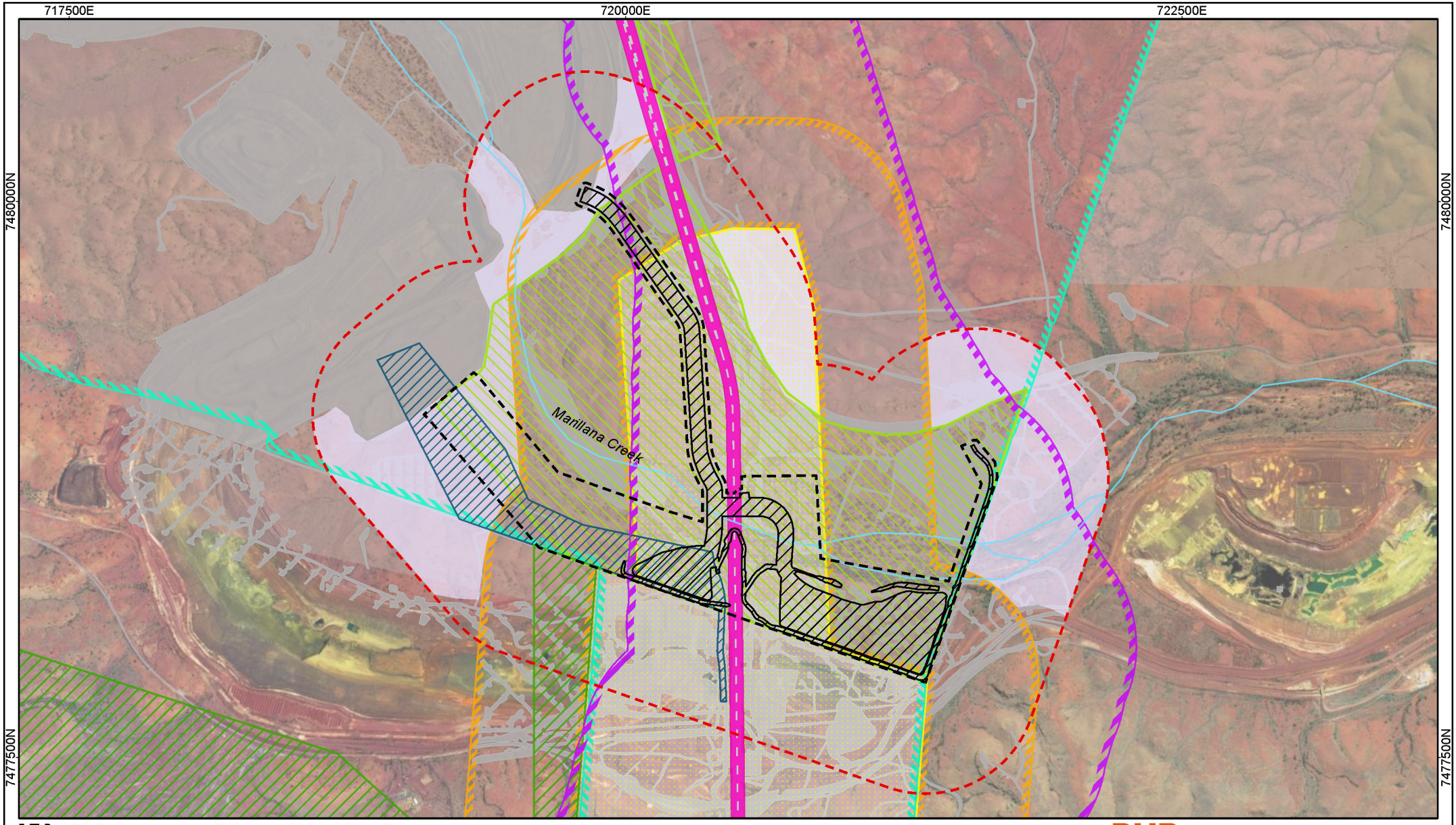
Surveys were undertaken in a manner consistent with the requirements of the Commonwealth and Western Australia guidance for surveys listed in Section 4.1 and fulfil the requirement of Section 7.1 of the Program for contemporary targeted on-ground surveys. Surveys undertaken within the last five years encompassing parts of or all of the Activity Area are presented in Table 4-1, with survey boundaries illustrated on Figure 4-1. Historical surveys are summarised in Appendix 2. Survey reports are provided in Appendix 3.

The contemporary and historical surveys which form the baseline data for the Activity Area and 500 m buffer are considered adequate for validating impacts to Program Matters in line with the requirements of Section 7.1 (Contemporary Information and Data) of the Program.

Table 4-1: Recent terrestrial fauna studies and surveys

Title	Survey Date	Survey type and sampling methods	Summary of significant fauna recorded
Yandi E8 Additional Targeted Fauna Survey (Biota 2026)	9-16 January 2026	A targeted significant vertebrate fauna survey, focussing on Matters of National Environmental Significance (MNES), including the Program Matters, within the 500m buffer of the Activity Area. The survey covered 14 ha of the Activity Area and 157 ha of the 500m buffer.	No threatened fauna listed under the EPBC Act were recorded during this survey.
Marillana Power 2030 Detailed Fauna Survey (Spectrum Ecology 2026)	6-28 October 2024	A single-phase detailed terrestrial vertebrate fauna survey. Survey included habitat assessments, systematic trapping, avifauna census, motion camera trapping, bat surveys, acoustic call recorders, hand foraging and transects. The survey covered a total area of 89 ha of the Activity Area and 493 ha of the 500 m buffer.	No threatened fauna listed under the EPBC Act were recorded during this survey.
MAC to Yandi Corridor & Runaway Valley North Targeted Vertebrate MNES Fauna Survey (Biologic 2025)	21 – 30 May 2025	A single season targeted vertebrate MNES fauna survey, including the Program Matters, of the Mining Area C to Yandi Corridor and Runaway Valley North area (approximately 5,277 hectares). Species-specific targeted sampling during the field survey comprised habitat and habitat feature assessments, ultrasonic and acoustic sound recordings, camera trap transects, targeted searches, and nocturnal searches. The survey covered a total area of 48 ha of the Activity Area and 247 ha of the 500 m buffer.	The Ghost Bat was recorded during this survey but not within the Activity Area or 500 m buffer.
Ministers North Consolidated Targeted Significant Vertebrate Fauna Surveys (Astron 2024)	13-22 April 2023 7-18 June 2024	A targeted MNES survey, including the Program Matters, within the Ministers North tenement, The study included a desktop assessment, targeted vertebrate fauna surveys and mapping of fauna habitats. The survey covered 0.1 ha of the Activity Area and 14 ha of the 500 m buffer.	The Ghost Bat, Northern Quoll and Pilbara Olive Python were recorded during this survey but not within the Activity Area or 500 m buffer.
Yandi 45C Targeted Significant Vertebrate Fauna Survey (Astron 2023)	23 September – 2 October 2022	This study involved a targeted significant vertebrate fauna survey, focussing on MNES, including the Program Matters, within the Yandi Development Envelope. The study included a desktop assessment, targeted vertebrate fauna survey and mapping of fauna habitats. The survey covered 117 ha of the Activity Area and 294 ha of the 500m buffer.	The Common Sandpiper (*Actitis hypoleucos*) was recorded during this survey, but not within the Activity Area or 500 m buffer.
Central Pilbara Hub Targeted Matters of National Environmental Significance	11-15 November 2021 23-28 November 2021 4-13 April 2022	A desktop assessment and single season targeted MNES vertebrate fauna survey, including the Program Matters, of the Central Pilbara Hub. The overarching objective of this assessment was to determine	The Ghost Bat and Pilbara Leaf-nosed Bat were recorded during the survey, but not within the Activity Area or 500 m buffer.

Title	Survey Date	Survey type and sampling methods	Summary of significant fauna recorded
Vertebrate Fauna Survey (Biologic 2023a)	27 April - 6 May 2022 25 - 30 May 2022	the presence, or likely presence, of significant species within the Study Area, with a specific focus on MNES. The survey covered a total area of 59 ha of the Activity Area and 222 ha of the 500 m buffer.	
Targeted Vertebrate Fauna Survey: Pilbara Olive Python South Flank and Mining Area C (Biologic 2023b)	7–14 March 2023	A single season targeted Pilbara Olive Python survey within and surrounding the Mining Area C and South Flank operations. Sampling methods included diurnal and nocturnal targeted searches and environmental DNA (eDNA) sampling via water sampling at ten water features. The survey covered a total area of 3.4 ha of the Activity Area and 18.6 ha of the 500m buffer.	The Pilbara Olive Python was recorded during this survey, but not within the Activity Area or 500 m buffer.
Consolidated Fauna Habitat Mapping (Biologic 2014 and 2018)	2014 and updated in 2018	This study combined all available and relevant fauna habitat mapping into one consolidated regional dataset that provides consistency in naming across BHP tenure. Analysis of aerial photography, previous fauna habitat mapping, vegetation mapping available at the time (Onshore 2014a) and information gathered during site visits, was conducted to create the consolidated fauna habitat dataset. The dataset was updated in 2017 where errors were corrected, and additional areas of mapping incorporated. The survey covers the entire Activity Area and 564 ha of the 500 m buffer.	N/A



Activity Area
Activity Area 500 m buffer
Indicative Footprint Elements
Cleared Areas

AreaName

BHP rail
Watercourse

Contemporary Vertebrate Fauna Survey

Consolidated Fauna Habitat Mapping 2017 (Biologic 2018)
Ministers North Level 1 Fauna Survey (GHD 2021)
Central Pilbara Hub Targeted Matters of National Environmental Significance Vertebrate Fauna Survey (Biologic 2023a)
Targeted Vertebrate Fauna Survey: Pilbara Olive Python South Flank and Mining Area C (Biologic 2023b)
Yandi 45C Targeted Significant Vertebrate Fauna Survey (Astron 2023)
Consolidated Ministers North Targeted Significant Vertebrate Fauna Surveys (Astron 2024)
MAC to Yandi Corridor & Runaway Valley North Targeted Vertebrate MNES Fauna Survey (Biologic 2025)
Marillana Power Detailed Fauna Survey (Spectrum 2026)
Yandi E8 Additional Targeted Fauna Survey (Biota 2026 - *in prep*)

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KILOMETRES

GDA 1994 MGA ZONE 50

BHP

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YANDI VALIDATION NOTICE
CONTEMPORARY VERTEBRATE FAUNA SURVEYS

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

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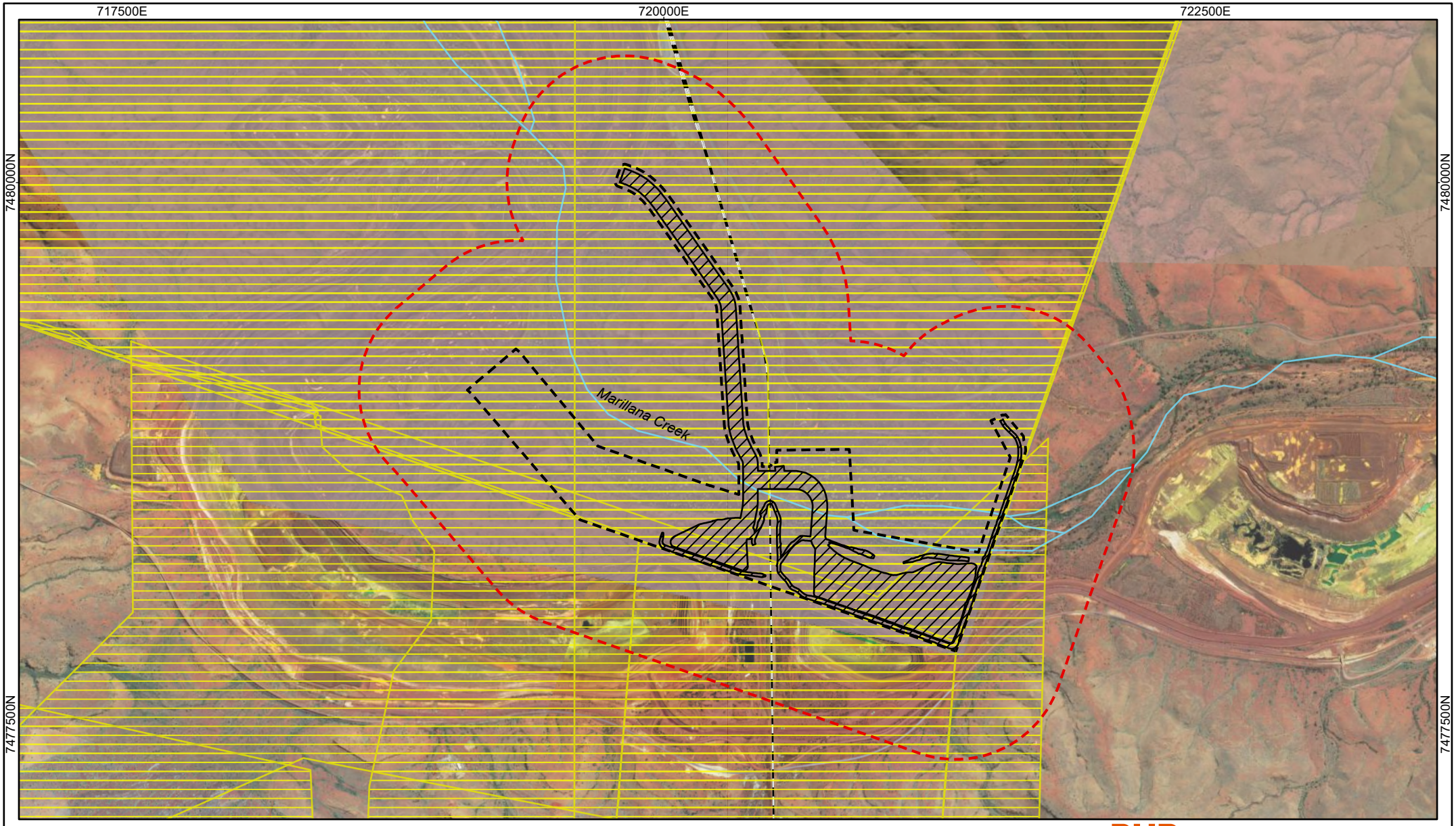

- Activity Area
- Activity Area 500 m buffer
- Indicative Footprint Elements
- Historical Vertebrate Fauna Surveys
- Watercourse
- BHP rail

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KILOMETRES

GDA 1994 MGA ZONE 50

BHP

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YANDI VALIDATION NOTICE
HISTORICAL VERTEBRATE FAUNA SURVEYS

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4:	1:23,611	PREPARED:	GEOMATICS	FIGURE:	4-2
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5 Existing environmental values

5.1 Fauna habitats

Detailed fauna habitat mapping of the Activity Area and 500m buffer has been completed as part of numerous surveys. A total of eight fauna habitat types have been mapped within the Activity Area including Artificial Wetland, Major Drainage Line, Medium Drainage Line, Drainage Area Floodplain, Undulating Low Hills, Stony Plain, Hillcrest/Hillslope, and Minor Drainage Line (Table 5-1 and Figure 5-1). All of these habitat types also occur within the 500 m buffer, along with two other habitat types: Gorge/Gully and Sand Plain (Table 5-1 and Figure 5-1).

Approximately 53 ha of the Activity Area has been mapped as Cleared/Disturbed or comprises of existing operational areas (Table 5-1; Figure 5-1). The remaining 72 ha of native vegetation within the Activity Area includes a number of habitat types that are considered to be of value for terrestrial fauna as they may provide suitable habitat for significant fauna species, specifically Ghost Bat, Pilbara Olive Python, Northern Quoll, Pilbara Leaf-nosed Bat, Greater Bilby, Night Parrot and Grey Falcon.

Table 5-1: Fauna habitats in the Activity Area

Habitat Type	Description	Value to Program Matters	Extent within Activity Area (estimated extent that maybe cleared*)	Extent within 500m buffer
Artificial Wetland	Wetland habitats differ from permanent/semi-permanent pools as they are generally a larger water body that supports their own distinct ecosystem and aquatic fauna assemblages (waterfowl, fish etc.). The dewatering discharge outlet: located on the eastern side of the Activity Area within Marillana Creek where excess water discharging into this section of the creek has created a permanent artificial pool (WYAN-10) running for over one kilometre downstream.	Provides critical foraging habitat for Pilbara Olive Python and for Ghost Bat (when within 12 km of critical roosting habitat). Provides supporting habitat for the Pilbara Leaf-nosed Bat and Northern Quoll.	7.1 ha	0.6 ha
Major Drainage Line	This fauna habitat type consists of large drainage channels over 10 m in width, typically lined with mature Eucalyptus/Corymbia and Melaleuca species. It exhibits a moderate diversity of microhabitats, with some tree hollows and woody debris (logs and leaf litter). Major Drainage Lines support ephemeral, semi-permanent and artificial water bodies in multiple locations within the Yandi Development Envelope. This fauna habitat is widespread throughout the Pilbara bioregion.	Provides critical breeding, foraging and dispersal habitat for the Grey Falcon, critical foraging and dispersal habitat for Pilbara Olive Python, and critical foraging habitat for Ghost Bat (when within 12 km of critical roosting habitat). Provides supporting habitat for Northern Quoll, Ghost Bat (if outside the 12 km radius) and Pilbara Leaf-nosed Bat. Provides marginal supporting habitat for the Greater Bilby.	17.6 ha	57.9 ha
Medium Drainage Line	Typically consists of small drainage channels with eucalypt woodlands growing in the riparian zone. A moderate diversity of	Provides critical foraging habitat for Ghost Bat where it occurs within 12 km of critical roosting habitat.	0.3 ha	1.2 ha

Habitat Type	Description	Value to Program Matters	Extent within Activity Area (estimated extent that maybe cleared*)	Extent within 500m buffer
	microhabitats occurs with some seasonal presence of pools, tree hollows and woody debris (logs and leaf litter). Buffel grass is often present in the ground story vegetation, reducing floral diversity.	Otherwise, provides supporting habitat for Northern Quoll, Pilbara Olive Python, Grey Falcon, Ghost bat (if outside 12 km radius) and Pilbara Leaf-nosed Bat. Provides marginal supporting habitat for the Greater Bilby.		
Drainage Area/ Floodplain	Lower lying plain, often subjected to sheet flow following large rainfall events. Vegetation and substrates within this habitat are variable, often comprising scattered Eucalyptus over Acacia and/or Grevillea shrubs with an understory dominated by Triodia hummock grasses and/or mixed tussock grasses on alluvial substrates, often comprising heavy clays and gravel. This habitat type is represented both in and out of the Activity Area and 500m buffer. Provides microhabitats for many fauna species including reptiles and mammals. Provides critical foraging habitat for Ghost Bat where it occurs within 12 km of critical roosting habitat. Otherwise, provides supporting habitat for Northern Quoll, Ghost Bat, Pilbara Leaf-nosed Bat and Grey Falcon.	Provides critical foraging habitat for Ghost Bat where it occurs within 12 km of critical roosting habitat. Otherwise, provides supporting habitat for Northern Quoll, Ghost Bat, Pilbara Leaf-nosed Bat and Grey Falcon. May provide some (sub-optimal) supporting habitat for Night Parrot and Greater Bilby.	25.3 ha	37.5 ha
Undulating Low Hills	Undulating low hills, footslope, hillslope, hillcrest/upper hillslope, ironstone outcrops, with scattered eucalypts over open Acacia shrubland over Triodia hummock grassland over gravelly silty or sandy clay loam. This habitat is widespread and common	May provide sub-optimal supporting habitat for Night Parrot and supporting habitat for the Grey Falcon but is otherwise low value as it has low vegetation complexity and low diversity of microhabitats.	0.02 ha	42.5 ha

Habitat Type	Description	Value to Program Matters	Extent within Activity Area (estimated extent that maybe cleared*)	Extent within 500m buffer
	throughout the Pilbara region and exhibits low vegetation complexity and low diversity of microhabitats.			
Stony Plain	Stony Plain habitat comprises flat to low undulating areas and low hills with vegetation dominated by Triodia hummock grasses of various life stages with scattered eucalypts and patches of various small to medium shrub species on gravelly clay loam substrates. In some low-lying areas, isolated patches of sandy substrate occur.	Provides critical foraging habitat for Ghost Bat where it occurs within 12 km of critical roosting habitat. May also provide supporting habitat for Pilbara Leaf-nosed Bat, Northern Quoll, and Grey Falcon. May provide some (sub-optimal) supporting habitat for the Night Parrot and Greater Bilby.	0.08 ha	24.7 ha
Hillcrest/Hillslope	The Hillcrest/ Hillslope habitat comprised a rocky substrate, often with exposed bedrock, on moderate to steep slopes as well as flattop crests leading into lower foot slopes. Instances of Gorge/Gully is contained within this habitat (and mapped separately). This habitat is usually dominated by open Eucalyptus woodlands, *Acacia* and *Grevillea* scrublands and *Triodia* low hummock grasslands. Hillcrest/ Hillslope is the dominant habitat type within the Activity Area and is common and widespread in the greater Pilbara region (Biologic 2025).	Provides critical habitat for the Ghost Bat where it occurs within 12 km of critical roosting habitat. Provides supporting foraging and dispersal habitat for Northern Quoll and Pilbara Leaf-nosed Bat.	21.2 ha	103.0 ha
Minor Drainage Line	Located within the minor gullies and depressions, generally through the Hillcrest/Hillslope habitat. Consists primarily of Acacia low shrubland. The understory generally lacks density and often consists solely of sparse tussock grassland, often including the weed Buffel Grass where it has been introduced.	The Minor Drainage Line habitat present within the Activity Area or 500m buffer does not provide critical or supporting habitat for any significant species due to the general lack of tall, hollow-bearing trees and low vegetation complexity and microhabitat diversity.	0.1 ha	5.0 ha

Habitat Type	Description	Value to Program Matters	Extent within Activity Area (estimated extent that maybe cleared*)	Extent within 500m buffer
	The substrate can be sandy in places but generally consists of a skeletal loam gravel or stone.			
Sand Plain	Sand Plain habitat is characterized by relatively deep sandy soils supporting dense spinifex grasslands and sparse shrubs. This habitat often occurs as terraces along Major Drainage Lines.	May provide supporting habitat for the Greater Bilby.	0 ha	0.06 ha
Gorge/Gully	Gorge/Gully habitat occurs within the 500 m buffer on third party tenure. Characterised by rugged, steep-sided valleys incised into the surrounding landscape. Gorges tend to be deeply incised, with vertical cliff faces, while gullies are more open (but not as open as Minor Drainage Lines). Caves and rock pools are most often encountered in this habitat type. Vegetation can be dense and complex in areas of soil deposition or sparse and simple where erosion has occurred.	Critical habitat for Northern Quoll and Pilbara Olive Python. Supporting habitat for Ghost Bat and Pilbara Leaf-nosed Bat. There are no caves in this section of habitat within the 500 m buffer.	0 ha	3.0 ha
Cleared/Disturbed	Cleared/ Disturbed areas include areas where the natural vegetation and microhabitats have been cleared, which may be devoid of vegetation or contain only a few scattered trees/shrubs (regrowth) or weeds. This includes drill pads, tracks, laydown areas, camps, historic clearing and third-party mining operational areas. This does not include rehabilitated areas or areas that contain Degraded fauna habitats.	Nil	22.4 ha	104.2 ha
No survey data	Small areas next to tracks or drill pads within the Activity Area. Likely errors in habitat mapping due to GPS error or other GIS issues.	Nil	0.2 ha	0 ha

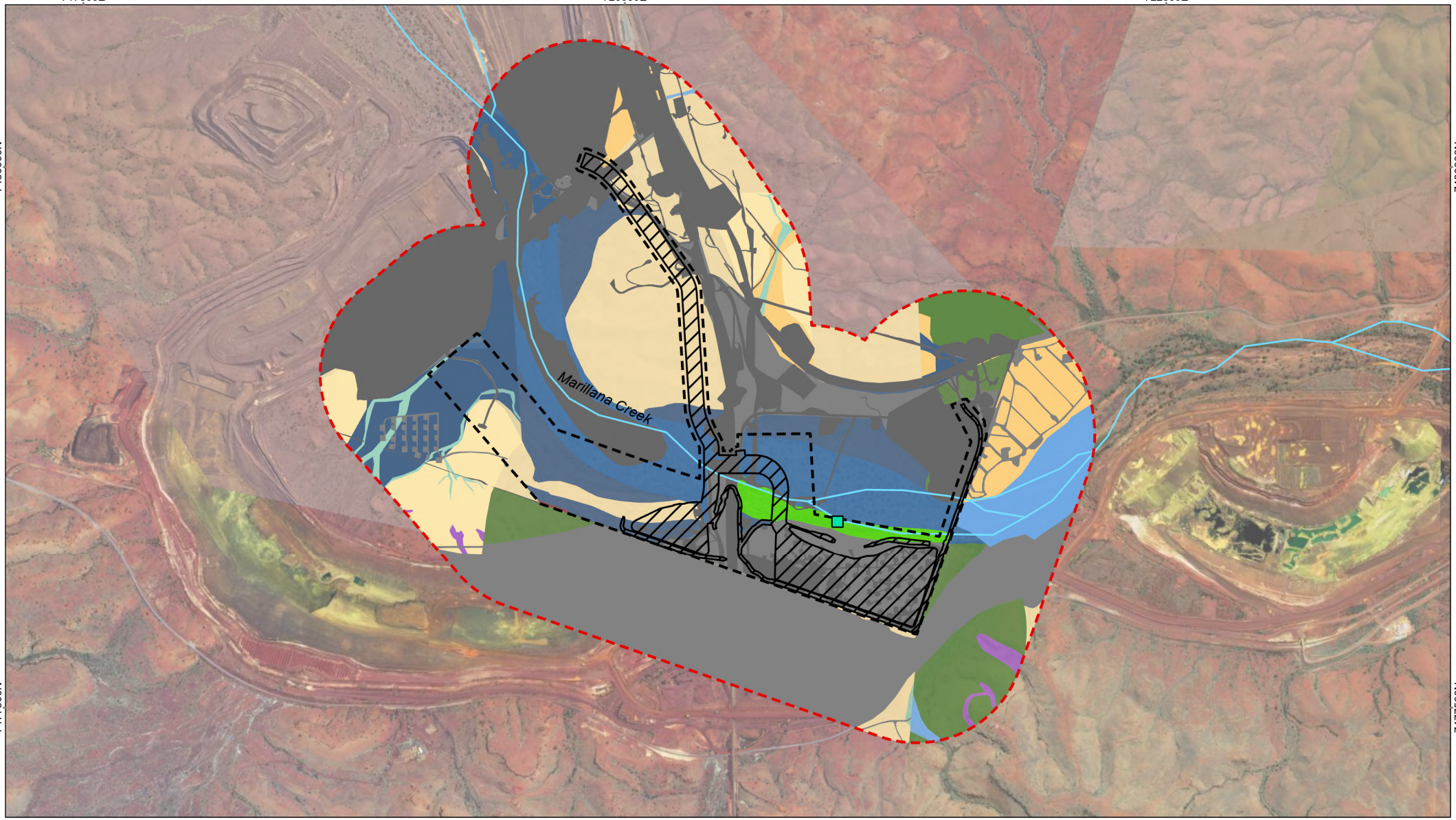
Habitat Type	Description	Value to Program Matters	Extent within Activity Area (estimated extent that maybe cleared*)	Extent within 500m buffer
Total habitat			**94.3 ha**	**379.6 ha**
Existing Yandi Mine[3]		Provides no value to fauna (cleared/disturbed).	30.34 ha	193.3 ha
Total			**124.6 ha**	**572.9 ha**
Total (rounded)			**125 ha**	**573 ha**

Activity Area habitat mapping sources: Astron 2023; Biologic 2018 and 2023a

500 m buffer habitat mapping sources: Biologic 2018, 2025; Spectrum Ecology 2026; Biota 2026

* Approval is being sought for clearing the whole Activity Area; however, this is likely to represent an overestimation of actual clearing given that the clearing footprint is 'indicative' and designed to be flexible.

[3] Area already cleared under the Ministerial Statement 679 or other approval mechanisms and prior to EPBC Strategic Approval



- Activity Area
- Indicative Footprint Elements
- Activity Area 500 m buffer
- Existing Disturbance
- Watercourse
- Water Feature

Habitat Type

- Cleared/ Disturbed
- Drainage Area/ Floodplain
- Gorge/ Gully
- Hillcrest/ Hillslope
- Major Drainage Line
- Medium Drainage Line
- Minor Drainage Line
- Mulga Woodland
- No Survey Data
- Sand Plain
- Stony Plain
- Undulating Low Hills
- Wetland

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Kilometers

GDA 1994 MGA ZONE 50

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YANDI VALIDATION NOTICE

FAUNA HABITAT WITHIN ACTIVITY AREA

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4:	1:24,000	PREPARED:	GEOMATICS	FIGURE:	5-1
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5.2 Pilbara Olive Python

The Program Matter Objective for the Pilbara Olive Python is "*to support the long-term persistence and viability of the Pilbara Olive Python within the Strategic Assessment Area"*. The following sections provide background information to demonstrate that Notifiable Action Triggers for Pilbara Olive Python are met. The assessment outlines the potential impacts on the Pilbara Olive Python and demonstrates how the Program Matter Objective for this species will be achieved.

5.2.1 General species information

The Pilbara Olive Python is listed under the EPBC Act as 'Vulnerable'. It is restricted to ranges within the Pilbara bioregion, although an isolated population is thought to occur south on Mount Augustus in the Gascoyne region (Bush and Maryan 2011), and additional records exist in the northeastern Carnarvon region. Within the Pilbara bioregion, the species has been recorded from the Hamersley Range, Dampier Archipelago, Pannawonica, Millstream, Tom Price, Burrup Peninsula, and 70 km east of Port Hedland (DCCEEW 2026a). The species is also known from riparian areas along the Fortescue River (Doughty *et al.* 2011).

The Pilbara Olive Python commonly inhabits rocky areas in proximity to water such as gorges, rivers, pools and surrounding hills, but can be found in a range of habitats. In the Hamersley region, this species is most often encountered in the vicinity of permanent water features in rocky ranges or among riverine vegetation (DCCEEW 2026a).

Pilbara Olive Pythons generally occupy a distinct home range ranging from 85 ha to 450 ha and move around frequently within their home range (Pearson 2006). Males can travel much further distances, up to 4 km, during the breeding season between June to August (DCCEEW 2026a).

There are multiple regional records of the species including 23 records within 40 km and four records within 15 km of the Activity Area (Figure 5-2).

5.2.2 Studies and sampling effort

Seven contemporary surveys have targeted the Pilbara Olive Python (Table 4-1), as well as numerous historical surveys (Appendix 2). Survey coverage and sampling effort for the Pilbara Olive Python is shown in Figure 5-3. Sampling methods for Pilbara Olive Python within the Activity Area and 500 m buffer include habitat assessments (including water feature assessments), targeted searches and/ or transects, nocturnal searches, and eDNA sampling (Biota 2026; Spectrum Ecology 2026; Biologic 2025, Astron 2024, 2023; Biologic 2023a, 2023b; Figure 5-3).

5.2.3 Local habitat

The Activity Area falls within the current distribution of the Pilbara Olive Python, whereby the species or species habitat may occur (Figure 5-2).

Critical habitat for the Pilbara Olive Python within the Activity Area and/or the 500m buffer includes Gorge/Gully, Wetland (Artificial) and Major Drainage Lines habitats, whilst Medium Drainage Lines provide supporting habitat (Astron 2023; Biologic 2018, 2023a, 2023b; Spectrum Ecology 2026).

There is approximately 24.7 ha of critical habitat for the Pilbara Olive Python within the Activity Area and 61.5 ha of critical habitat within the 500 m buffer (Table 5-2; Figure 5-4).

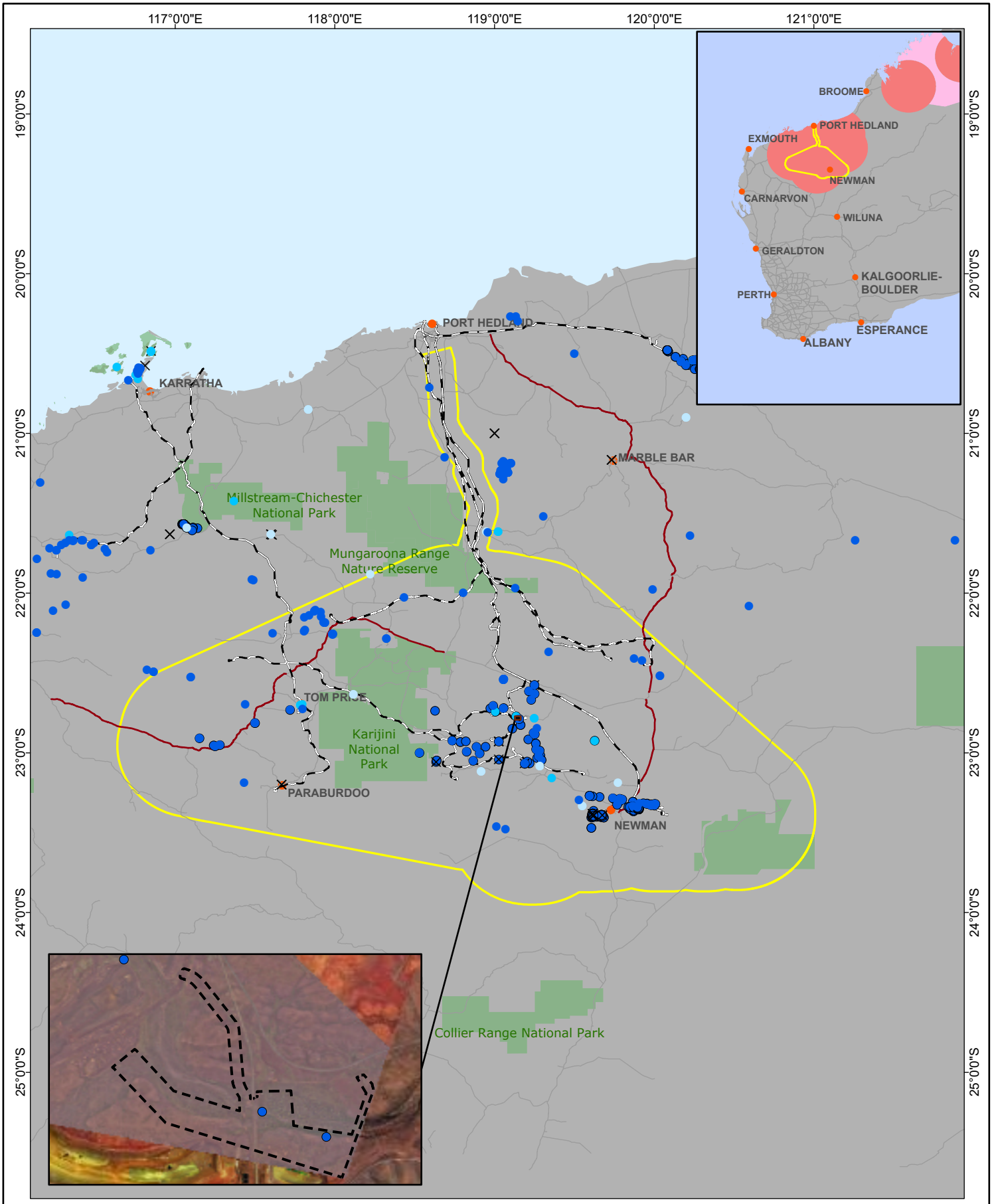
There is approximately 0.3 ha of supporting habitat for the Pilbara Olive Python within the Activity Area and 1.2 ha of supporting habitat within the 500 m buffer (Table 5-2; Figure 5-4).

Table 5-2: Pilbara Olive Python habitat

Habitat Description	Activity Area (ha; extent that maybe cleared)	500m buffer (ha)
Critical habitat		
Wetland (Artificial)	7.1	0.6
Major Drainage Line	17.6	57.9
Gorge/Gully	0	3.0
Total critical habitat	**24.7 ha**	**61.5 ha**
Supporting habitat		
Medium Drainage Line	0.30	1.2
Total supporting habitat	**0.30 ha**	**1.2 ha**
Total critical and supporting habitat	**25 ha**	**62.7 ha**

5.2.4 Pilbara Olive Python records

There are six historical records of the Pilbara Olive Python within the Yandi Development Envelope as detailed in MS 679, including two records from the Activity Area, including direct sightings and indirect evidence of skin sloughs and/or scats (Figure 5-4; Astron 2023). This demonstrates that a permanent population or individuals are likely residing within the Activity Area.



Activity Area
Strategic Assessment Area
Pilbara Olive Python Records
- Records After 2005
- Records Between 1980 - 2004
- Records Prior 1979
- Records Missing Date

- Species or species habitat likely to occur
- Species or species habitat may occur
- Rail Centreline
- Minor/ Regional Road
- Major Road

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Kilometres
GCS GDA 1994

BHP **PUBLIC**

YANDI VALIDATION NOTICE
PILBARA OLIVE PYTHON
REGIONAL RECORDS AND DISTRIBUTION

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

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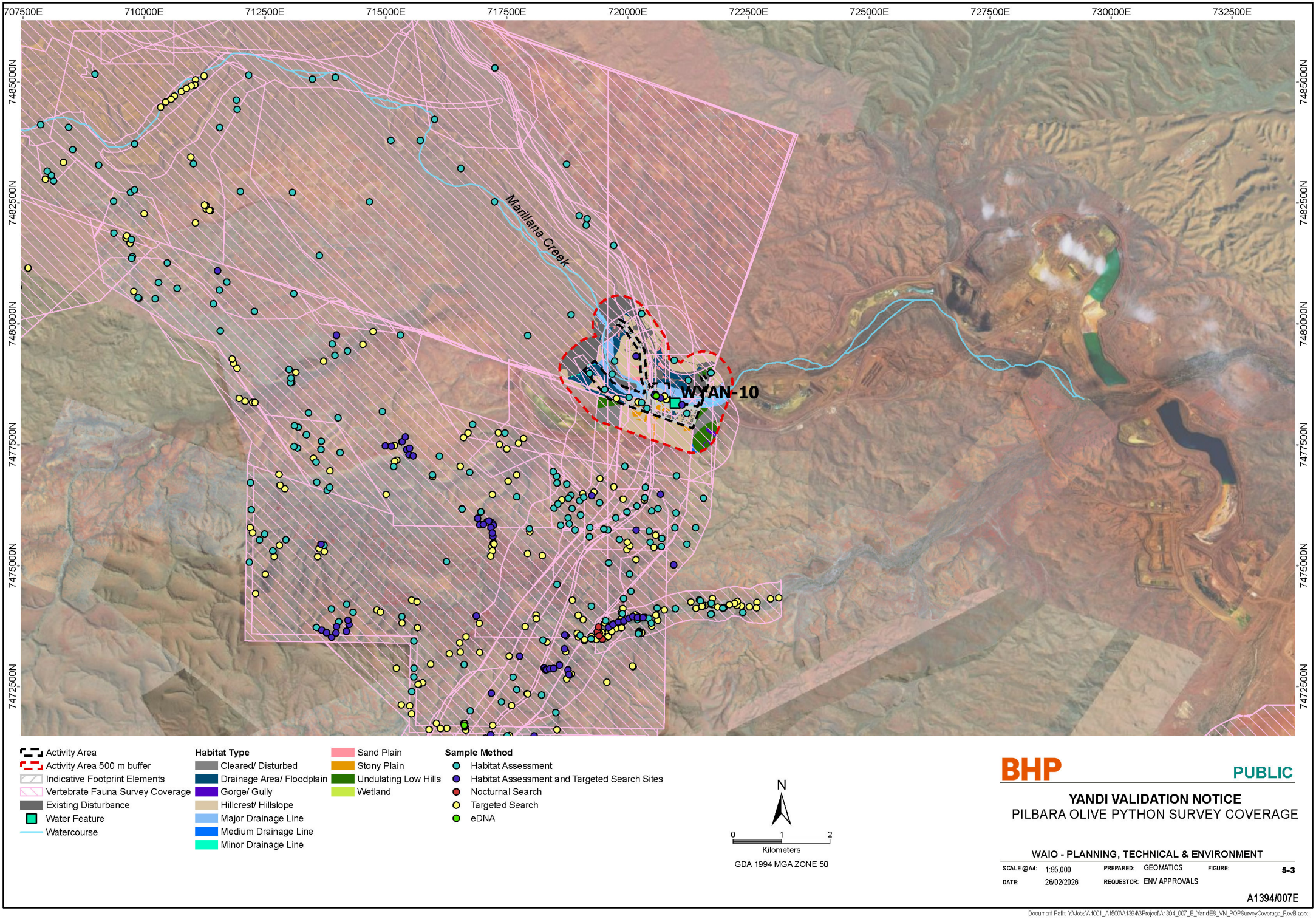

BHP

PUBLIC

YANDI VALIDATION NOTICE
PILBARA OLIVE PYTHON SURVEY COVERAGE

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

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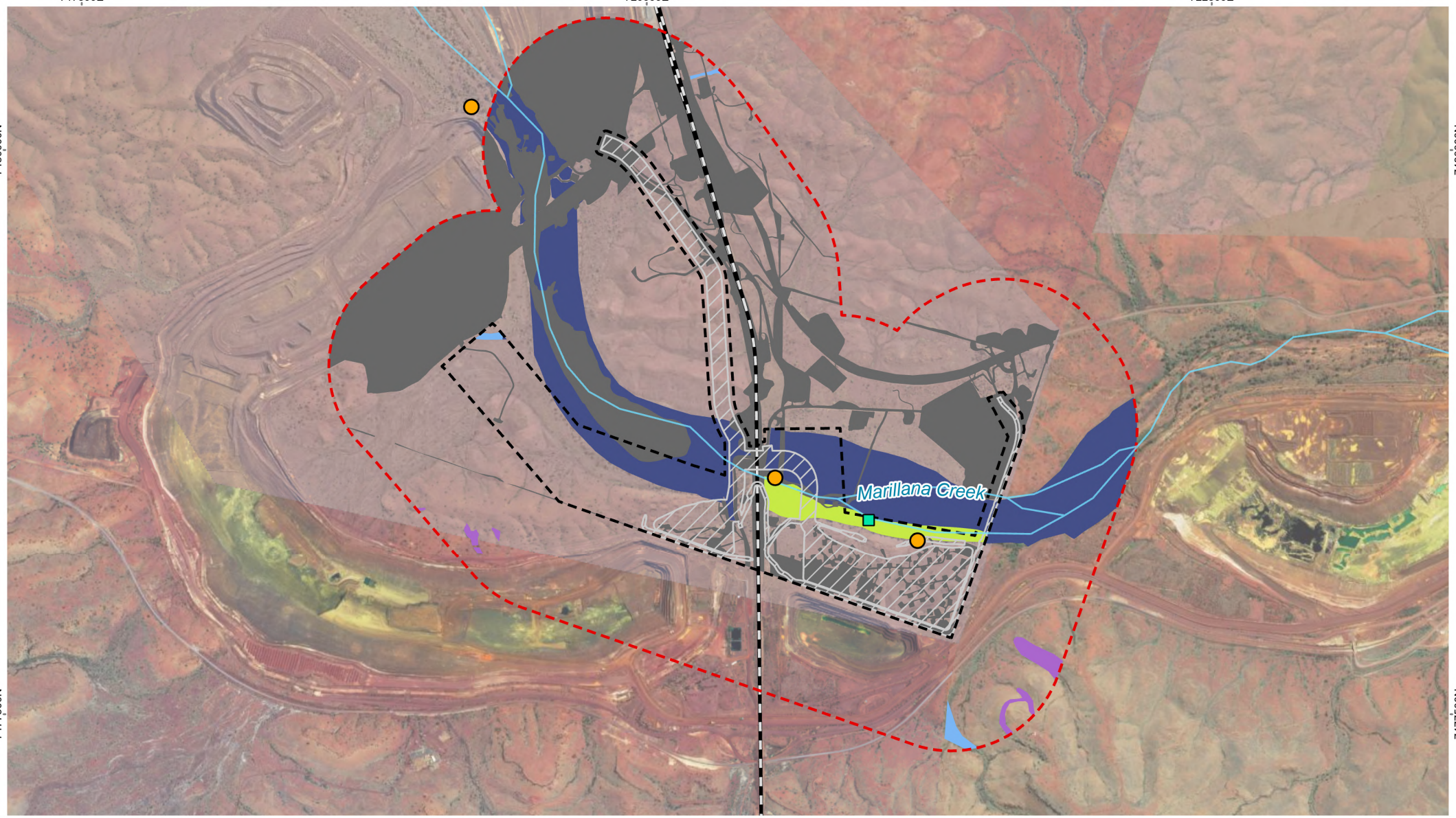

- Activity Area
- Activity Area 500 m buffer
- Indicative Footprint Elements
- Existing Disturbance
- BHP rail
- Watercourse
- Pilbara Olive Python Records
- Water Feature

Pilbara Olive Python Habitat

Critical Habitat
- Major Drainage Line
- Wetland
- Gorge/ Gully

Supporting Habitat
- Medium Drainage Line

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Kilometers

GDA 1994 MGA ZONE 50

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YANDI VALIDATION NOTICE
PILBARA OLIVE PYTHON HABITAT AND RECORDS

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

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5.2.5 Impact assessment

The potential direct and indirect impacts to the Pilbara Olive Python from the Activity (see Section 2) are considered below.

Habitat loss

The Activity may result in a direct loss of up to 24.7 ha of critical foraging and dispersal habitat (Artificial Wetland and Major Drainage Line) and 0.3 ha of supporting habitat (Medium Drainage Line) for the Pilbara Olive Python (Table 5-2). At least 62.7 ha of critical and supporting habitat will remain throughout the 500 m buffer, providing suitable, connected habitat for the species (Figure 5-4).

Clearing and creek crossings have the potential to fragment Pilbara Olive Python habitat along Marillana Creek; however, habitat connectivity and ecological function will be maintained through the use of culverts (polypipes) at the creek crossings, which will be designed to convey flows and not prevent or restrict the movement of water or fauna in the creek . This will provide a pathway for fauna, including Pilbara Olive Pythons, to move between downstream and upstream reaches of the creek. The maintenance of surface water flows along Marillana Creek will also continue to provide water to riparian vegetation, characterised by *Eucalyptus camaldulensis*, *Eucalyptus victrix* and *Melaleuca argentea,* and in turn maintain critical and supporting habitat for the Pilbara Olive Python.

Clearing for the Activity outside the creek is unlikely to result in additional habitat fragmentation given the existing Yandi mine and high level of disturbance that already occurs within the Activity Area. Whilst the Pilbara Olive Python is known to occur within the Activity Area and 500m buffer, it is only present at very low densities. Given the high level of existing disturbance and use of culverts at creek crossings, the Activity is not expected to fragment a population.

Changes to fauna habitats from changes to hydrological regimes

Groundwater dewatering for the Activity will introduce groundwater drawdown to the south-eastern portion of the Activity Area for the first time. There are no groundwater dependent pools present in the Activity Area; however, critical and supporting habitat for the Pilbara Olive Python that contains Groundwater Dependent Vegetation (GDV) and/or riparian vegetation is located within the groundwater drawdown contours of the Activity and includes Artificial Wetland and Major and Medium Drainage Line fauna habitats. GDV inside the Activity Area is proposed for clearing so is not considered further with regard to drawdown.

Groundwater levels within the vicinity of the Activity Area are currently influenced by cumulative groundwater drawdown from existing BHP and third-party dewatering operations. Current groundwater levels in the Activity Area are approximately 52 m below ground level (mbgl). Additional dewatering for the Activity is predicted to reduce groundwater levels to approximately 72 m mbgl (i.e., an additional 20 m of drawdown) within the Activity Area.

The potential impacts of groundwater drawdown from the Activity on GDV/riparian vegetation are limited to shallow water tables in the alluvium where GDV is likely to occur. Groundwater dewatering for the Activity will result in drawdown in the alluvium which may change the cycle of saturation and drying. Whilst the basement drawdown contours have been considered, the CID drawdown contours are the primary focus of the impact assessment given groundwater drawdown in the CID aquifer will result in drawdown in the alluvium where obligate GDV species primarily access groundwater (Astron 2020; Golder 2015).

In total, there is 3.6 ha of GDV, including High[4] (0.6ha) and Moderate[2] (3 ha) GDV, within the modelled groundwater drawdown area of the Activity, outside the Activity Area (Figure 2-1). All of this occurs within the Major Drainage Line habitat associated with Marillana Creek which provides critical habitat for Pilbara Olive Python (Figure 2-1). Areas of

[4] High likelihood GDV contains vegetation associations that are dominated by the groundwater dependent obligate phreatophyte species *Melaleuca argentea*, Moderate likelihood GDV contains vegetation associations dominated by facultative phreatophyte species *Eucalyptus camaldulensis* subsp. *refulgen*s and/or *Eucalyptus victrix*, Low likelihood GDV may contain scattered occurrences of facultative phreatophyte species, but these are not dominant, and Nil likelihood GDV contains no obligate/ facultative phreatophytes (Biologic 2024).

GDV that occur downstream (east) of the surplus water discharge point, could experience a decline in condition due to groundwater drawdown; however, the surplus water discharge along Marillana Creek is predicted to counterbalance the drawdown and maintain groundwater levels throughout this area as long as the surplus water discharge continues and the alluvium remains saturated.

Areas of GDV that occur upstream of the discharge point, to the north west of the Activity Area, occur within the basement drawdown but outside the predicted CID drawdown where impacts are likely to be less pronounced (if at all; Golder 2015) (Figure 2-1). This area occurs within the existing 30-40m drawdown area of the existing Yandi operations, and no additional drawdown will occur as part of the Activity. Impacts to GDV/riparian vegetation in this area as a result of the Activity are therefore unlikely.

Groundwater drawdown in the basement does extend beyond the Activity Area, mainly through neighbouring third-party mining operations, but also to areas south of the mining operations (Figure 2-1). Whilst there is some Pilbara Olive Python habitat in this area (i.e. Breakaway/Cliff, Minor Drainage Lines and Gorge/Gully), there are no groundwater dependent values that could be impacted by drawdown (i.e. no High or Moderate value GDV and no groundwater dependent pools).

The predicted drawdown of the Activity does not intersect with sensitive environmental receptors in the region including Flat Rocks, Marillana Creek pools or Yandicoogina Gorge.

In summary, the small amount of critical Pilbara Olive Python habitat, being High to Moderate likelihood GDV, surrounding the Activity Area is unlikely to be impacted by additional groundwater drawdown associated with the Activity given that the surplus water discharge will counterbalance impacts to GDV downstream, whilst GDV areas upstream are located outside the predicted CID drawdown, where impacts are unlikely to occur. GDV (riparian vegetation) will be monitored and managed in accordance with the commitment details in Table 8-1 in the final Validation Notice

Alterations to landforms and construction of infrastructure can lead to altered surface water drainage patterns which in turn may cause flooding and erosion in some areas, and rain-shadow effects in other areas. The Activity Area lies immediately south of Marillana Creek and is close to the eastern and southern boundary of the tenement. In this location the existing (pre-mining) topography slopes towards Marillana Creek and flow is contributed predominantly through diffuse overland flow within this part of the Marillana Creek catchment. The loss of catchment area contributing surface water runoff to Marillana Creek from the proposed Activity is estimated to be approximately 24 ha (0.24 km^2) corresponding to approximately 0.01% of the Marillana Creek catchment (2,050 km^2). The Activity includes the construction of flood bunds on the downstream side of the proposed pits adjacent to Marillana Creek to prevent water entering the pits from flood events during mining operations. The proposed bunding is designed to keep floodwater within the natural channel of Marillana Creek and simulate the natural catchment flow and prevent creek capture into the pits. A reduction in catchment area of less than 5% is within the natural variation of seasonal rainfall runoff. This is not considered likely to result in a residual impact to the catchment area on a local or regional scale, particularly given the highly seasonal nature of streamflow in the Pilbara, as well as the annual variability of rainfall. There is no diversion of the creek required for the Activity. With the implementation of surface water management measures, changes to surface water drainage will be minimised and are not predicted to result in residual impacts to habitats.

The creation of road infrastructure can result in changing waterway channel morphology and the clearing of riparian vegetation. Haul roads and light vehicle tracks across Marillana Creek will be designed to convey flows and not prevent or restrict the movement of water in the creek. The eastern creek crossing will be constructed level will the current flow channel with a number of polypipes included to reduce any obstruction to flow. The western creek crossing has been designed to convey flows up to 20% annual exceedance probability flows and bigger events designed to flow over the top of the road.

The release of surplus water into the environment has the potential to alter the hydrological regimes within the Marillana Creek catchment as well as potentially create mounding in the alluvial aquifer which could cause

waterlogging for deep rooted vegetation and an associated change to vegetation types. Discharge of surplus water for the Activity will occur at the existing discharge point. The proposed discharge rate for surplus water from the Activity is within the licence requirements. Monitoring riparian vegetation downstream of the discharge location as part of the existing operations has shown generally positive impacts on riparian vegetation health within the Activity Area. Wetting front limits have not previously been set for this location, however the maximum distance recorded was 9 km in 2008, and more recently 2.5 km in 2023. The surface discharge from the Activity will increase the flow of water along Marillana Creek causing permanent/semi-permanent flow for up to 9 km during the time when the discharge point is utilised.

Following cessation of discharge riparian vegetation communities will change to a new equilibrium commensurate with the post-mining availability of water. The Eucalypt species (*Eucalyptus camaldulensis* and *Eucalyptus victrix*) are likely to be more resilient to changes to water table depth, however some stands of *Melaleuca argentea* may not remain viable (BHP 2025). The potential for future loss of fauna habitats containing riparian vegetation following cessation of discharge for the Yandi mine is addressed in the Yandi Mine Closure Plan (BHP 2025a) and includes reference to the potential opportunity to support the riparian vegetation downstream of the discharge location which is currently being explored with Traditional Owners (noting these areas occur within third-party mining areas). If feasible, this will be incorporated into future updates to the Yandi Mine Closure Plan (BHP 2025a). Based on this, and the proposed discharge rate being within licence requirements, potential impacts to vegetation are considered unlikely.

Disturbances from increased light, noise, vibration and dust

An increase in noise, light, vibrations and dust emissions resulting from construction and operation of the Activity has the potential to disturb Pilbara Olive Python by altering behaviour including abandonment of an area, whilst exposure to artificial light can interfere with activities governed by the length of the day including reproduction, dormancy, and foraging. High airborne particulate levels (dust) have the potential to irritate the eyes or interfere with vision and affect the ability of individuals to capture prey.

Vegetation clearing and vehicle movements may result in an increase in dust. Dust can indirectly affect fauna by altering the structure and composition of native vegetation and causing habitat degradation. However, degradation of habitat value due to dust emissions is considered unlikely due to the implementation of dust monitoring and management measures within the Activity Area, and minimisation of clearing activities to 95 ha.

Habitat modification from weeds or fire

Hot work activities on site and the potential for increased vehicle movements could increase the risk of fire and spread of weeds, respectively. Fire and weed encroachment have the potential to degrade Pilbara Olive Python habitat within and adjacent to the Activity Area. With standard BHP fire management and weed control practices, the potential for increased risk of fire and habitat degradation due to weeds, are considered low.

Feral predators and cane toads

Feral predators such as feral cats (*Felis catus*) and foxes (*Vulpes vulpes*) may prey on the Pilbara Olive Python and/or compete with the Pilbara Olive Python for food (quolls and rock-wallabies (DEWHA 2008a, b; DCCEEW 2024, 2026a; Pearson 2006). With standard BHP feral cat management practices and given the absence of fox records in the Activity Area, the potential impact of feral cats or foxes on the Pilbara Olive Python is considered low. BHP is also currently investigating options to implement ongoing feral cat monitoring, to enhance detection and control measures.

The Pilbara Olive Python may be vulnerable to lethal toxic ingestion of cane toad toxin. The future predicted spread of the cane toad into the Pilbara bioregion may have negative impacts to the Pilbara Olive Python, as observed in other species in other areas of northern Australia. Some models predict that the cane toad's distribution will spread to include the Pilbara via the narrow coastal strip, but this spread will be dependent on the presence of artificial water

bodies (Tingley *et al.* 2013). This Activity is not predicted to increase impact of cane toad on the Pilbara Olive Python and the potential impact of cane toads on the python is considered low.

Vehicle and infrastructure interactions

Vehicle and machinery movements have the potential to result in fauna strikes, causing injury or mortality to fauna individuals. Pilbara Olive Python are vulnerable to vehicle strike due to being a slow-moving, ground dwelling species with the risk of interaction with vehicles being greatest where roads occur in proximity to suitable habitat for the species.

Haul roads, creek crossings and access roads will be required to support the Activity and will occur adjacent to areas of critical and supporting habitat; however, these are located partially within existing mining operations and disturbance areas. In addition, the species is only present within the Activity Area and buffer at a low density. Appropriate speed limits will be imposed at creek crossings in the Activity Area to minimise the risk of vehicle strike or fauna interactions with machinery. As the Pilbara Olive Python are predominately nocturnal, clearing activities will be restricted to mostly daylight hours to reduce the possibility of interaction with machinery. As such, an increased risk of injury or mortality due to vehicle collision is considered low.

5.2.6 Mitigation Hierarchy

Avoid

BHP has undertaken an options analysis of the Activity as part of the engineering design process, considering alternative locations for non-processing and processing infrastructure to avoid disturbance to fauna habitat. The Activity includes the transport and stockpiling of overburden in existing in-pit Overburden Storage Areas (OSAs) at the Yandi E7 and E4 pits. Additionally, the Activity will utilise existing ore stockpiles and processing facilities at Yandi.

In determining the preferred option (illustrated by the Indicative Footprint Elements), BHP has considered:

- Avoiding, to the extent practicable, physical disturbance to critical habitat for significant fauna within the Activity Area, while recognising that pit design is optimised to maximise recovery of high-grade iron ore and that access and haul roads are required to cross Marillana Creek.
- Maximising the use of previously disturbed areas, with key infrastructure components, such as water infrastructure, located within historically disturbed areas where feasible.

Minimise

Clearing of critical and supporting habitat for the Pilbara Olive Python will be minimised to that which is necessary for implementation of the Activity.

A suitably trained fauna spotter will be utilised where clearing is to be undertaken in critical Pilbara Olive Python habitat where recent records have been identified.

Modify land clearing plans (if proposed clearing may disturb known locations of Pilbara Olive Python), where practicable, to minimise disturbance to known significant fauna within the Activity Area.

Construction will be mostly undertaken during day-light hours which will minimise impacts to the Pilbara Olive Python, which is primarily nocturnal.

Appropriate speed limits will be imposed at creek crossings in the Activity Area to minimise the risk of vehicle strike or fauna interactions with machinery.

Dust will be minimised as far as practical utilising water carts and speed limits to minimise degradation of fauna habitats.

Potential impacts to Pilbara Olive Python habitat from fire will be minimised through standard BHP hot work management procedures, assigning designated smoking areas and managing fuel loads through weed control programs.

Discharge to Lower Marillana Creek will occur at the existing discharge location in use at the Yandi mine which has shown no significant negative impacts on riparian vegetation health from surplus water discharge since its establishment in 2009. Impacts associated with habitat degradation caused by groundwater drawdown and surface water discharge will be monitored and managed in accordance with the commitments detailed in Table 8-1. Performance criteria, monitoring, management and mitigation actions for riparian vegetation health to minimise impacts to fauna habitat are further detailed in Table 8-1.

Standard hygiene practices will be implemented to minimise introduction and spread of weeds including annual weed control (if required) and vehicle hygiene measures when entering/leaving construction areas to minimise impacts critical and supporting habitat for the Pilbara Olive Python.

BHP will store waste securely to prevent feral animal attraction and will implement standard BHP feral cat management practices.

In the event the presence of cane toads is detected on site, additional management measures will be applied following the guidance of DBCA.

Rehabilitation and closure of the Activity will be managed through the Yandi MCP (BHP 2025a). The Activity will be progressively rehabilitated upon completion of mining. The pit will be backfilled to the invert of the Marillana Creek to prevent creek capture and maintain surface water flows in Marillana Creek. The management approach will include construction of fauna habitats into rehabilitated areas at closure, where practicable and supplementary replanting (where required).

5.2.7 Residual Impact

Residual direct impacts include the loss of up to 24.7 ha of critical foraging and dispersal habitat and 0.3 ha of supporting habitat from vegetation clearing. The loss of critical and supporting habitat for the Pilbara Olive Python is considered to be a residual impact and offsets will be provided (see Section 7).

5.2.8 Review of Program Matter Outcomes

Following the impact assessment (Section 5.2.5) and application of the mitigation hierarchy (Section 5.2.6) a review of the Activity against the PMOs was undertaken. Table 5-3 presents a review and identifies which PMOs are relevant for the Activity and considers further management.

Table 5-3: Review of Program Matter Outcomes (Pilbara Olive Python)

Program Matter Outcome	Notifiable Action trigger	Assessment
Minimise loss of critical and supporting habitats of the Pilbara Olive Python as a result of Program Activities within the SAA AND No loss (or maintain) Pilbara Olive Python population(s) as a result of Program activities	Within the Activity Area and or within a 500 m buffer of the Activity boundary, there is: Presence of Pilbara Olive Python critical habitat and or supporting habitat AND Presence or sign/s of a Pilbara Olive Python population or residing individuals	The loss of up to 24.7 ha of critical and 0.3 ha of supporting habitat represents a residual impact and requires offsetting (see Section 7). The Activity is not predicted to result in any loss of population, given the small amount proposed for clearing and given there are only six historical records and no recent records of the species in the Activity Area (despite targeted survey effort).

5.2.9 Monitoring

Monitoring for Pilbara Olive Python is undertaken annually as part of the Regional Pilbara Olive Python monitoring program. Monitoring of potential impacts to Pilbara Olive Python foraging and dispersal habitat is undertaken biannually through a riparian vegetation monitoring program required by Ministerial Statement 679 and management measures implemented if adverse impacts detected. Further information on Pilbara Olive Python monitoring is detailed in Table 8-1.

5.2.10 Summary

BHP considers the Activity will result in minimal loss of critical and supporting habitats of the Pilbara Olive Python as a result of Program Activities within the SAA. Pilbara Olive Python population(s) will be maintained as a result of Program activities given the minimal disturbance area, implementation of management and monitoring measures to minimise impacts, and that the loss of critical and supporting habitat will be offset (Section 7). As a result, the PMO will be achieved.

See Table 8-1 for performance targets for the Pilbara Olive Python.

5.3 Northern Quoll

The following sections provide information to demonstrate that the Northern Quoll Notifiable Action triggers are not met. The Program Matter Objective for the Northern Quoll is "*to support the long-term persistence and viability of the Northern Quoll within the Strategic Assessment Area"*. The assessment outlines the potential impacts on the Northern Quoll and demonstrates how the Program Matter Objective for this species will be achieved.

5.3.1 General species information

The Northern Quoll is listed under the EPBC Act as 'Endangered'. It is the smallest and most arboreal of the four Australian quoll species (van Dyck and Strahan 2008) and has undergone a dramatic range contraction since European settlement, including a 75% reduction in distribution during the 20th century. In the Pilbara, Northern Quoll distribution is bounded in the north, east and south by the Great Sandy Desert, Gibson Desert and Little Sandy Desert (DCCEEW 2026b). The potential invasion of the Pilbara by the cane toad is regarded as the most significant future threat to the persistence of the Northern Quoll in the Pilbara (Cramer *et al.* 2016a).

Northern Quolls mostly favour rocky habitats (e.g. escarpments, mesas, gorges, breakaways and boulder fields), major drainage lines and treed creek lines as denning or shelter habitat, and foraging occurs in the vegetated areas surrounding their dens (DCCEEW 2026b). Higher densities of Northern Quoll are usually found in rocky habitats as they offer protection from predators and are generally more productive in terms of availability of resources (Braithwaite and Griffiths 1994, Oakwood 2002). Figure 5-5 illustrates the regional records and distribution of the Northern Quoll.

The ecology of Northern Quolls is complex as they use habitats in a variety of ways for denning and foraging, and an individual can use multiple den sites. Northern Quolls will den during the day and leave den sites to forage during the night. They are generally considered to be solitary, with females having mutually exclusive denning areas, but can have overlapping foraging areas. Populations fluctuate annually, which is likely to be related to the abundance, dispersion and renewability of food (Oakwood 2002). Both sexes usually change dens every night, with females each using up to 55 dens in a breeding season (Oakwood 2008).

5.3.2 Studies and sampling effort

Six contemporary surveys have targeted the Northern Quoll within the Activity Area or 500 m buffer (Table 4-1), as well as numerous historical surveys (Appendix 2). Survey coverage for Norther Quoll is shown in Figure 5-6. Sampling methods for Northern Quoll within the Activity Area and 500 m buffer include habitat assessments, targeted searches and/ or transects, camera traps and nocturnal searches (Spectrum Ecology 2026; Biologic 2025, Astron 2024, 2023; Biologic 2023a, 2023b; Figure 5-6).

5.3.3 Local habitat

The Activity Area falls within the current distribution of the Northern Quoll, whereby the species or species habitat may occur (Figure 5-5).

Major Drainage Line, Medium Drainage Line, Wetland, Stony Plain, Drainage Area/Floodplain, and Hillcrest/Hillslope habitats are likely to represent supporting habitat suitable for foraging and dispersal for the Northern Quoll within the Activity Area and/or 500m buffer (Figure 5-9; Table 5-4).

There is no critical habitat present within the Activity Area; however, there is 3.0 ha of critical habitat for the Northern Quoll present within the 500m buffer in Gorge/Gully habitat (Biologic 2025; Figure 5-7).

There is approximately 72 ha of supporting habitat for the Northern Quoll within the Activity Area and 225 ha of supporting habitat within the 500 m buffer (Table 5-4; Figure 5-7).

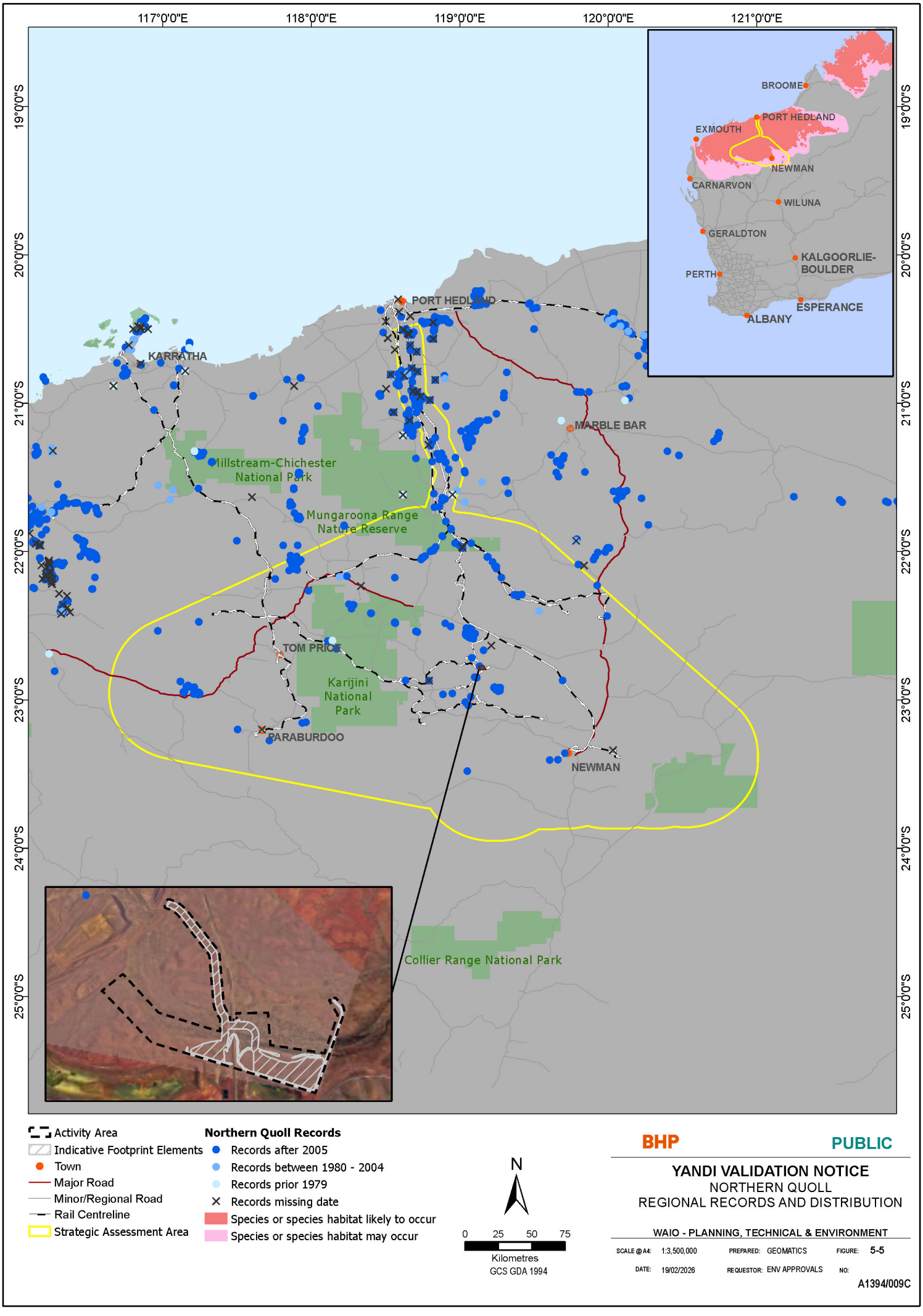
Table 5-4: Northern Quoll habitat

Habitat description	Within Activity Area (ha; extent that may be cleared)	Within 500m buffer (ha)
Supporting habitats		
Wetland	7.1	0.6
Major Drainage Line	17.6	57.9
Medium Drainage Line	0.3	1.2
Drainage Area/Floodplain	25.3	37.5
Stony Plain	0.07	24.7
Hillcrest/Hillslope	21.5	103.0
Total supporting habitat	**71.9 ha**	**224.9 ha**
Critical habitats		
Gorge/Gully	0	3.0
Total critical habitat	**0 ha**	**3.0 ha**
Total critical and supporting habitat	**71.9 ha**	**227.9 ha**

5.3.4 Northern Quoll records

The Northern Quoll has historically been recorded twice within the existing Yandi mining area, but outside of the proposed Activity Area and 500 m buffer (Figure 5-7). One record was a direct observation of an individual, approximately 800 m north east of the Activity Area (Figure 5-7), and the other a deceased Northern Quoll on the main Yandi access road, over 8 km north west of the Activity Area (Figure 5-7). Both records are from pre-2016 and occurred in areas that have now been cleared as part of the existing Yandi mine. Despite extensive survey effort within the Yandi mine Development Envelope, the species has not been recorded since (Astron 2023; Biologic 2023a, 2025; Spectrum Ecology 2026).

A population of Northern Quoll is considered unlikely to occur within or in proximity to the proposed Activity Area, with the closest known population present within ridgelines located approximately 13 km to the north (Astron 2023; Biologic 2023a, 2025; Spectrum Ecology 2026). The two individuals historically recorded are likely to be transient or dispersing individuals and a population is unlikely to reside in the Activity Area or 500 m buffer.



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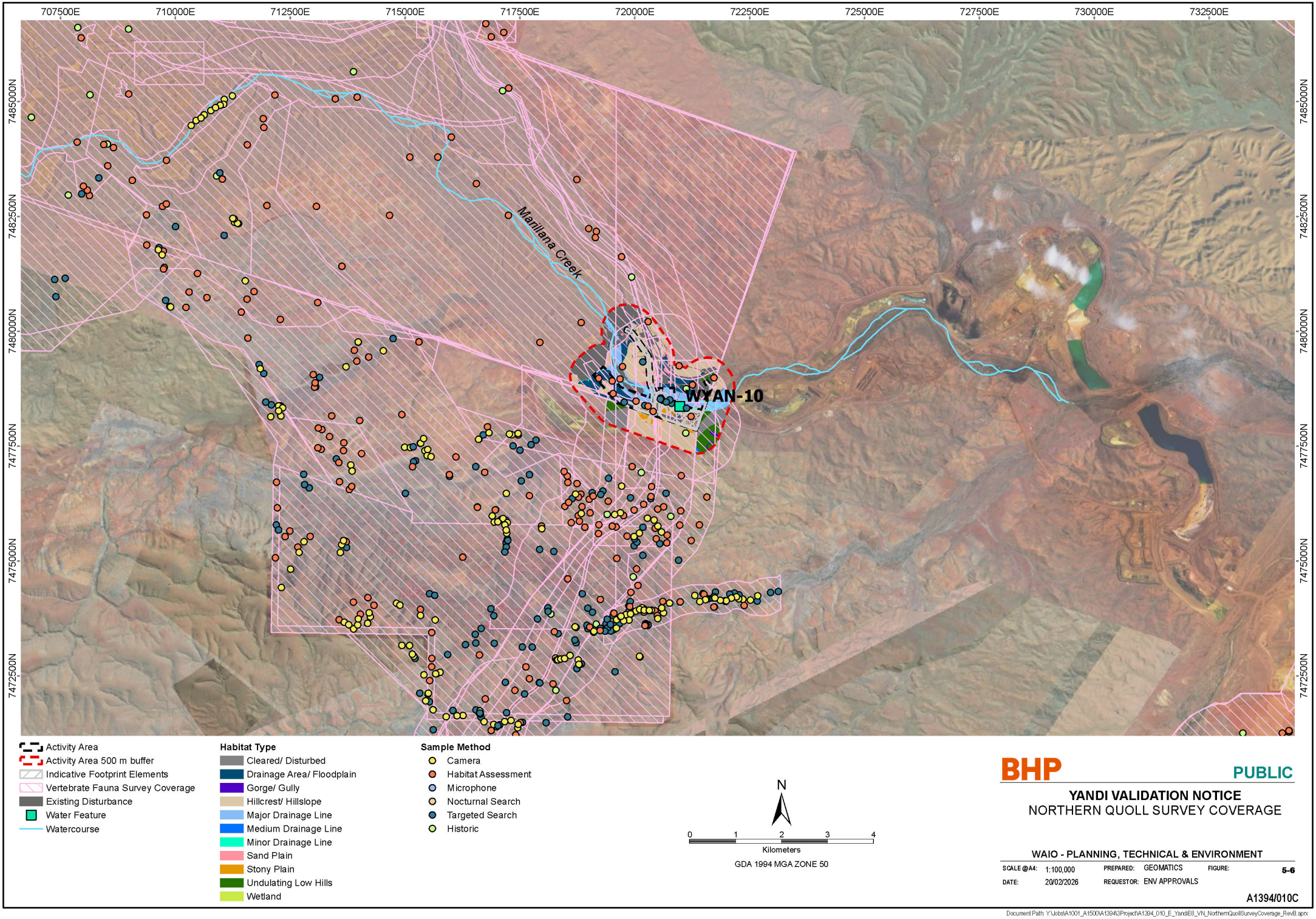
YANDI VALIDATION NOTICE
NORTHERN QUOLL
REGIONAL RECORDS AND DISTRIBUTION

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4: 1:3,500,000 PREPARED: GEOMATICS FIGURE: 5-5

DATE: 19/02/2026 REQUESTOR: ENV APPROVALS NO:

A1394/009C



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YANDI VALIDATION NOTICE
NORTHERN QUOLL SURVEY COVERAGE

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @A4:	1:100,000	PREPARED:	GEOMATICS	FIGURE:	5-6
DATE:	20/02/2026	REQUESTOR:	ENV APPROVALS		

A1394/010C

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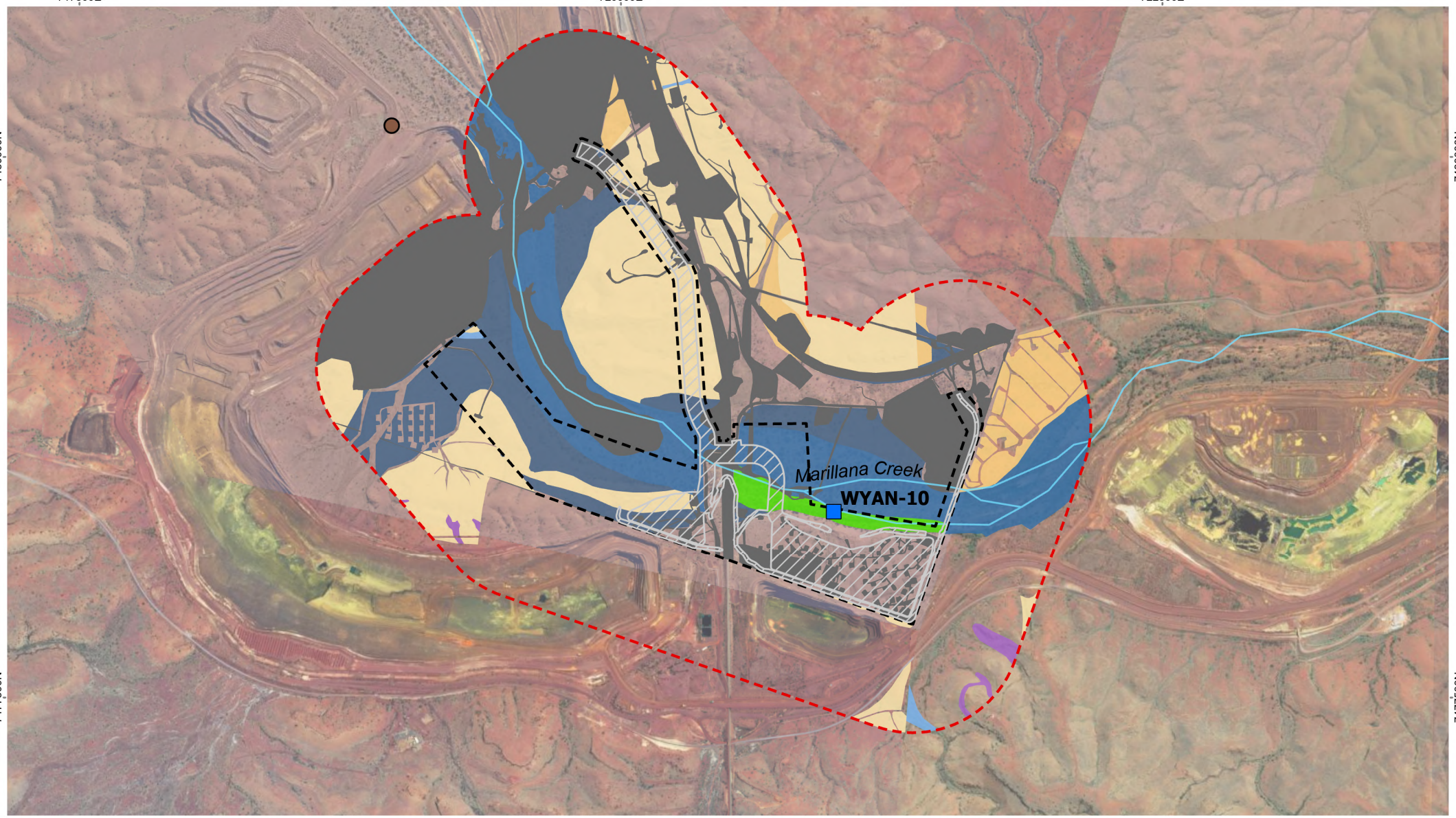

Activity Area
Activity Area 500 m buffer
Indicative Footprint Elements
Nearest Northern Quoll recorded 0.8 Km Northwest of Activity Area
Water Feature
Watercourse
Existing Disturbance

Northern Quoll Habitat
Critical Habitat
Gorge/ Gully
Supporting Habitat
Drainage Area/ Floodplain
Hillcrest/ Hillslope
Major Drainage Line
Medium Drainage Line
Sand Plain
Stony Plain
Wetland

N

0 0.5 1
Kilometers

GDA 1994 MGA ZONE 50

BHP

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YANDI VALIDATION NOTICE
NORTHERN QUOLL HABITAT AND RECORDS

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4:	1:24,000	PREPARED:	GEOMATICS	FIGURE:	5-7
DATE:	13/05/2026	REQUESTOR:	ENV APPROVALS		

A1394/011D

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5.3.5 Impact assessment

The potential direct and indirect impacts to the Northern Quoll from the Activity are considered below. Impacts to the Northern Quoll from the Activity are considered low and do not result in a Notifiable Trigger.

Habitat loss

The key potential impact to the Northern Quoll arising from the Activity is loss of supporting habitat. Up to 72 ha of supporting habitat including Artificial Wetland, Major Drainage Line, Medium Drainage Line, Drainage Area/ Floodplain, Stony Plain and Hillcrest/Hillslope may be disturbed. Given the lack of records of Northern Quoll within the Activity Area or within the 500 m buffer, and lack of evidence of a residing population or colony, as well as the existing high level of disturbance, any additional loss of habitat is not predicted to impact any individuals or fragment a population. Approximately 227.9 ha of critical and supporting habitat will remain throughout the 500 m buffer, providing suitable, connected habitat for the species (Figure 5-7).

Changes to fauna habitats from altered hydrological regimes

Groundwater dewatering for the Activity will introduce groundwater drawdown to the south-eastern portion of the Activity Area for the first time. There are no groundwater dependent pools present in the Activity Area; however, supporting habitat for the Northern Quoll that contains GDV occurs within the Wetland and Major and Medium Drainage Line fauna habitats to the east of the Activity Area. These habitats could potentially be degraded by groundwater drawdown; however, the proposed surplus water discharge along Marillana Creek is predicted to counterbalance the drawdown and maintain groundwater levels within this area. See Section 5.2.5 for further discussion of potential impacts to fauna habitat from altered hydrological regimes. Residual impacts to supporting habitat for the Northern Quoll associated with groundwater drawdown are therefore unlikely.

Alterations to landforms and construction of infrastructure can lead to altered surface water drainage patterns which in turn may cause flooding and erosion in some areas and, rain-shadow effects in other areas. These impacts have the potential to degraded supporting habitat for Northern Quoll. However, with the implementation of surface water management measures, changes to surface water drainage will be minimized and are not predicted to result in residual impacts to habitats.

Disturbances from increased dust, light, noise and vibration

An increase in noise, light, vibrations and dust emissions resulting from construction and operation of the Activity has the potential to disturb Northern Quoll by altering behaviour or interfering with activities governed by the length of the day including reproduction, dormancy, and foraging. Increased dust can indirectly affect fauna by altering the structure and composition of native vegetation and causing habitat degradation. Degradation of habitat value due to dust emissions is considered unlikely due to the implementation of dust monitoring and management measures within the Activity Area, and minimisation of clearing activities to 95 ha.

Whilst disturbances associated with an increase in light, noise and vibrations are expected as a result of the Activity these will be highly localised. Given that the Activity is located within existing operational areas, impacts are not expected to be greater than those already present for the existing Yandi mine. In addition, the Northern Quoll is only present in the area on a transient basis, at low densities. Therefore, the potential impact on Northern Quoll from increased light, noise, vibrations and dust emissions is expected to be minimal.

Habitat modification from weeds or fire

Hot work activities on site and the introduction and increased vehicle movements could increase the risk of fire and spread of weeds, respectively. Fire and weed encroachment have the potential to degrade Northern Quoll supporting habitat within the Activity Area and within 500m of the Activity Area. In addition, fire activity can remove ground cover

and make native fauna more vulnerable to predation. With standard BHP fire management and weed control practices, the potential for increased risk of fire and habitat degradation due to weeds, are considered low.

Feral predators and cane toads

Feral predators such as the feral cat and European fox may compete with the Northern Quoll for food or may prey on it. With implementation of standard BHP waste management and feral cat management practices, the lack of European fox records, and given there are only two historical records of the Northern Quoll in the Activity Area, the potential impact of feral cats or foxes on Northern Quoll is considered low. BHP is also currently investigating options to implement ongoing feral cat monitoring to enhance detection and control measures. This information will be updated in the final Validation Notice if available at the time of publication.

The Northern Quoll is vulnerable to lethal toxic ingestion of cane toad toxin, and this is considered the main threat to Northern Quoll populations outside of the Pilbara (Oakwood 2004; Hill and Ward 2010). The future predicted spread of the cane toad into the Pilbara bioregion may have comparable negative impacts to the Northern Quoll as observed in other areas of northern Australia. Some models predict that the cane toad's distribution will spread to include the Pilbara via the narrow coastal strip, but this spread will be dependent on the presence of artificial water bodies (Tingley *et al*. 2013). The Activity is not predicted to result in the spread of cane toad into the area and given that Northern Quoll is only present at low densities, any potential impacts on the Northern Quoll are considered low.

Vehicle and infrastructure interactions

The presence of infrastructure has the potential to alter movement patterns of fauna that may be present. Much of the Activity Area consists of existing cleared areas where habitat values are degraded or no longer exist.

Interaction of fauna with vehicle and machinery movements have the potential to result in fauna strike, causing injury or mortality to fauna individuals. Northern Quoll are vulnerable to vehicle strike due to being a ground dwelling species and the risk of interaction with vehicles is greatest where roads occur in proximity to suitable habitat for the species.

Haul roads and access roads will be required to support the Activity. However, given the Northern Quoll is only present at low densities, with only two historical records of the species in the nearby area, the risk of mortality due to vehicle collision is considered low.

5.3.6 Summary

The Northern Quoll Notifiable Action triggers are not applicable as there are no records of Northern Quoll within the Activity Area or within the 500 m buffer (where surveyed) of the Activity Area. Supporting habitat is present within the Activity Area; however, no critical habitat is present and will therefore not be impacted.

5.4 Ghost Bat

The following sections provide information to demonstrate that the Ghost Bat Notifiable Action triggers are not met. The Program Matter Objective for the Ghost Bat is "*to support the long-term persistence and viability of the Ghost Bat within the Strategic Assessment Area"*. The assessment outlines the potential impacts on the Ghost Bat and demonstrates how the Program Matter Objective for this species will be achieved.

5.4.1 General species information

The Ghost Bat is listed under the EPBC Act as 'Vulnerable'. It is the largest microbat in Australia and the second largest in the world (TSSC 2016a). In the Pilbara region, the species occurs in all four sub-regions and was recorded in 21 of the 24 areas surveyed by during the Pilbara Biological Survey (Department of Park and Wildlife 2002-2007; see McKenzie and Bullen 2009). The Pilbara Ghost Bat population is currently estimated to be approximately 1,850 (350 across the Hamersley Range and 1,500 across the eastern Pilbara) (Bat Call WA 2021a). The largest colonies

of Ghost Bats in the Pilbara occur outside the SAA where they mostly roost in abandoned mines. Colonies within the SAA are much smaller, and available data suggests that they likely depend on a number of roosts within their range. Figure 5-8 illustrates regional records of Ghost Bat.

In the Pilbara region, the species roosts in deep, complex caves beneath bluffs of low rounded hills, often composed of Marra Mamba Iron Formation or banded iron formation, granite rock piles and abandoned mines (Armstrong and Anstee 2000). Ghost Bats may move between caves both seasonally and in response to weather changes (van Dyck and Strahan 2008). Highly suitable foraging habitats for the Ghost Bat in the Pilbara include Drainage Area/Floodplain, Gorge/Gully, Major Drainage Line and Mulga Woodland, followed by Stony Plain as a less suitable habitat (TSSC 2016a).

Recent Ghost Bat tracking studies show that Ghost Bats, both male and female, forage over large areas up to 12 km from their diurnal roost (Augusteyn et al. 2018; Biologic 2019; Bullen 2021), and occasionally up to 17 km from a roost during foraging bouts (Bullen et al. 2023).

There are over 100 regional Ghost Bat records within 5-30 km of the Yandi Development Envelope (Figure 5-8), and the Activity Area falls within the current distribution of the Ghost Bat whereby the species or species habitat may occur (Figure 5-8).

5.4.2 Studies and sampling effort

At least six contemporary surveys have targeted the Ghost Bat within the Activity Area (Table 4-1), as well as numerous contemporary and historical surveys in the wider area (Appendix 2). Survey coverage and sampling effort for the Ghost Bat is shown in Figure 5-9. Sampling methods for Ghost Bat within the Activity Area and 500 m buffer include habitat assessments (including water and cave feature assessments), targeted searches and/ or transects, and ultrasonic recorders (Astron 2024, 2023; Biologic 2025, 2023a; Spectrum Ecology 2026; Figure 5-9). Where suitable caves or overhangs that may be utilised by the species were located, detailed cave assessments and searches were undertaken to search for evidence of occurrence and determine the likely use of the cave as a roost site.

Sampling methods for cave assessments includes searching inside or at entrances of caves, scat collection, counts and analysis, visual observations of individuals, DNA analysis, hormone analysis, placing ultrasonic detectors near water features, caves and foraging/ dispersal corridors, and infra-red video recordings. Microclimate and photo monitoring are also undertaken to monitor the suitability of the caves as habitat for ghost bats. Where a cave was not deemed safe for entry, efforts were made to assess the cave without entering (Biologic 2023a).

5.4.3 Local habitat

Suitable foraging and dispersal habitat for the Ghost Bat is present within the Wetland, Major Drainage Line, Medium Drainage Line, Drainage Area/ Floodplain, Stony Plain, Hillcrest/Hillslope and Gorge/Gully habitats present within the Activity Area and/or 500 m buffer (Table 5-5; Figure 5-10).

There are no suitable Ghost Bat caves present within the Activity Area or 500 m buffer; however, there are at least 42 suitable caves within 12 km of the Activity Area (Table 5-6). Caves have been categorised by external consultants based on structural characteristics and frequency / evidence of use in alignment with Bat Call WA (2021a) categorisation definitions (see Appendix 4).

The closest cave to the Activity Area is cave CMIN-02 which is a Category 4 cave located approximately 1.5 km south of the Activity Area. There is one Category 2 cave within 12km of the Activity Area (CMIN-03; currently considered critical roosting habitat; with further longer term investigations ongoing), which occurs approximately 10.3 km south of the Activity Area (Figure 5-13; Biologic 2023a, Astron 2024). Given this cave occurs within 12 km of the Activity Area, all of the potentially suitable habitats present within the Activity Area are considered critical foraging and dispersal habitat for the Ghost Bat (Bat Call 2021a). There is no critical breeding habitat present within either the Activity Area or 500 m buffer.

Table 5-5: Ghost Bat Habitat

Habitat Type	Extent within Activity Area (ha; extent that may be cleared)	Extent within 500m buffer (ha)
Critical habitat		
Wetland	7.1	0.6
Major Drainage Line	17.6	57.9
Medium Drainage Line	0.3	1.2
Drainage Area/ Floodplain	25.4	37.5
Stony Plain	0.08	24.7
Hillcrest/Hillslope	21.1	103.0
Gorge/Gully	0	3.0
Total critical foraging and dispersal habitat	**71.6 ha**	**227.9 ha**

Table 5-6: Suitable Ghost Bat caves and evidence of use within 12 km of the Activity Area

Cave ID	Roost classification	Description	Distance from Activity Area	Evidence of use by Ghost Bats
CMIN-03	Category 2	Ghost Bat scats recorded in 2011; No evidence of use recorded during recent monitoring surveys	10.3 km south south-west	Yes Evidence of Ghost Bats recorded (scats)
CMN-01	Category 4	Flat floor-slope, north-west facing and semi-exposed cavern; 4 m wide x 2 m high x 40 m depth, one chamber; Potential Night Roost for Ghost Bat	4.4 km south	No
CMN-02	Category 3	Wide open entrance. Four internal chambers (Main chamber 2.5 m high x 7 m wide x 25 m deep, first right chamber 1.8 m high x 2 m wide x 18 m deep, second right chamber 2 m high x 2 m wide x 6+ m deep, End chamber 5+ m high x 6 m wide x 6 m deep with a continued cavity 5+ m deep x 0.3 m high) Six ghost bats observed in 2023, 50-100 ghost bat scats recorded in 2023-2024. Long-term monitoring equipment did not detect any evidence of breeding or usage as a maternity cave. Likely used as a transitionary roost, locally important in the dispersal of ghost bat	3.9 km south-west	Yes Six ghost bats observed in 2023, 50-100 ghost bat scats were recorded in 2023-2024. Long-term monitoring equipment did not detect any evidence of breeding or usage as a maternity cave. Likely used as a transitionary roost, locally important in the dispersal of ghost bats.
CMN-03	Category 4	Wide open entrance. One internal chamber; 1 m high x 1.5 m wide x 12 m deep. South facing, sheltered overhang, 10 m wide x 3 m high x 12 m depth, one chamber No evidence recorded	5.5 km south	No evidence recorded

Cave ID	Roost classification	Description	Distance from Activity Area	Evidence of use by Ghost Bats
CMN-05	Category 4	Flat floor, south-facing, exposed, with wide open entrance. One internal chamber 0.7 m high x 5 m wide x 5 m deep No records	4.8 km south	No records
CMN-06	Category 4	Incline floor-slope, south-west facing, semi exposed, wide-open entrance. One internal chamber; 3.5 m high x 6 m wide x 9 m deep No records	6.8 km south	No records
CMN-07	Category 4	Flat floor-slope, north-east facing, sheltered, wide open entrance. One internal chamber; 4 m high x 3 m wide x 8 m deep No records	4.8 km south	No records
CMN-08	Category 4	Flat floor-slope, north-west facing and semi exposed overhang - 3 m wide x 2m high x 7 m depth. Two chambers. Potential Night Roost for Ghost Bat	4.4 km south	No records
CMN-09	Category 4	Incline floor-slope, west facing, wide open entrance with three internal chambers, 5 m wide x 2 m high x 12m depth Raised humidity.	4.2 km south	No records
CMNY.01	Category 4	East facing exposed overhang, wide entrance (4 m x 2 m), one internal chamber; 2 m high x 4 m deep	3.2 km south-west	No evidence of use
CMNY.02	Category 4	Upper-slope, exposed overhang. Entrance dimensions 3.5 m x 1.5 m.	2.3 km west south-west	No evidence of use
CMNY.03	Category 4	5m wide entrance. One internal chamber; 1.5 m high x 2 m deep.	4.2 km west south-west	No evidence of use
CMNY.04	Category 4	Wide overhang (12 m wide entrance), one internal chamber; 4 m high x 3 m deep.	4.4 km west south-west	No evidence of use

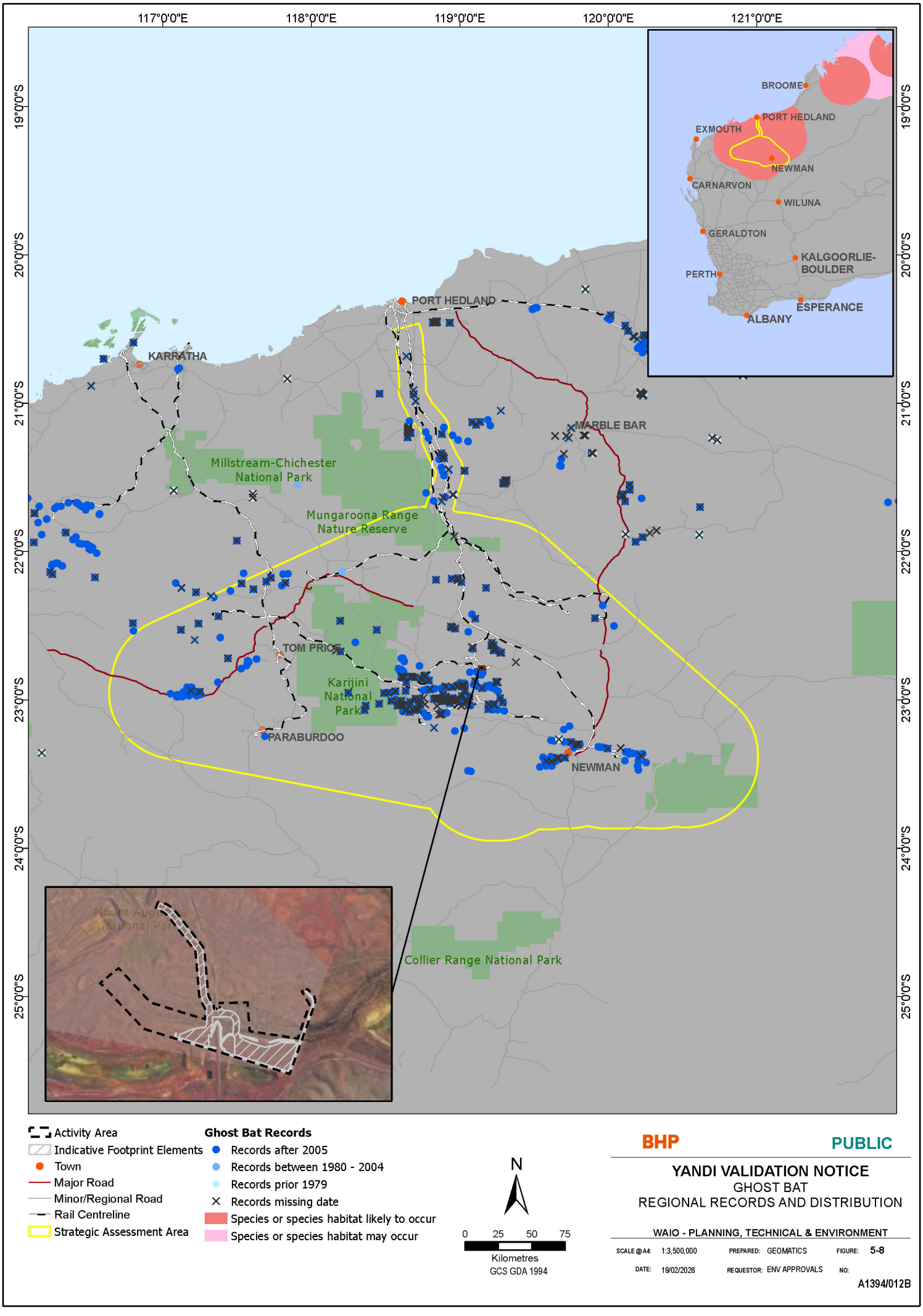
Cave ID	Roost classification	Description	Distance from Activity Area	Evidence of use by Ghost Bats
CMNY.05	Category 3	Narrow entrance. One internal chamber; 1.9 m high x 5 m wide x 12 m deep. Raised humidity.	3.6 km south-west	Yes Ghost Bat scats present (50-100), bat smell, microbats present.
CMNY.06	Category 4	Incline floor-slope, north-east facing, exposed, wide open entrance. One internal chamber; 1.5 m high x 7 m wide x 10 m deep.	3.9 km south-west	No evidence of use
CMIN-01	Category 4	South/ West, sheltered cavern, 1.5 m wide x 2.5 m high x 20 m depth, 2 chambers, 2.5m chamber height	5.7 km south	No evidence of use
CMIN-02	Category 4	Sheltered southeast overhang with two chambers, 4.5 m wide x 4.5 m high x 10 m depth	1.5 km south	No evidence of use
CBKA-01	Category 4	North/ West sheltered cavity with one chamber, 4.3 m wide x 1.7 m high x 15.2 m depth	8.8 km northwest	No evidence of use
CBKA-03	Category 3	Deep cave with high roof and relatively stable microclimate, west facing sheltered cavity with one chamber, 8.9 m wide x 2.5 m high x 11.8 m depth.	8.9 km north	No evidence of use
CBKA-04	Category 4	West facing sheltered cavity with one chamber and relatively stable microclimate, 8.9 m wide x 2.5 m high x 11.8 m depth	8.9 km northwest	No evidence of use
CMAR-26	Category 3	North/ West sheltered cavity, wide entrance 12 m wide x 4 m high	11 km north	No evidence of use
CMAR-18	Category 3	West sheltered cavity, entrance 4.5 x wide x 1 m high	9.5 km northwest	No evidence of use
CMAR-19	Category 3	East facing sheltered cavity with one chamber, 3.5 m wide x 0.75 m high x 20 m depth	9.5 km northwest	No evidence of use
CMAR-38	Category 4	Limited information available	11 km north	No evidence of use

Cave ID	Roost classification	Description	Distance from Activity Area	Evidence of use by Ghost Bats
CMN-13	Category 4	South facing semi exposed overhang with two chambers, 6 m wide x 1.2 m high x 15 m depth	3.5 km south-east	Yes Scats recorded (Old - 6mths to 3yrs)
CMN-14	Category 4	South facing semi exposed overhang with three chambers, 8 m wide x 2 m high x 10 m depth	3.6 km south-east	Yes Scats recorded (Old - 6mths to 3yrs)
CMN-15	Category 4	North facing semi exposed overhang, one chamber, 15 m wide x 2 m high x 6 m depth	3.8 km south-east	Yes 10 fresh (<1mth) scats recorded
CMN-16	Category 4	North facing semi exposed cavity, one chamber, 0.5 m wide x 25 m high x 15 m depth	3.8 km south-east	No evidence recorded
CMN-17	Category 4	South facing semi exposed overhang, 5 m wide x 2 m high x 8 m depth	4.0 km south-east	No evidence recorded
CMN-18	Category 4	North/ East facing semi exposed overhang, 2.5 m wide x 0.6 m high x 15 m depth	3.9 km south-east	No evidence recorded
CMN-19	Category 4	North facing semi exposed overhang, 2 m wide x 0.5 m high x 15 m depth	4.1 km south-east	No evidence recorded
CMN-20	Category 4	South facing semi exposed overhang, 2 m wide x 1.5 m high x 5 m depth	3.6 km south-east	No evidence recorded
CMN-21	Category 4	West facing semi exposed cavity	3.8 km south-east	No evidence recorded
CMN-22	Category 4	North/ West facing semi exposed overhang, 10 m wide x 3.5 m high x 20 m depth Six chambers, highest is 10m high	4.4 km south-east	No evidence recorded
CMN-23	Category 4	North/ East facing exposed overhang, 3 m wide x 2 m high x 10 m depth Two chambers, highest is 1.5m	4.4 km south-east	No evidence recorded

Cave ID	Roost classification	Description	Distance from Activity Area	Evidence of use by Ghost Bats
CMN-24	Category 4	North/ East semi exposed overhang, 3 m wide x 2 m high x 20 m depth Two chambers, highest 1.5m	4.4 km south-east	No evidence recorded

5.4.4 Ghost Bat records

The Ghost Bat has not been recorded within the Activity Area or the 500 m buffer; however, there are over 100 regional Ghost Bat records within 5-30 km of the Activity Area. The closest record is approximately 2.7 km south of the Activity Area which includes a scat record in Breakaway/Cliff habitat (Figure 5-10; Biologic 2025). A further two records occur 3-4 km south west of the Activity Area at Caves CMN-02 and CMNY-05 where 50-100 Ghost Bat scats were recorded at each cave respectively, and scats were also recorded at three caves located within Yandicoogina Gorge, approximately 3-4 km south east of the Activity Area (Table 5-6; Figure 5-10; Astron 2024).



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GHOST BAT
REGIONAL RECORDS AND DISTRIBUTION

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

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DATE: 19/02/2026 REQUESTOR: ENV APPROVALS NO:

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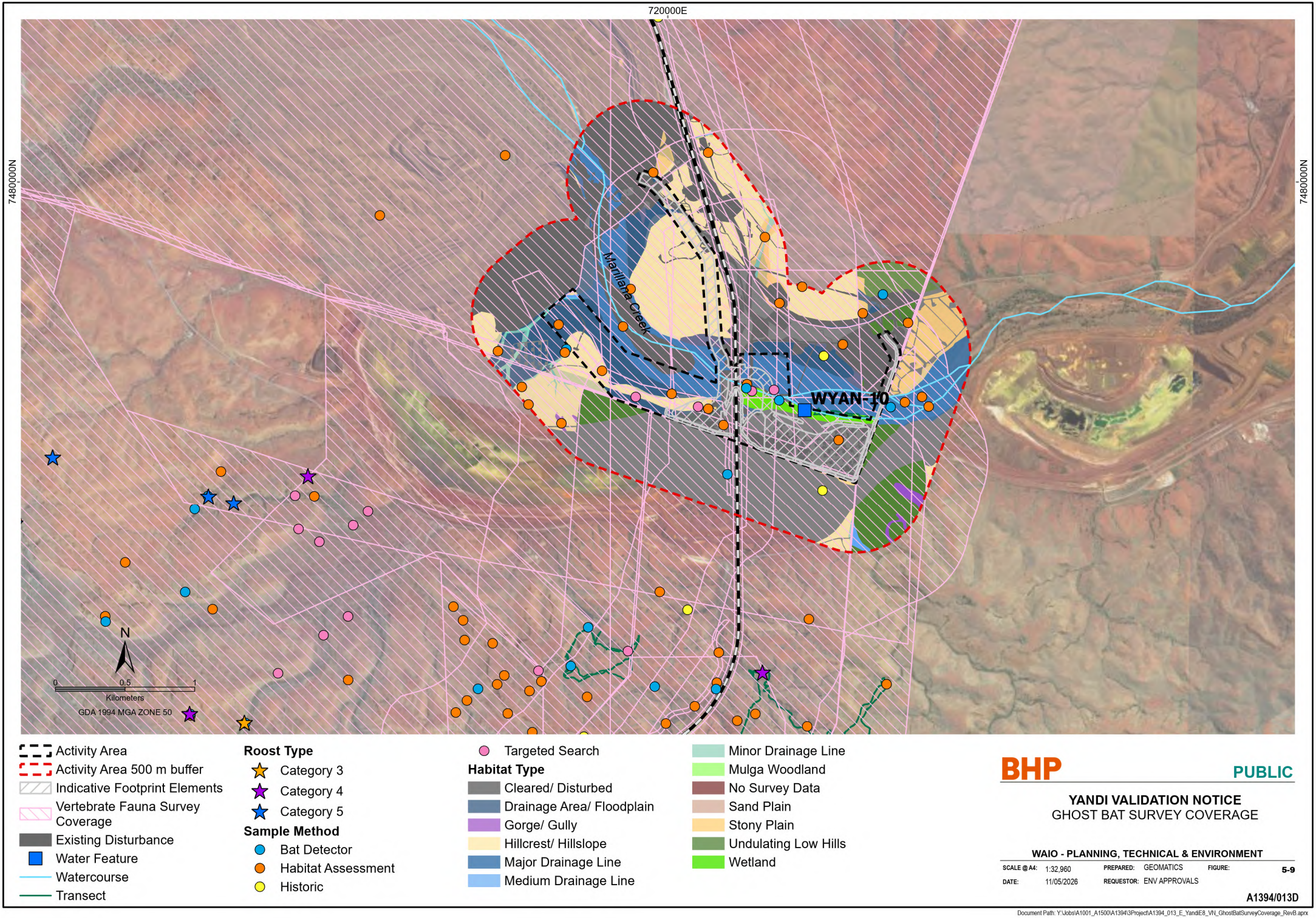

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GHOST BAT SURVEY COVERAGE

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

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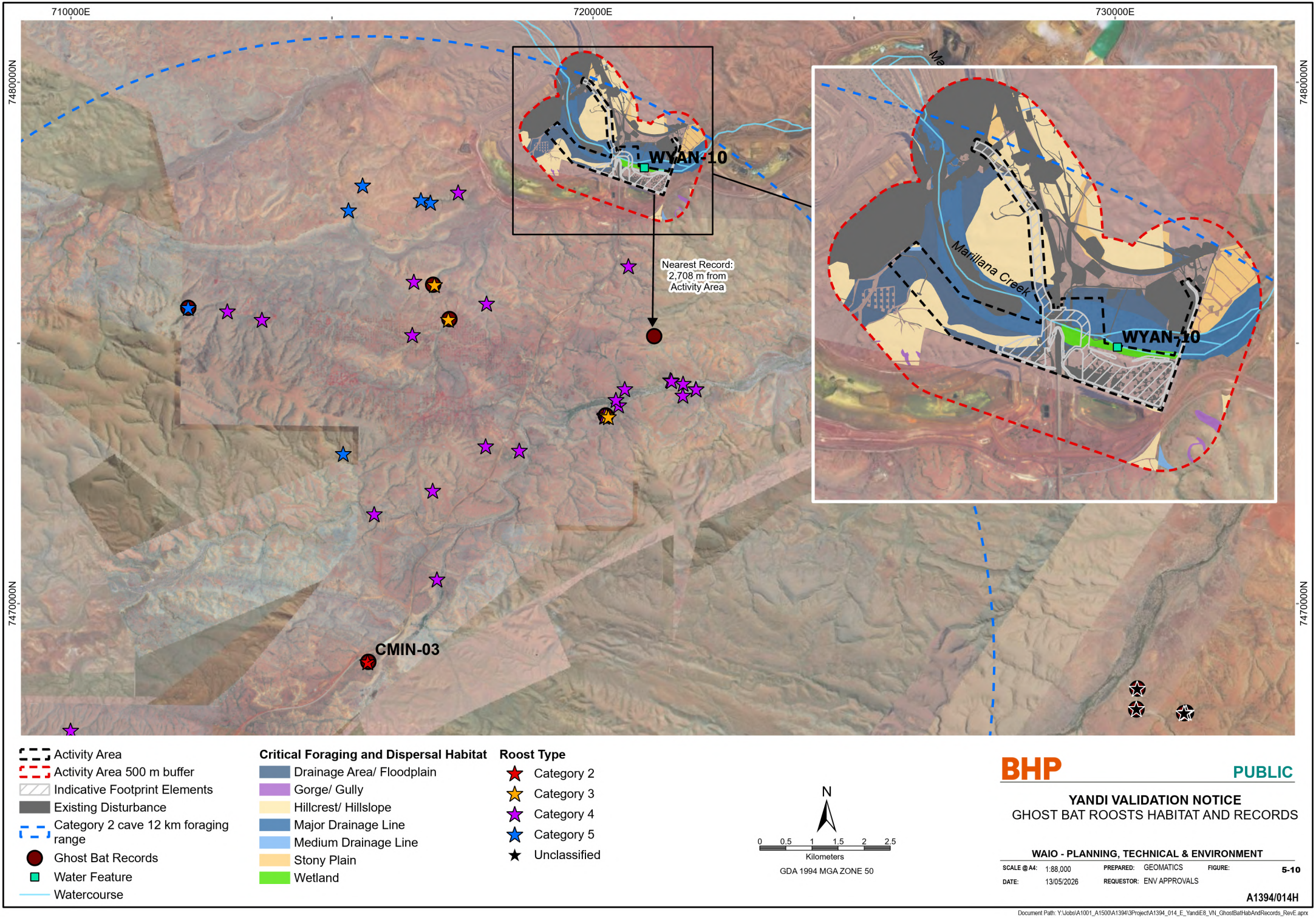

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GHOST BAT ROOSTS HABITAT AND RECORDS

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5.4.5 Impact assessment

The potential direct and indirect impacts to Ghost Bats from the Activity are outlined below. Impacts to the Ghost Bat from the Activity are considered low and do not result in a Notifiable Trigger.

Habitat loss

The key potential impact to the Ghost Bat arising from the Activity is loss of habitat. Up to 72 ha of critical foraging and dispersal habitat, including Wetland, Major Drainage Line, Medium Drainage Line, Drainage Area/ Floodplain, Stony Plain and Hillcrest/Hillslope habitats present within the Activity Area may be disturbed (Figure 5-10). There are no caves and no critical breeding habitat within the Activity Area or 500m buffer.

Clearing for the Activity is unlikely to result in additional habitat fragmentation given the existing mining operations and high level of disturbance that already occurs within the Activity Area.

A further 228 ha of critical and supporting habitat will remain throughout the 500 m buffer. Given the lack of evidence of a residing population or colony, and no records of transient or dispersing Ghost Bats within the Activity Area or 500 m buffer, habitat loss associated with the Activity is unlikely to result in a residual impact to the species.

Habitat degradation from changes to hydrological regimes

There are no groundwater dependent pools present in the Activity Area or within the modelled drawdown area; however, critical habitat for the Ghost Bat that contains GDV is located within the groundwater drawdown contours of the Activity to the east of the Activity Area and includes Wetland and Major and Medium Drainage Line fauna habitats. Whilst it is possible that some of the critical and/or supporting habitat for the Ghost Bat, associated with GDV, could experience a decline in condition due to groundwater drawdown; the proposed surplus water discharge along Marillana Creek is predicted to counterbalance the drawdown and maintain groundwater levels within this area. See Section 5.2.5 for further discussion of potential impacts to fauna habitat from altered hydrological regimes. Residual impacts to critical or supporting habitat for the Ghost Bat associated with groundwater drawdown from the Activity are therefore unlikely.

Alterations to landforms and construction of infrastructure can lead to altered surface water drainage patterns which in turn may cause flooding and erosion in some areas and, rain-shadow effects in other areas. With the implementation of surface water management measures, changes to surface water drainage will be minimised and are not predicted to result in residual impacts to habitats.

Disturbances from increased dust, light, noise and vibration

An increase in noise, and vibration in proximity to Ghost Bat roosts has the potential to disturb Ghost Bats that may be present, causing flushing from roosts and temporary or permanent abandonment, or by altering the foraging behaviour of nocturnal species such as the Ghost Bat. Given that the Ghost Bat has not been recorded within the Activity Area or 500 m buffer and the closest cave is 1.5 km away, impacts associated with increased dust, light, noise, and vibration are expected to be minimal.

Artificial light has the potential to indirectly impact Ghost Bats by altering nocturnal foraging behaviours and/or potentially restricting the use of roosts. The potential indirect impacts to Ghost Bats associated with artificial light related to active mine pits are considered negligible given the distance of the Activity Area to the potential Category 2 cave (10.3 km). Artificial light from the Activity is not predicted to result in residual impact to the species.

Vegetation clearing and vehicle movements have the potential to result in an increase in airborne particulate matter. Dust can indirectly affect the Ghost Bat by altering the condition of vegetation, causing habitat degradation and by interfering with vision and the ability to capture prey, however the available information on potential dust impacts on Ghost Bat is very limited. As the rate of mining and vehicle movements will be the same as for the existing operation, dust levels are not predicted to increase above existing levels.

Habitat modification from fire and weeds

Hot work activities on site and vehicle movements could increase the risk of fire and spread of weeds, respectively. Fire and weed encroachment have the potential to degrade Ghost Bat critical and or supporting habitat within the Activity Area and within 500 m of the Activity Area; however, with standard BHP fire management and weed control practices, the potential for increased risk of fire and habitat degradation due to weeds as a result of the Activity, are considered low and are not predicted to result in residual impacts to the species.

Feral predators and cane toads

Feral predators such as feral cats or foxes may prey on the Ghost Bat (TSSC 2016a). With standard BHP feral cat management practices and given the absence of fox records in the Activity Area, the potential impact of feral cats or foxes on the Ghost Bat is considered low. BHP is also currently conducting research into feral cat predation on Ghost Bats at roosts, with several roosts in the vicinity of the Activity Area monitored as part of this program.

The future predicted spread of the cane toad into the Pilbara bioregion, and potentially Yandi may have negative impacts to the Ghost Bat population. There is potential for cane toads to be introduced to areas via vehicles or equipment; however, it is considered unlikely that cane toads will be introduced to Yandi as travel to and from high-risk areas such as the Kimberley are not foreseen.

Overall, the Activity is not predicted to result in residual impacts to the species as a result of feral predators or cane toads.

Vehicle and infrastructure interactions

Interaction of fauna with vehicle and machinery movements have the potential to result in fauna strike, causing injury or mortality to fauna individuals. Ghost Bat are understood to fly low to the ground and may therefore be vulnerable to vehicle strike. The risk of interaction with vehicles is greatest where roads occur in proximity to known roosts or critical foraging habitat for the species. Given the Activity Area is at least 10.3 km from the potential Category 2 cave, there will be no vehicle movement in proximity to the caves associated with the Activity and therefore the risk of vehicle interaction is considered low. On this basis, infrastructure and vehicle interactions are not predicted to result in a residual impact to Ghost Bat.

Ghost Bats are known to become entangled in barbed wire due to their low elevation flying pattern (Armstrong and Anstee 2000). The use of barbed wire fencing within the Activity Area will be avoided as far as practicable, except where required by legislation. In these instances, reflectors will be installed on barbed wire fencing to deter bat interaction. On this basis, barbed wire fencing potentially used in the course of the Activity is not predicted to result in residual impact to Ghost Bat.

5.4.6 Summary

The Ghost Bat Notifiable Action triggers are not applicable as there are no records of Ghost Bat within the Activity Area or within the 500 m buffer. BHP considers the Activity will meet the PMO to minimise loss of critical foraging and dispersal habitat for the Ghost Bat. As a result, the PMO will be achieved.

5.5 Greater Bilby

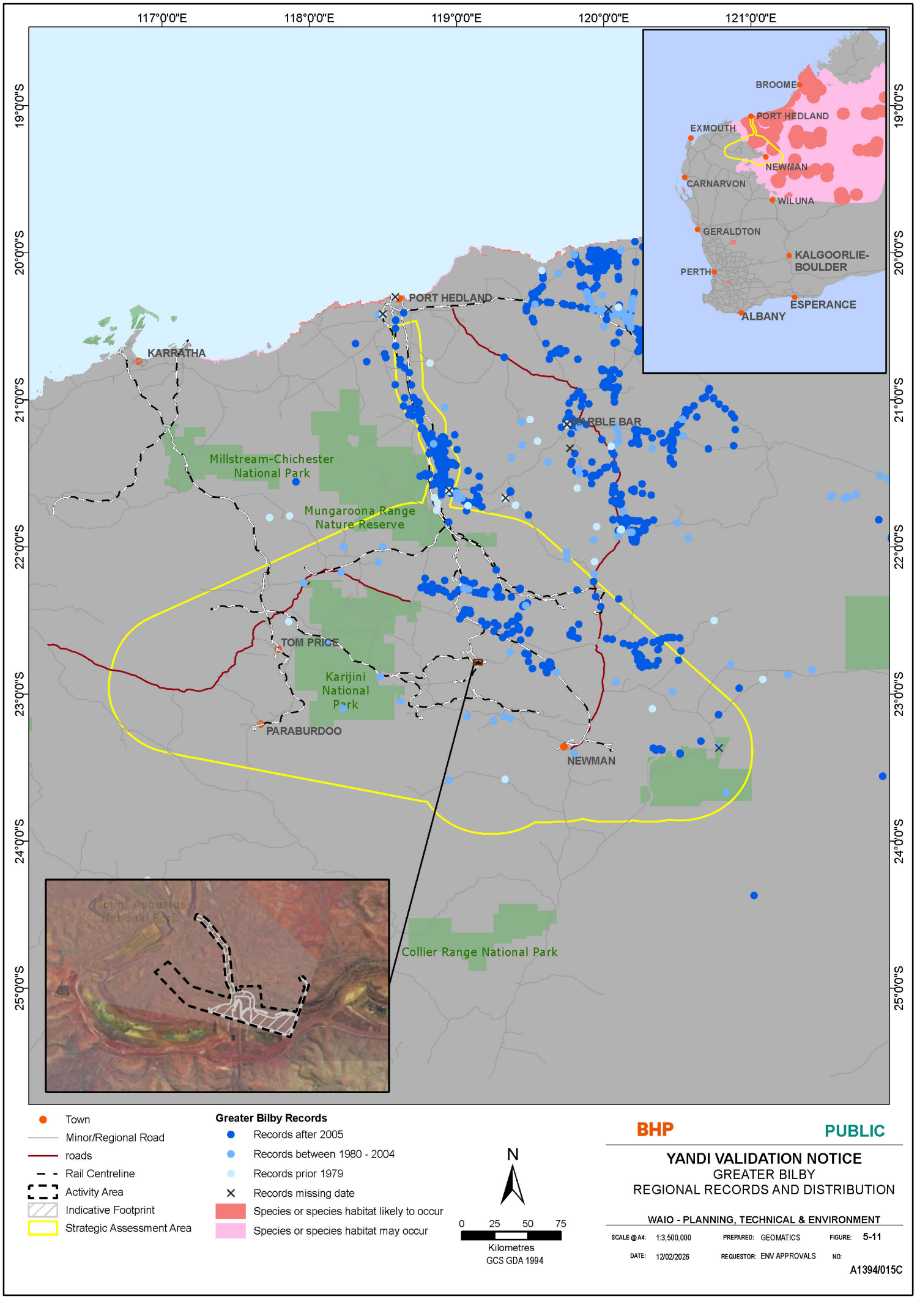
The following sections provide background information to demonstrate that Notifiable Action Triggers for Greater Bilby are not met. The Program Matter Objective for the Greater Bilby is "*to support the long-term persistence and viability of the Greater Bilby within the Strategic Assessment Area"*. The assessment outlines the potential impacts on the Greater Bilby and demonstrates how the Program Matter Objective for this species will be achieved.

5.5.1 General species information

The Greater Bilby is listed under the EPBC Act as 'Vulnerable'. Within the Pilbara bioregion, the Greater Bilby exists along the Fortescue River and northeast to Shay Gap (DCCEEW 2023b) (see Figure 5-11). The extent of occurrence for the Greater Bilby is thought to have remained relatively stable over the last 20 years. This mammal was common throughout most of its range until the early 1900s when there was a sudden and widespread collapse (Abbott 2001; Johnson 2008). This collapse and range contraction has been attributed to predation from cats and foxes, habitat destruction from introduced herbivores and changed fire regimes. Feral cats have been linked to the reduced success of reintroduced populations (DCCEEW 2023b).

The Greater Bilby is a highly mobile species with home ranges varying between 1 km^2 to 3 km^2 (DCCEEW 2023b). The movement patterns of the Greater Bilby are thought to be influenced by resource availability (Strahan 1995). The species may also persist in areas of low productivity (Southgate and Carthew 2006, Southgate *et al*. 2007 and Southgate *et al*. 2018).

The presence of the Greater Bilby is strongly associated with substrate type as it is generally restricted to areas that contain suitable burrowing habitat, such as sandy loam plains, alluvial creeks, dunes and sand ridges (TSSC 2016b). Within the Pilbara region the species is sparsely distributed and often associated with level or undulating plains including watercourses and dune systems, composed of cracking clay, soil or sand that allows burrowing, with vegetation consisting of hummock grassland (spinifex), with low shrubland, usually *Acacia* dominated (Dziminski and Carpenter 2017). The Greater Bilby has also been recorded from mulga woodlands and stony plain habitats in the Abydos Plains region further north in the Pilbara. Food sources for the Greater Bilby include, but are not limited to, grass, sedge seeds, ants, fungi, termites, beetles, insect larva and spiders (Dziminski and Carpenter 2017, Southgate *et al*. 2018).



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GREATER BILBY
REGIONAL RECORDS AND DISTRIBUTION

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DATE:	12/02/2026	REQUESTOR:	ENV APPROVALS	NO:	

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5.5.2 Studies and sampling effort

At least five contemporary surveys have targeted the Greater Bilby (Table 4-1), as well as numerous historical surveys (Appendix 2). Survey coverage for Greater Bilby is shown in Figure 5-12. Sampling methods for Greater Bilby within the Activity Area and 500 m buffer include habitat assessments and targeted Bilby plots (Spectrum Ecology 2026; Biologic 2023a, 2025; Astron 2024, 2023; Figure 5-12). Targeted searches and/ or transects also included searching for signs of Bilby and so have been included in Figure 5-12.

5.5.3 Local habitat

The Activity Area falls within the current distribution of the Greater Bilby, whereby the species or species habitat may occur (Figure 5-11); however, based on recent and historical surveys, there are no records of Greater Bilby within 26 km of the Activity Area (Figure 5-11 and Figure 5-13). The Drainage Area/Floodplain, Sand Plain, Stony Plain and Drainage Line habitats within the Activity Area and/or 500m buffer do provide supporting habitat for the species; however, these are considered sub-optimal due to the lack of connected sandy soils, soils that are hard and/or stony and which provide limited burrowing availability, and given the fire history and high level of existing disturbance (Astron 2023; Biologic 2023a, 2025; Spectrum Ecology 2025).

There is approximately 43 ha of supporting habitat present in the Activity Area, and 121 ha of supporting habitat present within the 500 m buffer (Table 5-7; Figure 5-13).

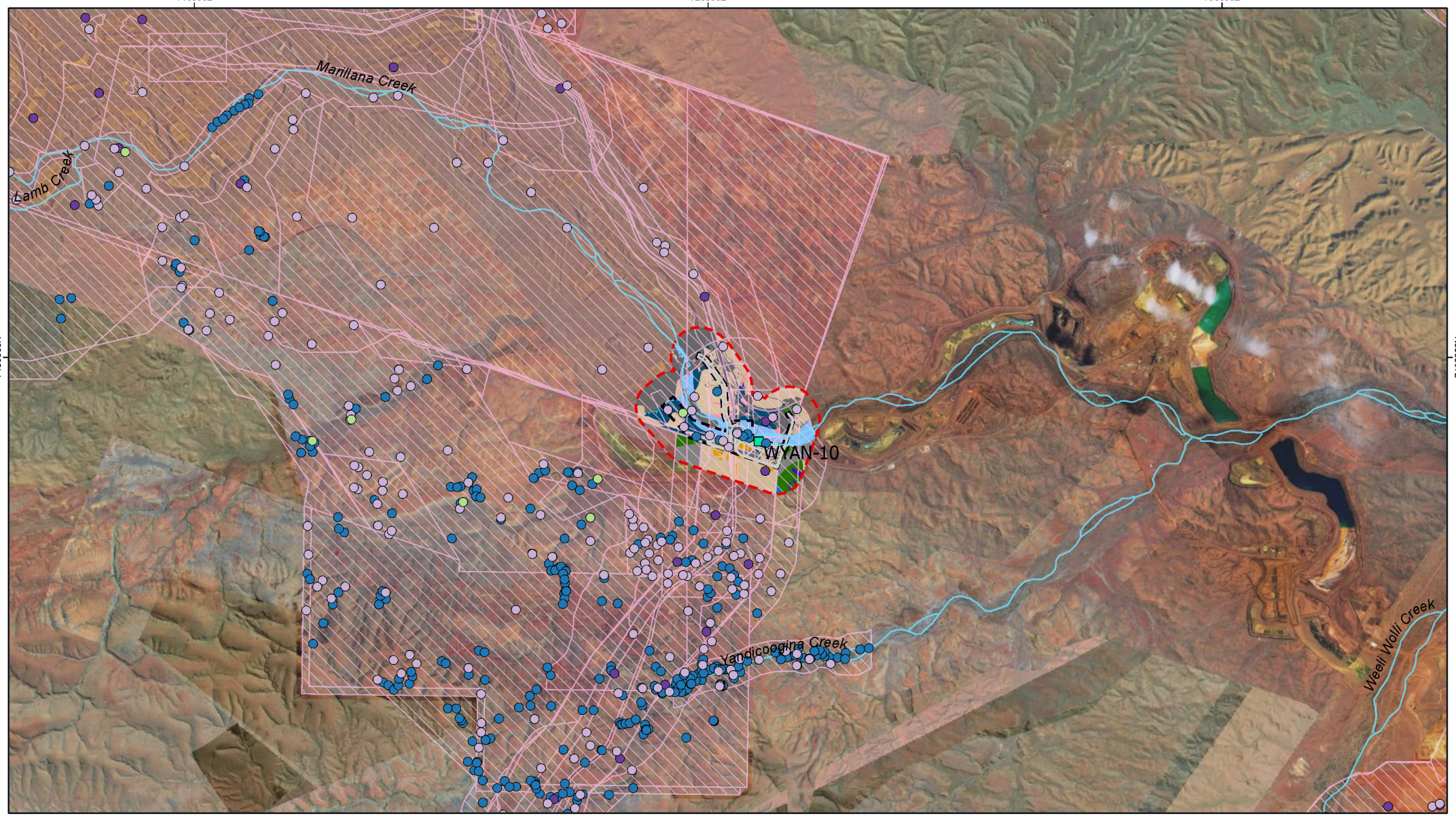
Table 5-7: Greater Bilby habitat

Habitat Description	Extent within Activity Area (ha; extent that may be cleared)	Extent within 500m buffer
Supporting habitat		
Drainage Area/Floodplain	25.4	37.5
Stony Plain	0.08	24.7
Sand Plain	0	0.06
Major Drainage Line	17.6	57.9
Medium Drainage Line	0.3	1.2
Total supporting habitat	**43.4 ha**	**121.4 ha**

5.5.4 Greater Bilby records

There is no evidence of Greater Bilby individuals or populations within the Activity Area or within the 500 m buffer of the Activity Area. Surveys to date have not recorded any Greater Bilby signs, tracks, scats, diggings or burrows within the Activity Area. Given the lack of records and lack of suitable habitat to support the species, it is considered unlikely that the Greater Bilby occurs within the Activity Area. The nearest record of Greater Bilby is located approximately 26.8 km northeast of the Activity Area (Figure 5-11).

Survey effort relevant to the Activity Area targeting Greater Bilby is shown of Figure 5-8, and the nearest records are shown on Figure 5-7 below.



- Activity Area
- Activity Area 500 m buffer
- Indicative Footprint Elements
- Vertebrate Fauna Survey Coverage
- Existing Disturbance
- Water Feature
- Watercourse

Habitat Type

- Cleared/ Disturbed
- Drainage Area/ Floodplain
- Gorge/ Gully
- Hillcrest/ Hillslope
- Major Drainage Line
- Medium Drainage Line
- Minor Drainage Line
- Sand Plain
- Stony Plain
- Undulating Low Hills
- Wetland

Sample Method

- Bilby Plot
- Habitat Assessment
- Historic
- Targeted Search

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GREATER BILBY SURVEY COVERAGE

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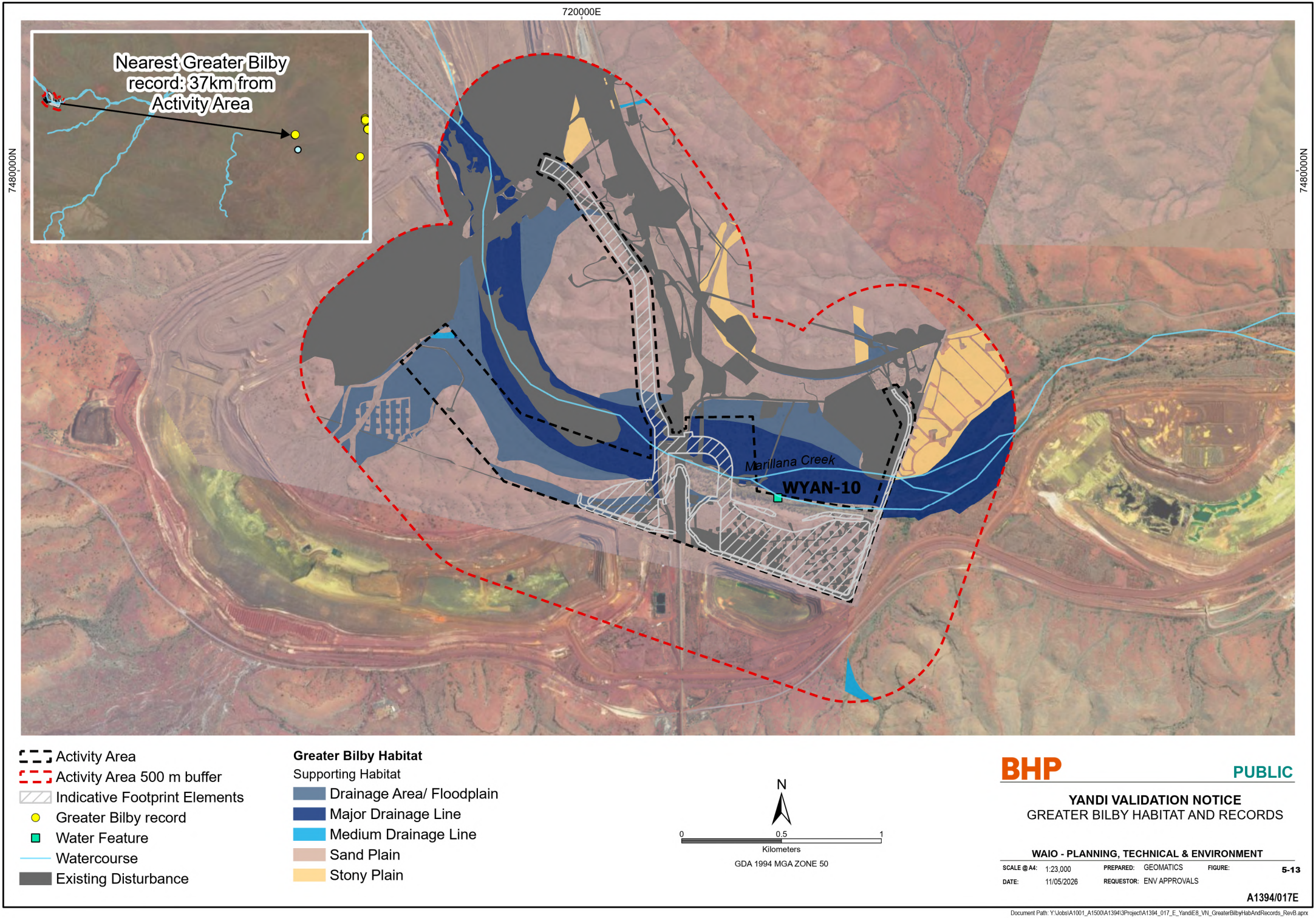

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GREATER BILBY HABITAT AND RECORDS

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5.5.5 Impact assessment

The potential direct and indirect impacts to the Greater Bilby from the Activity (see section 2) are considered below. Impacts to the Greater Bilby from the Activity are considered low and do not result in a Notifiable Trigger.

Habitat loss

The Activity may result in the loss of up to 43.4 ha of supporting habitat for Greater Bilby; however, these habitats are considered sub-optimal due to the lack of old growth Triodia, existing disturbance and fire history. A further 121.4 ha of supporting habitat is present within the 500 m buffer.

The species is considered unlikely to occur with the closest records being over 30 km away. Given the lack of records of Greater Bilby within the Activity Area or within a 500 m buffer of the Activity Area, the proposed disturbance is not predicted to have a residual impact on the species.

Habitat degradation from changes to hydrological regimes

No impacts to supporting habitat for the Greater Bilby are predicted as a result of groundwater drawdown given that none of the supporting habitats within the Activity Area or 500 m buffer contain groundwater dependant values.

Alterations to landforms and construction of infrastructure can lead to altered surface water drainage patterns which in turn may cause flooding and erosion in some areas and, rain-shadow effects in other areas. With the implementation of surface water management measures, changes to surface water drainage will be minimised and are not predicted to result in residual impacts to Greater Bilby habitat.

Disturbances from increased dust, light, noise and vibration

Given that there are no records of Greater Bilby within 30 km of the Activity Area and the species is considered unlikely to occur, there will be minimal disturbances to the species from increased dust, light, noise or vibration.

Habitat modification from fire and weeds

Fire and weed encroachment have the potential to degrade Greater Bilby foraging habitat, which can result in population decline (Bradley et al. 2015). Hot work activities onsite, vegetation clearing, and the introduction and increased vehicle movements may increase the risk of fire and spread of weeds, which may result in the degradation of Greater Bilby supporting habitats within the Activity Area. Given the lack of records within the Activity Area and the 500 m buffer, and the distance to the nearest records of the species, the potential risk of impact to Greater Bilby from habitat degradation associated with the proposed Activity is considered to be low and unlikely to result in residual impacts to Greater Bilby.

The Activity will be conducted in adherence to standard BHP fire management and weed control practices which will serve to minimise risk associated with the potential introduction of weeds and risk of fire.

Feral predators and cane toads

Feral predators such as feral cats and foxes may prey on the Greater Bilby (TSSC 2016b). Mining Activities have the potential to increase numbers of feral cats and foxes in the area as a result of increased disturbance and activity. However, the Activity is located within an existing mining hub, no increase to camp facilities is proposed, and the Activity will adhere to BHP's standard feral cat management practices. Therefore, no increase in feral predators is expected to occur as a result of the Activity.

The future predicted spread of the cane toad into the Pilbara bioregion, and potentially Yandi may have negative impacts to the Greater Bilby. There is potential for cane toads to be introduced to areas via vehicles or equipment; however, it is considered unlikely that cane toads will be introduced to Yandi as travel to and from high-risk areas such as the Kimberley are not foreseen.

The implementation of the Activity is not expected to result in a residual impact to Greater Bilby given that the species does not occur and habitat is considered sub-optimal at best.

Vehicle and infrastructure interactions

Greater Bilby are susceptible to mortality from vehicle strikes (Bradley *et al.* 2015). The Activity will result in the construction of additional haul roads and an increase in vehicle movements, which has the potential to increase the risk of fauna-vehicle interactions. However, given that the Activity Area is located within an operational mining hub and given the closest Greater Bilby records are over 26 km away, impacts to the species from vehicle strike are considered to be low.

5.5.6 Summary

The Greater Bilby Notifiable Action triggers are not applicable as there are no records of Greater Bilby within the Activity Area or within the 500 m buffer of the Activity Area. The Activity is not predicted to result in residual impacts to Greater Bilby through either direct or indirect impacts to Greater Bilby supporting habitat. No critical habitat will be impacted.

5.6 Pilbara Leaf-nosed Bat

The following sections provide background information to demonstrate that Notifiable Action Triggers for Pilbara Leaf-nosed Bat are not met. The Program Matter Objective for the Pilbara Leaf-nosed Bat is "*to support the long-term persistence and viability of the Pilbara Leaf-nosed Bat within the Strategic Assessment Area"*. The assessment outlines the potential impacts on the Pilbara Leaf-nosed Bat and demonstrates how the Program Matter Objective for this species will be achieved.

5.6.1 General species information

The Pilbara Leaf-nosed Bat is listed as 'Vulnerable' under the EPBC Act and occurs over an approximate area of 120 million hectares (Eco Logical 2014) and is restricted to the Pilbara bioregion of Western Australia. The Pilbara population is regarded as representing a single interbreeding population comprising multiple colonies (TSSC 2016c). Individual colonies vary in size from 10 individuals to 20,000 individuals, although the latter is exceptional (Armstrong 2001; Ecologia Environment 2005, 2006a, 2006b). The size of the Pilbara Leaf-nosed Bat population is currently unknown (TSSC 2016c).

The most updated conservation advice (Bat Call WA 2021b) indicates there are 48 confirmed permanent day roosts (including maternity roosts) with 38 of these in banded iron formations in the Hamersley Ranges and eastern Pilbara, and six in disused underground gold and copper mines of the eastern Pilbara. Figure 5-14 illustrates the regional records and distribution of Pilbara Leaf-Nosed Bat. The species' area of occupancy in the Pilbara region has been calculated by Woinarski *et al.* (2014) as under 10 km^2.

Pilbara Leaf-nosed Bats roost in undisturbed caves, deep fissures or abandoned mine shafts with a stable warm and humid microclimate because of their poor ability to maintain its heat and water balance (Kulzer et al. 1970; Churchill *et al.* 1988; Jolly 1988; Churchill 1991; Baudinette *et al.* 2000; Armstrong 2001). Caves/abandoned mines with seeps of water, moist wall surfaces and or flooded lower levels are usually of ideal humidity (Bat Call WA 2021b). The species forages within and in the vicinity of roost caves and more broadly along waterbodies with suitable fringing vegetation supporting prey species (TSSC 2016c). Pilbara Leaf-nosed Bats are predicted to travel up to 20 km from roost caves during nightly foraging (Cramer *et al.* 2016b); however, seasonal variation is known to occur, with foraging occurring up to 20 km in the dry season and up to 50 km during the wet season (Bullen 2013).

5.6.2 Studies and sampling effort

At least six contemporary surveys have targeted the Pilbara Leaf-nosed Bat within the Activity Area (Table 4-1), as well as numerous contemporary and historical surveys in the wider area (Appendix 2). Survey coverage and sampling effort for the Pilbara Leaf-nosed Bat is shown in Figure 5-15. Sampling methods for Pilbara Leaf-nosed Bat within the Activity Area and 500 m buffer include habitat assessments (including water and cave feature assessments), targeted searches and/ or transects, and ultrasonic recorders (Spectrum Ecology 2026; Biologic 2025, 2023a; Astron 2024, 2023; Figure 5-15). Where suitable caves or overhangs that may be utilised by the species were located, detailed cave assessments and searches were undertaken to search for evidence of occurrence and determine the likely use of the cave as a roost site. Where a cave was not deemed safe for entry, efforts were made to assess the cave without entering (Biologic 2023a).

5.6.3 Local habitat

The Activity Area falls within the current distribution of the Pilbara Leaf-nosed Bat, whereby the species or species habitat may occur (Figure 5-14).

Suitable habitat for the Pilbara Leaf-nosed Bat includes Wetland, Major and Medium Drainage Lines, Drainage Area/Floodplain Hillcrest/Hillslope, Stony Plain and Gorge/Gully habitats within the Activity Area and/or 500 m buffer.

There is a total of 72 ha of supporting habitat for the Pilbara Leaf-nosed Bat within the present within the Activity Area, and 212.8 ha of supporting habitat present within the 500 m buffer (Figure 5-16 Table 5-8; Astron 2023; Biologic 2023, 2025; Spectrum Ecology 2026). There are no suitable caves for the species present within the Activity Area or 500 m buffer. Potentially suitable caves do occur within 10 km but are all Category 4, with the closest cave being located approximately 1.6 km south of the Activity Area (Figure 5-16). There is no critical habitat for the Pilbara Leaf-nosed Bat within the Activity Area or 500 m buffer (Astron 2023; Biologic 2023a, 2025; Spectrum Ecology 2026).

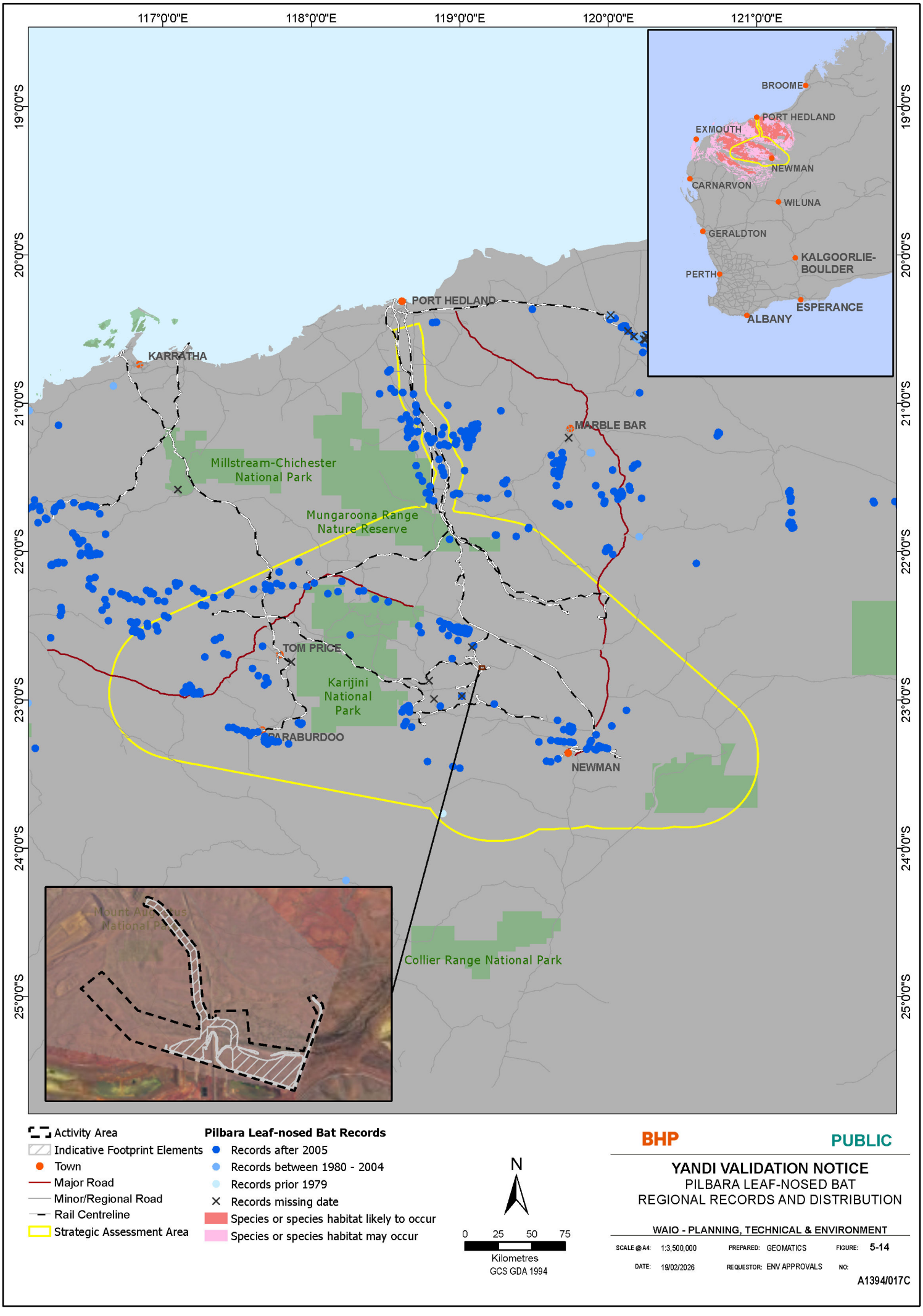
Table 5-8: Pilbara Leaf-nosed Bat habitat

Habitat Type	Extent within Activity Area (ha; extent that may be cleared)	Extent within 500 m Buffer
Supporting habitat		
Wetland	7.1	0.6
Major Drainage Line	17.6	57.9
Medium Drainage Line	0.3	1.2
Drainage Area/ Floodplain	25.4	37.5
Stony Plain	0.08	24.7
Hillcrest/Hillslope	21.2	103.0
Gorge/Gully	0	3.0
Total supporting habitat	**71.7 ha**	**227.9 ha**

5.6.4 Pilbara Leaf-nosed Bat records

The Pilbara Leaf-nosed Bat has not been recorded within the Activity Area to date; however, there are over 1,200 records within 20 km of the Activity Area (Astron 2023; Figure 5-14). The closest record occurs approximately 15.3 km

north of the Activity Area (Figure 5-16; however, the majority of records occur approximately 17-20 km north of the Development Envelope where permanent roosts may occur (Figure 5-14; Astron 2023).



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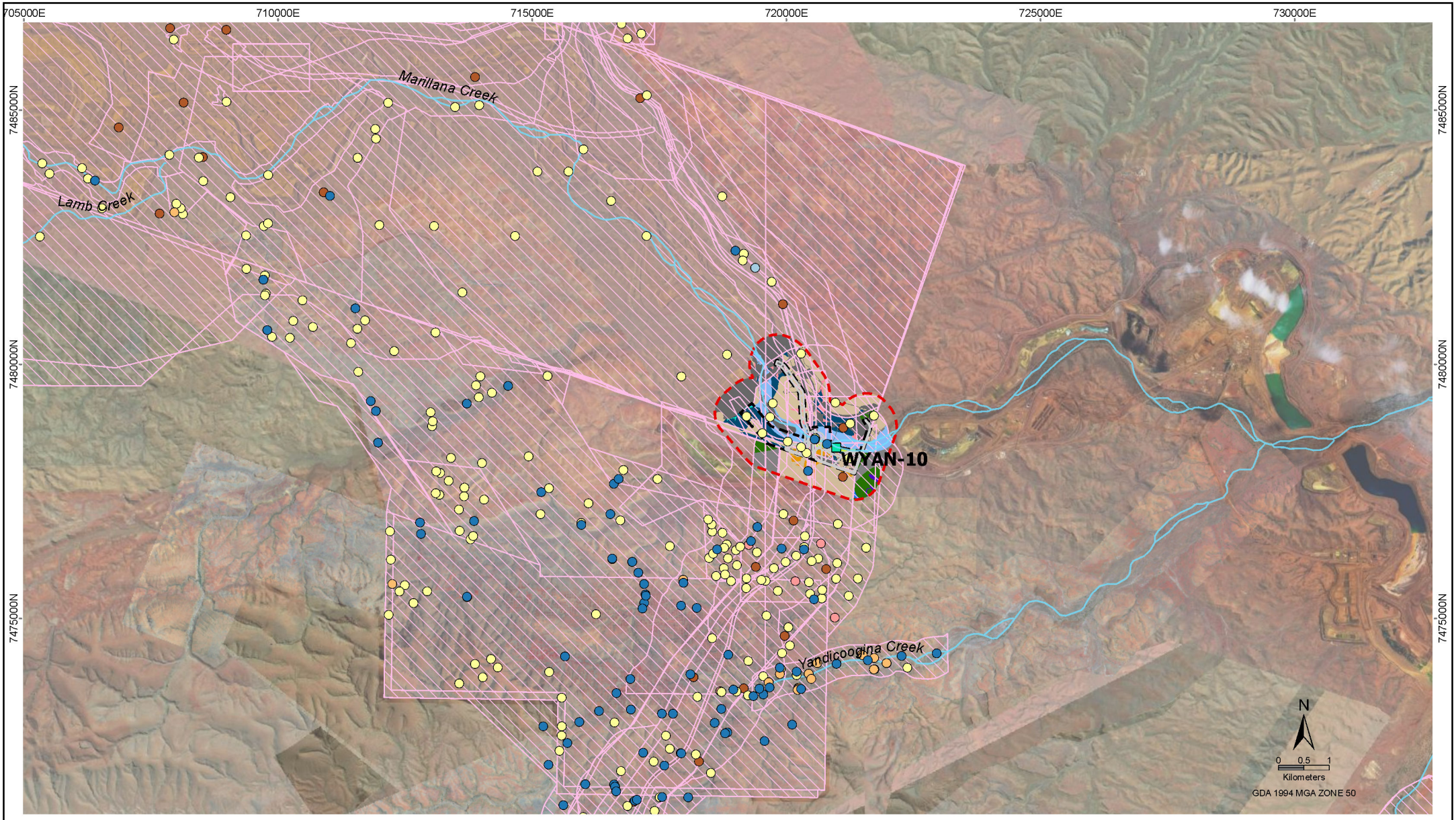
YANDI VALIDATION NOTICE
PILBARA LEAF-NOSED BAT REGIONAL RECORDS AND DISTRIBUTION

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4: 1:3,500,000 PREPARED: GEOMATICS FIGURE: 5-14

DATE: 19/02/2026 REQUESTOR: ENV APPROVALS NO:

A1394/017C



Indicative Footprint Elements
Activity Area
Activity Area 500 m buffer
Vertebrate Fauna Survey Coverage
Existing Disturbance
Water Feature
Watercourse

Habitat Type
Cleared/ Disturbed
Drainage Area/ Floodplain
Gorge/ Gully
Hillcrest/ Hillslope
Major Drainage Line
Medium Drainage Line
Minor Drainage Line
Sand Plain
Stony Plain
Undulating Low Hills
Wetland

Sample Method
Acoustic
Bat Detector
Cave Assessment
Habitat Assessment
Historic
Targeted Search

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YANDI VALIDATION NOTICE
PILBARA LEAF - NOSED BAT
SURVEY COVERAGE

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @A4: 1:100,000 PREPARED: GEOMATICS FIGURE: 5-15
DATE: 12/02/2026 REQUESTOR: ENV APPROVALS

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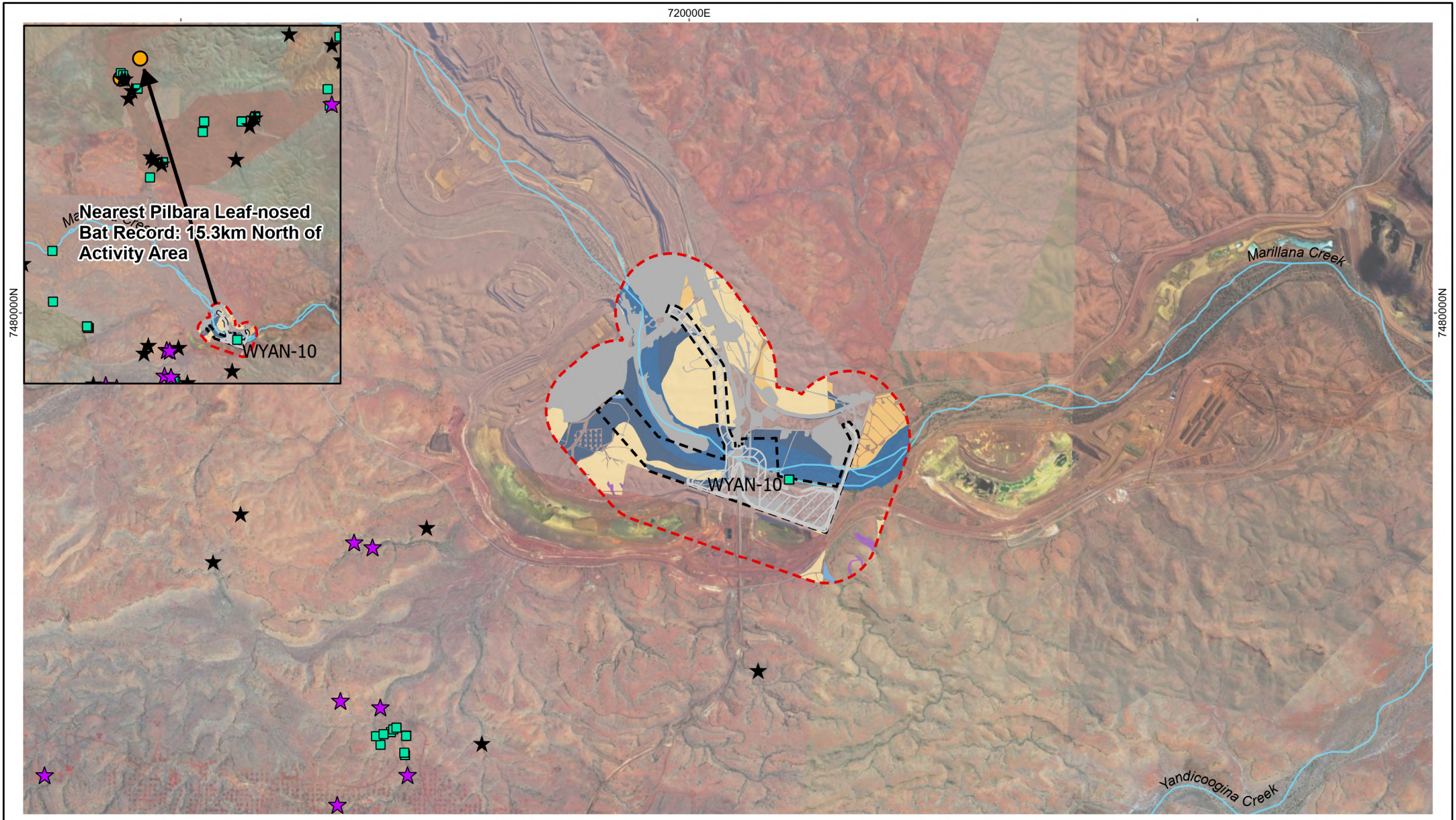

- Activity Area
- Activity Area 500 m buffer
- Indicative Footprint Elements
- Existing Disturbance
- Water Feature
- Watercourse
- Pilbara Leaf-nosed Bat Records

Pilbara Leaf-nosed Bat Roost Type

- Category 4
- Unclassified

Pilbara Leaf-nosed Bat Habitat

Supporting Habitat

- Drainage Area/ Floodplain
- Gorge/ Gully
- Hillcrest/ Hillslope
- Major Drainage Line
- Medium Drainage Line
- Stony Plain

N

0 0.5 1 1.5

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YANDI VALIDATION NOTICE
PILBARA LEAF - NOSED BAT HABITAT AND RECORDS

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4:	1:50,000	PREPARED:	GEOMATICS	FIGURE:	5-16
DATE:	13/05/2026	REQUESTOR:	ENV APPROVALS		

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5.6.5 Impact assessment

The potential direct and indirect impacts to the Pilbara Leaf-nosed Bat from the Activity (see section 2) are considered below. Impacts to the Pilbara Leaf-nosed Bat from the Activity are considered low and do not result in a Notifiable Trigger.

Habitat loss

The key potential impact to the Pilbara Leaf-nosed Bat arising from the Activity is loss of habitat. Up to 72 ha of supporting habitat, including Wetland, Major Drainage Line, Medium Drainage Line, Drainage Area/ Floodplain, Stony Plain and Hillcrest/Hillslope habitats present within the Activity Area may be disturbed (Figure 5-10). Given the lack of records of Pilbara Leaf-nosed Bat within the Activity Area or within a 500 m buffer of the Activity Area and avoidance of critical foraging habitat and potential nocturnal refuges (category 4 caves), the proposed disturbance is not predicted to have a residual impact on the species.

Habitat degradation from changes to hydrological regimes

There are no groundwater dependent pools present in the Activity Area or within the modelled drawdown area; however, supporting habitat for the Pilbara Leaf-nosed Bat that contains GDV is located within the groundwater drawdown contours of the Activity to the east of the Activity Area and includes Wetland and Major and Medium Drainage Line fauna habitats. Whilst it is possible that some of the supporting habitat for the Pilbara Leaf-nosed Bat, associated with GDV, could experience a decline in condition due to groundwater drawdown; the proposed surplus water discharge along Marillana Creek is predicted to counterbalance the drawdown and maintain groundwater levels within this area. See Section 5.2.5 for further discussion of potential impacts to fauna habitat from altered hydrological regimes. Residual impacts to supporting habitat for the Pilbara Leaf-nosed Bat associated with groundwater drawdown from the Activity are therefore unlikely.

Alterations to landforms and construction of infrastructure can lead to altered surface water drainage patterns which in turn may cause flooding and erosion in some areas and, rain-shadow effects in other areas. With the implementation of surface water management measures, changes to surface water drainage will be minimised and are not predicted to result in residual impacts to habitats.

Disturbances from increased dust, light, noise and vibration

An increase in noise and vibration in proximity to Pilbara Leaf-nosed Bat roosts has the potential to disturb Pilbara Leaf-nosed Bat that may be present, causing flushing from roosts and temporary or permanent abandonment, or by altering the foraging behaviour of the species. Given that the Pilbara Leaf-nosed Bat has not been recorded within the Activity Area or 500 m buffer and the closest cave is 1.6 km away, impacts associated with increased noise and vibration are expected to be minimal.

The potential indirect impacts to Pilbara Leaf-nosed Bats associated with artificial light associated with active mine pits are considered to be minor given the distance of the Activity Area to permanent roosts (17-20 km north of the Activity Area). Where practicable, light installations will be directed into active operational areas and away from caves, in order to minimise potential impact of light spill on caves and is not predicted to result in residual impact to the species.

Vegetation clearing, ground disturbance and vehicle movements have the potential to result in an increase in dust. Dust can indirectly affect the Pilbara Leaf-nosed Bat by altering the condition of vegetation, causing habitat degradation, or by interfering with vision and the ability to capture prey, however the available information on potential dust impacts on Pilbara Leaf-nosed Bat is limited. As the rate of mining and vehicle movements will be the same as for the existing operation, dust levels are not predicted to increase above existing levels.

Habitat modification from fire and weeds

Hot work activities onsite, vegetation clearing, and the increase in vehicle movements may increase the risk of fire, and/or spread of weeds, which may result in the degradation of supporting habitat for the Pilbara Leaf-nosed Bat.

The Activity will be conducted in adherence to standard BHP fire management and weed control practices which will serve to minimise risk associated with the potential introduction of weeds and risk of fire. Based on the proposed management and given the lack of species records within the Activity Area and/or 500 m buffer, any potential risks to Pilbara Leaf-nosed Bat from habitat degradation associated with fire or weeds is expected to be low.

Feral predators and cane toads

Feral predators such as feral cats and foxes may prey on the Pilbara Leaf-nosed Bat. Mining activities have the potential to increase feral cats and foxes to the area as a result of increased disturbance and activity. Introduced fauna species may impact native fauna species through a range of factors including predation, competition for food and shelter, habitat destruction and spread of disease. The Activity is located within an existing operational iron ore mining hub, there are no increases to camp facilities proposed, and the Activity will adhere to BHP's standard feral cat management practices (noting that the fox has not been recorded within the local area or wider region). Therefore, no increase in interactions or occurrences of feral predators is expected as a result of the proposed Activity.

The future predicted spread of the cane toad into the Pilbara bioregion, and potentially Yandi may have negative impacts to the Pilbara Leaf-nosed Bat. There is potential for cane toads to be introduced to areas via vehicles or equipment; however, it is considered unlikely that cane toads will be introduced to Yandi as travel to and from high-risk areas such as the Kimberley are not foreseen.

Overall, the implementation of the Activity is not expected to result in a residual impact to Pilbara Leaf-nosed Bat as no records exist of the species within the Activity and a 500 m buffer.

Vehicle and infrastructure interactions

Increased vehicle and machinery movements have the potential to result in fauna strike, causing injury or mortality to fauna individuals. The Pilbara Leaf-nosed Bat is susceptible to vehicle strike given it is relatively low flying and attracted to light sources (DCCEEW 2026c). However, the Activity is unlikely to result in a substantial increase in vehicle or machinery movements given it is located within an operational mining hub. In the event that vehicle strike did occur, this would likely be restricted to individuals, and would be unlikely to affect a population, particularly given that the species has never been recorded in the Activity Area or 500m buffer and given there are no nearby roosts. Overall, impacts associated with interactions with vehicles and machinery are unlikely to result in residual impacts to the species.

There is the potential for Pilbara Leaf-nosed Bats to become entangled in barbed wire; however, the use of barbed wire fencing within the Activity Area will be avoided as far as practicable, except where required by legislation. In these instances, reflectors will be installed on barbed wire fencing to deter bat interaction. On this basis and given that the species has not been recorded within the Activity Area, barbed wire fencing potentially used for the Activity is not predicted to result in residual impacts to the species.

5.6.6 Summary

The Pilbara Leaf-nosed Bat Notifiable Action Triggers are not applicable as there are no records of the Pilbara Leaf-nosed Bat in the Activity Area or within the 500 m buffer of the Activity Area boundary. Whilst there are few records of transient individuals in the local area, with the closest being approximately 15.3 km north of the Activity Area, most records occur over 17 km to the north of the Activity Area where permanent roosts may occur (Astron 2023). The Activity is not predicted to result in residual impacts to Pilbara Leaf-nosed Bat.

5.7 Grey Falcon

The following sections provide background information to demonstrate that Notifiable Action Triggers for Grey Falcon are not met. The Program Matter Objective for the Grey Falcon is "*to support the long-term persistence and viability of the Grey Falcon within the Strategic Assessment Area"*. The assessment outlines the potential impacts on the Grey Falcon and demonstrates how the Program Matter Objective for this species will be achieved.

5.7.1 General species information

The Grey Falcon occurs at low densities in arid and semi-arid regions of Australia, including the Murray-Darling Basin, Eyre Basin, central Australia and Western Australia (Marchant and Higgins 1993 as cited in TSSC 2020). The species is typically confined to the arid and semi-arid zones where annual rainfall is less than 500 mm (Schoenjahn 2018 as cited in TSSC 2020). The species frequents timbered lowland plains, particularly Acacia shrublands that are crossed by tree-lined water courses (Garnett *et al*. 2011; Watson 2011; Schoenjahn 2013, 2018; Janse *et al.* 2015; Ley and Tynan 2016 as cited in TSSC 2020). The species has been observed hunting in treeless areas and frequents tussock grassland and open woodland (Olsen and Olsen 1986; Schoenjahn 2018 as cited in TSSC 2020). Eggs are laid in the old nests of other birds, usually in the tallest trees along watercourses or in telecommunication towers (Marchant and Higgins 1993; Schoenjahn 2013, 2018; Falkenberg 2011 as cited in TSSC 2020) or other similar artificial structures. River Red Gum (*Eucalyptus camaldulensis)* and Coolibah (*E. coolabah*) are favoured nesting trees.

There are an estimated 500 Grey Falcon pairs throughout Australia, with at least 152 known records of the species in Western Australia (Birdlife 2024). Regional records of Grey Falcon are shown on Figure 5-17.

5.7.2 Studies and sampling effort

At least six contemporary surveys have targeted the Grey Falcon within the Activity Area (Table 4-1; Figure 5-18), as well as numerous contemporary and historical surveys in the wider area (Appendix 2). Survey coverage and sampling effort for the Grey Falcon is shown in Figure 5-18. Sampling methods for Grey Falcon within the Activity Area and 500 m buffer include habitat assessments (including assessments of tall trees), bird census surveys, targeted tranects and opportunistic observations taken throughout each survey (Spectrum Ecology 2026; Biologic 2025, 2023a; Astron 2024, 2023).

5.7.3 Local habitat

The Activity Area falls within the current distribution of the Grey Falcon, whereby the species or species habitat may occur (Figure 5-17).

Major Drainage Line and Drainage Area/Floodplain habitats within the Activity Area are considered critical habitat for the Grey Falcon due to the presence of tall Eucalyptus/Corymbia trees suitable for nesting, whereas Medium Drainage Line and Undulating Low Hills habitats provide supporting habitat for the species (Figure 5-19; Astron 2023).

There is approximately 43 ha of critical habitat and 0.4 ha of supporting habitat for the Grey Falcon within the Activity Area (Table 5-9; Figure 5-19).

There is approximately 89.7 ha of critical habitat and 0.008 ha of supporting habitat within the 500m buffer (Table 5-9; Figure 5-19).

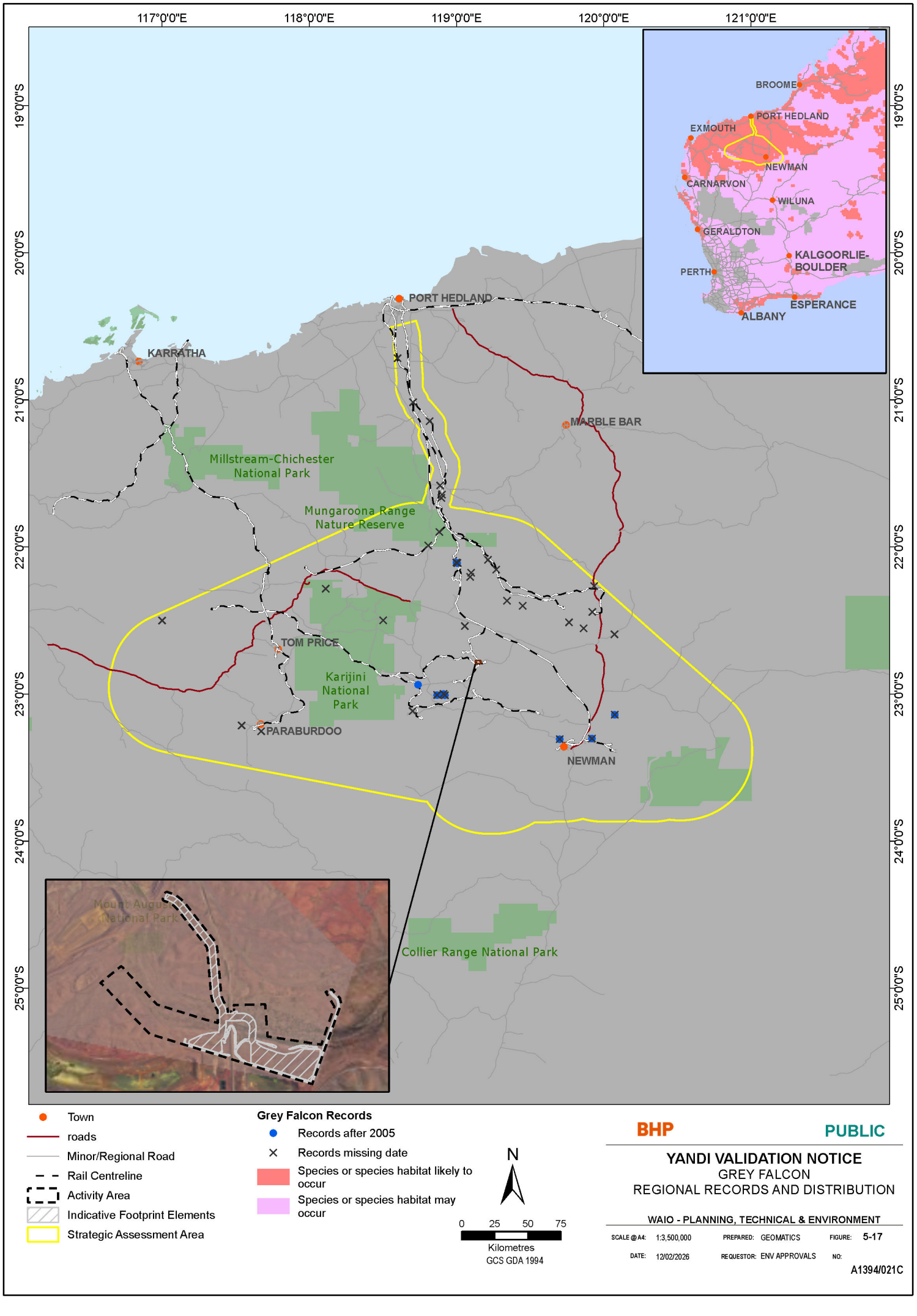
Table 5-9: Grey Falcon habitat

Habitat Description	Extent within Activity Area (ha; extent that may be cleared)	Extent within 500m buffer (ha)
Critical habitat		
Major Drainage Line	17.6	57.9

Habitat Description	Extent within Activity Area (ha; extent that may be cleared)	Extent within 500m buffer (ha)
Drainage Area/Floodplain	25.4	37.5
Total critical habitat	**43.0**	**95.4 ha**
Supporting habitat		
Medium Drainage Line	0.3	0
Undulating Low Hills	0.1	0.008
Total supporting habitat	**0.4 ha**	**0.008 ha**
Total critical and supporting habitat	**43.4 ha**	**95.4 ha**

5.7.4 Grey Falcon records

The Grey Falcon has not been recorded from the Activity Area or 500 m buffer area; however, there are six regional records with the nearest record occurring approximately 33 km south west, another three records are approximately 30-35 km to the south west, and a further two records over 50 km south west of the Activity Area (Figure 5-17; Figure 5-19; Biologic 2023a, 2025).



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YANDI VALIDATION NOTICE
GREY FALCON
REGIONAL RECORDS AND DISTRIBUTION

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4: 1:3,500,000 PREPARED: GEOMATICS FIGURE: 5-17

DATE: 12/02/2026 REQUESTOR: ENV APPROVALS NO:

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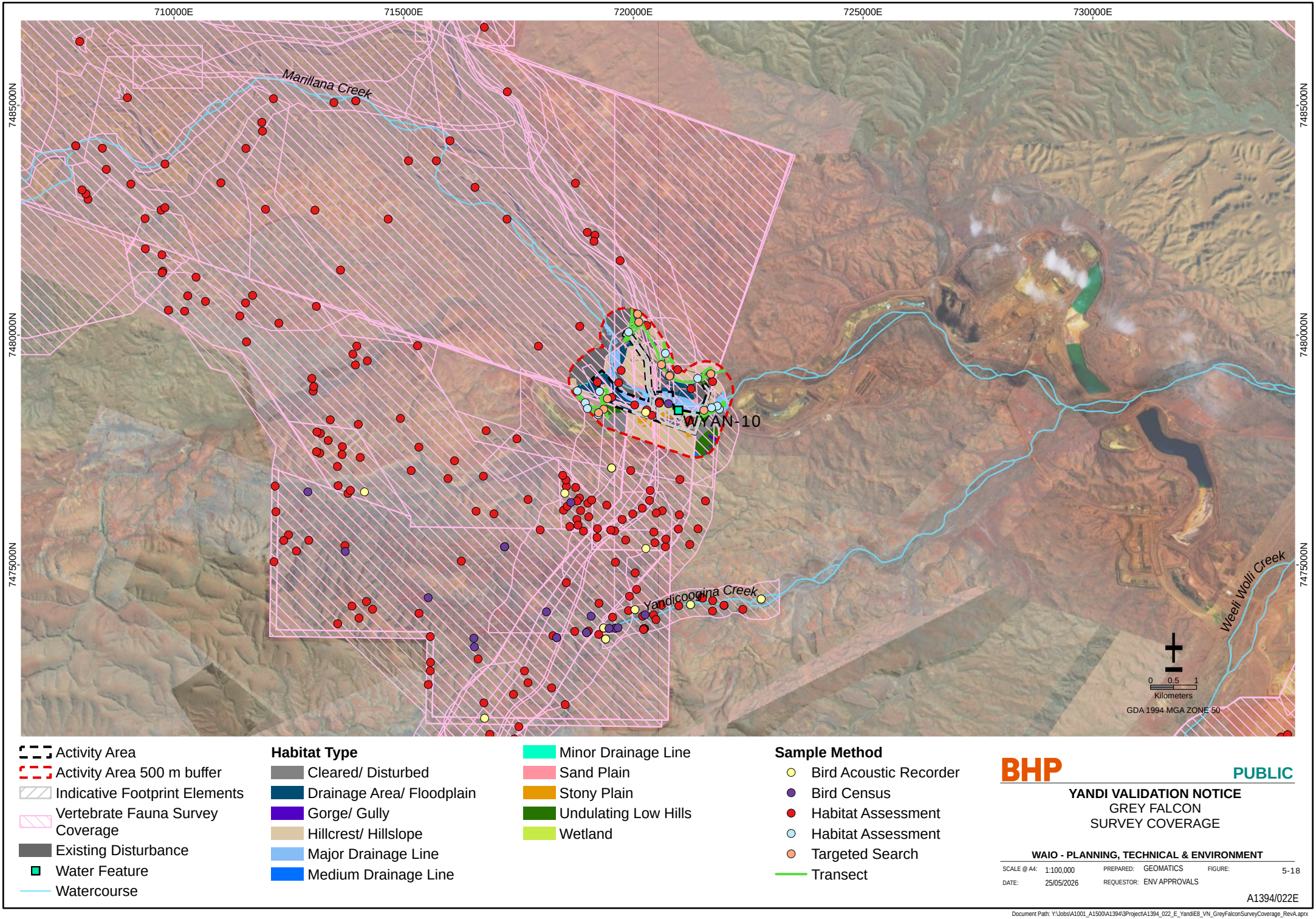

- Activity Area
- Activity Area 500 m buffer
- Indicative Footprint Elements
- Vertebrate Fauna Survey Coverage
- Existing Disturbance
- Water Feature
- Watercourse

Habitat Type

- Cleared/ Disturbed
- Drainage Area/ Floodplain
- Gorge/ Gully
- Hillcrest/ Hillslope
- Major Drainage Line
- Medium Drainage Line
- Minor Drainage Line
- Sand Plain
- Stony Plain
- Undulating Low Hills
- Wetland

Sample Method

- Bird Acoustic Recorder
- Bird Census
- Habitat Assessment
- Habitat Assessment
- Targeted Search
- Transect

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YANDI VALIDATION NOTICE
GREY FALCON
SURVEY COVERAGE

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4:	1:100,000	PREPARED:	GEOMATICS	FIGURE:	5-18
DATE:	25/05/2026	REQUESTOR:	ENV APPROVALS		

A1394/022E

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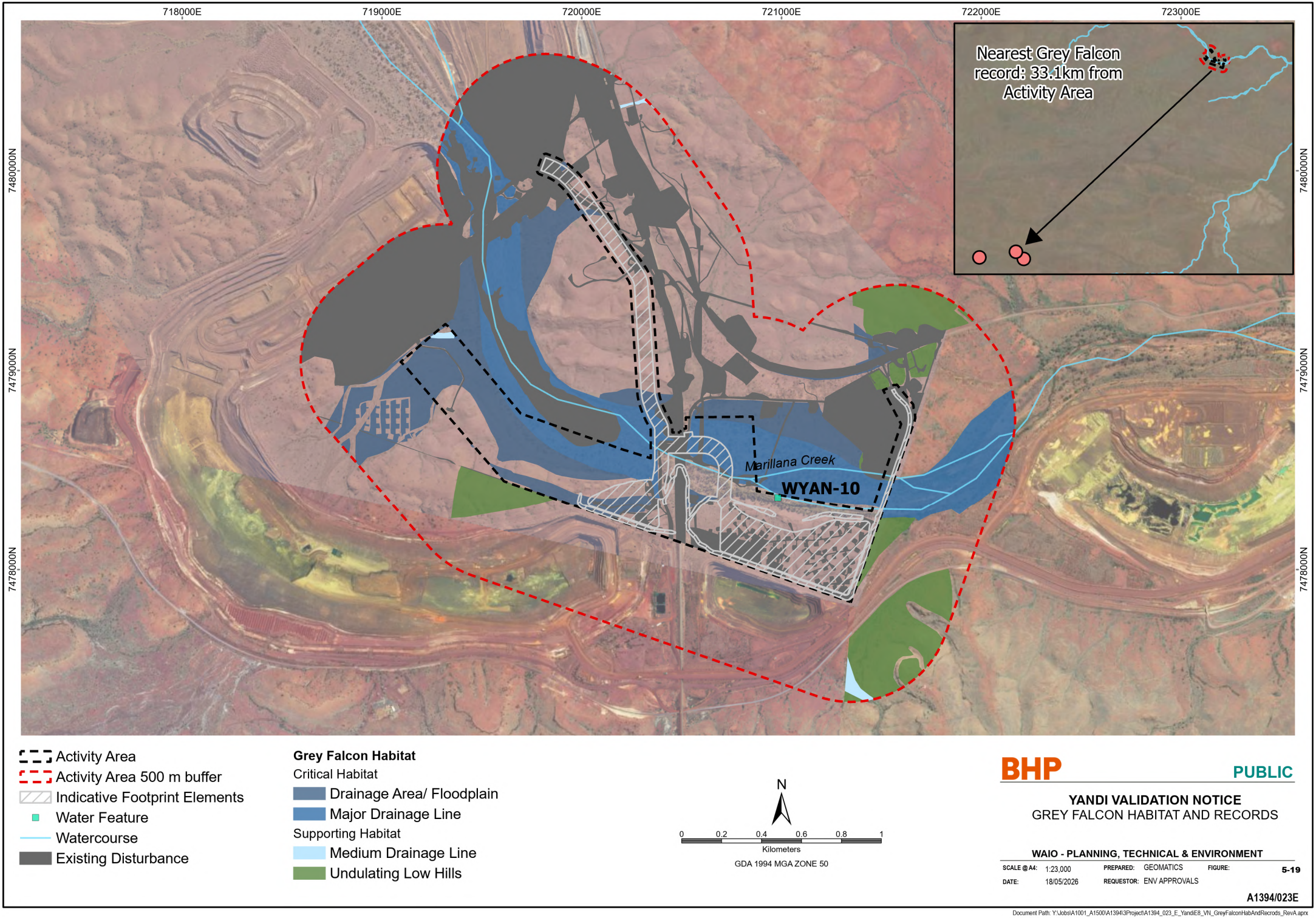

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GREY FALCON HABITAT AND RECORDS

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4:	1:23,000	PREPARED:	GEOMATICS	FIGURE:	5-19
DATE:	18/05/2026	REQUESTOR:	ENV APPROVALS		

A1394/023E

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5.7.5 Impact assessment

The potential direct and indirect impacts to the Grey Falcon from the Activity (see Section 2) are considered below. Impacts to the Grey Falcon from the Activity are considered low and do not result in a Notifiable Trigger.

Habitat loss

The Activity may result in the clearing up to 43 ha of critical habitat (17.6 ha Major Drainage Line, 25.4 ha Drainage area/Floodplain), and 0.4 ha of supporting habitat (Medium Drainage Line and Undulating Low Hills) for the Grey Falcon. However, the species has not been recorded in the Activity Area or 500m buffer. A further 95.4 ha of critical and supporting habitat will remain throughout the 500 m buffer. Habitat loss associated with this Activity does not fulfil the Notifiable Action Triggers for this Program Matter and is considered to present a low risk of impact for the species.

Habitat degradation from changes to hydrological regimes

Groundwater dewatering for the Activity will introduce groundwater drawdown to the south-eastern portion of the Activity Area for the first time. Critical and supporting habitat for the Grey Falcon that contains GDV is located within the groundwater drawdown contours of the Activity to the east of the Activity Area and includes Wetland and Major and Medium Drainage Line fauna habitats. Whilst it is possible that some of the supporting habitat for the Grey Falcon, associated with GDV, could experience a decline in condition due to groundwater drawdown; the proposed surplus water discharge along Marillana Creek is predicted to counterbalance the drawdown and maintain groundwater levels within this area. See Section 5.2.5 for further discussion of potential impacts to fauna habitat from altered hydrological regimes. Residual impacts to critical or supporting habitat for the Grey Falcon associated with groundwater drawdown from the Activity are therefore unlikely.

Alterations to landforms and construction of infrastructure can lead to altered surface water drainage patterns which in turn may cause flooding and erosion in some areas and, rain-shadow effects in other areas. With the implementation of surface water management measures, changes to surface water drainage will be minimised and are not predicted to result in residual impacts to habitats.

Disturbances from increased dust, light, noise and vibration

Disturbances to the Grey Falcon from increased dust, light, noise and vibration are expected to be minimal given that the Activity occurs within operational areas, and the species has not been recorded either within the Activity Area or 500m buffer.

Habitat modification from fire and weeds

Hot work activities onsite, vegetation clearing, and the increase in vehicle movements may increase the risk of fire, and/or spread of weeds, which may result in the degradation of critical and supporting habitat for the Grey Falcon.

The Activity will be conducted in adherence to standard BHP fire management and weed control practices which will serve to minimise risk associated with the potential introduction of weeds and risk of fire. Based on the proposed management and given the lack of species records within the Activity Area and/or 500 m buffer, any potential risks to Grey Falcon from habitat degradation associated with fire or weeds is expected to be low.

Feral predators and cane toads

Feral predators such as the feral cat may predate on the Grey Falcon (TSSC 2020). Grey Falcons may roost on the bare open ground, and there is evidence of Grey Falcon within the gut contents of cats (Schoenjahn 2013, 2018). Chicks may also be vulnerable to predation at nest sites that are accessible to cats. The Activity is unlikely to attract or increase the presence of feral predators such as feral cats. With standard BHP feral animal management practices in place and the lack of Grey Falcon records in the Activity Area and surrounds, the impacts of feral cats on the Grey Falcon associated with the Activity are considered to be low.

The future predicted spread of the cane toad into the Pilbara bioregion, and potentially Yandi may have negative impacts to the Grey Falcon. There is potential for cane toads to be introduced to areas via vehicles or equipment; however, it is considered unlikely that cane toads will be introduced to Yandi as travel to and from high-risk areas such as the Kimberley are not foreseen.

Vehicle and infrastructure interactions

Impacts to Grey Falcon from increased vehicle and infrastructure interactions are unlikely to result in a residual impact given that the Activity occurs within an operational mining area and given the lack of Grey Falcon records in the area.

5.7.6 Summary

Notifiable Action Triggers for the Grey Falcon are not applicable as no records exist within the Activity Area or within the 500 m buffer (where surveyed) of the Activity Area boundary. The Activity will result in direct impact to 43 ha of critical habitat (17.6 ha Major Drainage Line, 25.4 ha Drainage area/Floodplain), and 0.4 ha of supporting habitat (Medium Drainage Line and Undulating Low Hills) for the Grey Falcon.

5.8 Night Parrot

The following sections provide background information to demonstrate that Notifiable Action Triggers for Night Parrot are not met. The Program Matter Objective for the Night Parrot is "*to support the long-term persistence and viability of the Night Parrot within the Strategic Assessment Area"*. The assessment outlines the potential impacts on the Night Parrot and demonstrates how the Program Matter Objective for this species will be achieved.

5.8.1 General species information

The Night Parrot is listed as Endangered under the EPBC Act and Critically Endangered under the BC Act. The Night Parrot has long been considered one of Australia's most mysterious birds. The species was presumed extinct until 2013 when, after more than a century since the last widely accepted sighting of a live individual, a population was discovered in south-west Queensland. Since then, the species has been recorded from isolated populations in south-west Queensland and northern inland Western Australia (TSSC 2016d).

There are two known records of the Night Parrot in the SAA from 1967 (DBCA) and 2005 (Birdlife). The 1967 record is located in the far south-western portion of the SAA. The 2005 record is from Minga Well in the northern portion of the SAA, approximately 2.5 km north of the Fortescue Marsh. Due to confidentiality issues, the location of any other records within the SAA boundary are unable to be sourced from external databases.

The Night Parrot requires access to reliable food sources, shelter for breeding, protection from predators and the elements, and access to either free water or water-rich plant foods (Burbidge 2020). The spatial configuration requirements of Night Parrot habitat features have become increasingly evident through recent records of the species by Paruku Rangers and Birriliburu Rangers and others (Davis and Metcalfe 2008; Jackett *et al*. 2017; Murphy *et al.* 2017; Michelmore and Birch 2020 as cited in Burbidge 2020). The records have occurred at locations where productive feeding habitat (such as ephemeral grasslands, herb-fields or samphire, gilgais, run-on areas, flood plains, or salt lake systems), is interspersed or juxtaposed (at a scale of tens of square kilometres) with old-growth, dense hummock-forming spinifex for roosting/nesting that is broken up into fire-isolated patches by ironstone, rocky bars, salt lakes or samphire flats, within 50 km of free water (Burbidge 2020). The species also appears to rely on roosting/nesting in dense clumps of vegetation that are long-unburnt (TSSC 2016d).

5.8.2 Studies and sampling effort

At least five contemporary surveys have targeted the Night Parrot in the local area (Table 4-1), as well as numerous historical surveys (Appendix 2). Survey coverage for Night Parrot is shown in Figure 5-21:. Sampling methods for Night Parrot include habitat assessments, targeted searches to determine the presence of suitably sized spinifex

patches likely to be used by night parrot and targeted passive acoustic surveys using Autonomous Recording Units (ARU) placed in the most prospective habitats (Biologic 2023a, 2025; Astron 2024, 2023; Figure 5-21). The ARUs took recordings 1-hour pre-sunset to 1-hour post-dawn and covered the frequency range 100 kHz to 21,000 kHz, which brackets the night parrot call frequency range of 1,500 kHz to 3,500 kHz.

5.8.3 Local habitat

The Activity Area falls within the current distribution of the Night Parrot (Figure 5-20:) whereby the species or species habitat may occur.

There is no critical habitat for the Night Parrot present within the Activity Area or 500 m buffer.

Supporting habitat is present within the Drainage Area/Floodplain, Undulating Low Hills, and Stony Plain habitats (Table 5-10); however, these are considered sub-optimal due to the lack of old growth *Triodia* and given the high level of existing disturbances from mining operations, and the species is considered unlikely to occur either within the Activity Area or wider area (Astron 2023; Biologic 2023a, 2025; Spectrum Ecology 2026).

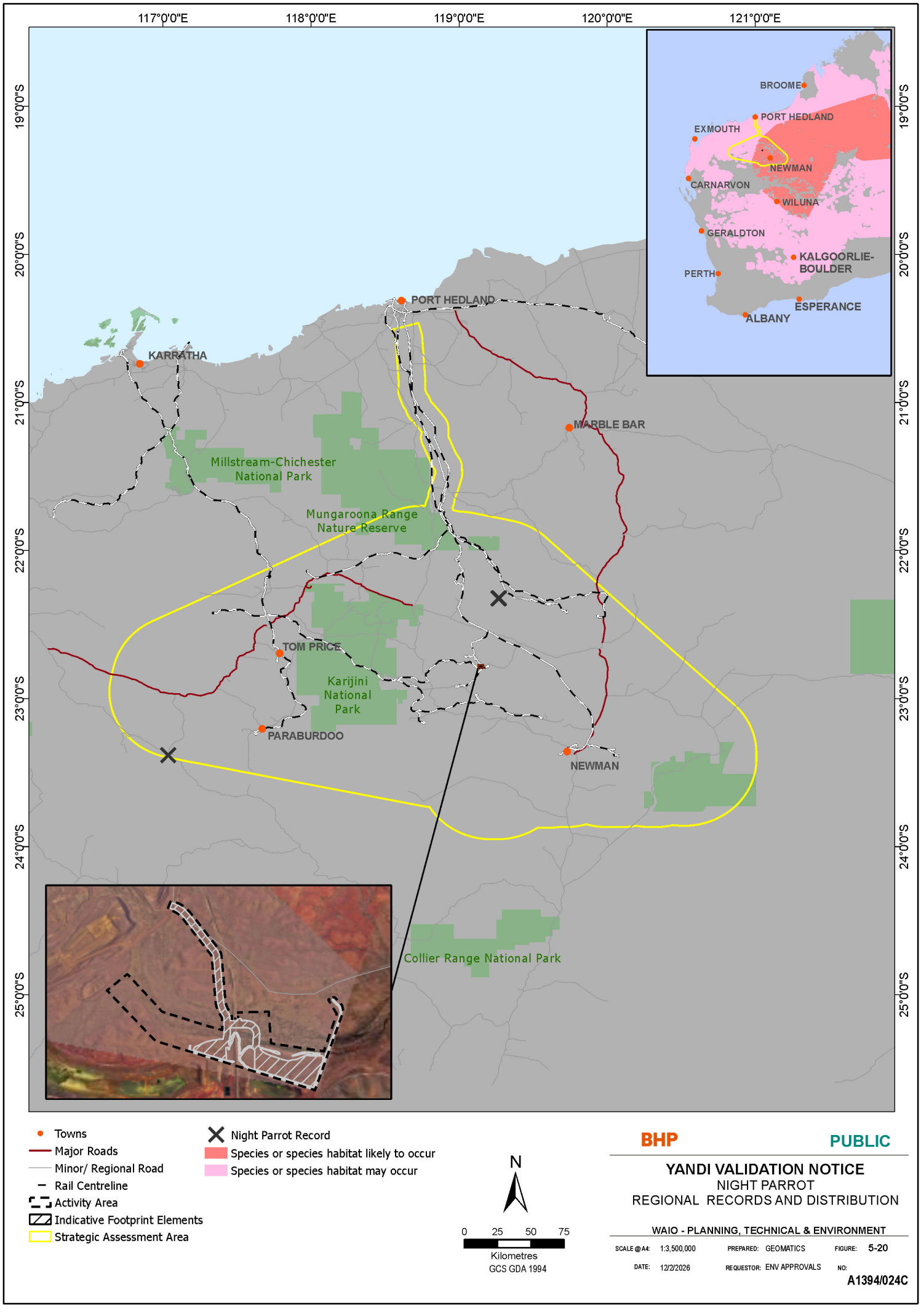
There is approximately 25.5 ha of supporting habitat present within the Activity Area and 104.7 ha of supporting habitat present within the 500 m buffer (Table 5-10; Figure 5-22).

Table 5-10: Night Parrot habitat

Habitat Type	Extent within Activity Area (ha; extent that may be cleared)	Extend within 500 m buffer (ha)
Supporting habitat		
Drainage Area/Floodplain	25.4	37.5
Undulating Low Hills	0.02	42.5
Stony Plain	0.08	24.7
Total supporting habitat	**25.5 ha**	**104.7 ha**

5.8.4 Night Parrot records

The Night Parrot has not been recorded in the Activity Area despite extensive survey effort. There are no nearby regional records although database searches have identified three records within 50 km, all recorded by acoustic recorder (Astron 2023; Biologic 2023a, 2025; Spectrum Ecology 2026). The closest record is known from FMG's Cloudbreak mine, approximately 50 km north-east of the Activity Area (Biologic 2025; Figure 5-20:). Whilst there is some potentially suitable habitat present within the Drainage Area/Floodplain, Undulating Low Hills, and Stony Plain habitats within the Activity Area and/or 500 m buffer, there is no old growth *Triodia* present, and large sections of the Activity Area have been cleared or are disturbed. Based on this, and the lack of records within, or in proximity to, the Activity Area (despite extensive survey effort), this species has a low likelihood of occurrence (Biologic 2025; Astron 2024).



BHP PUBLIC

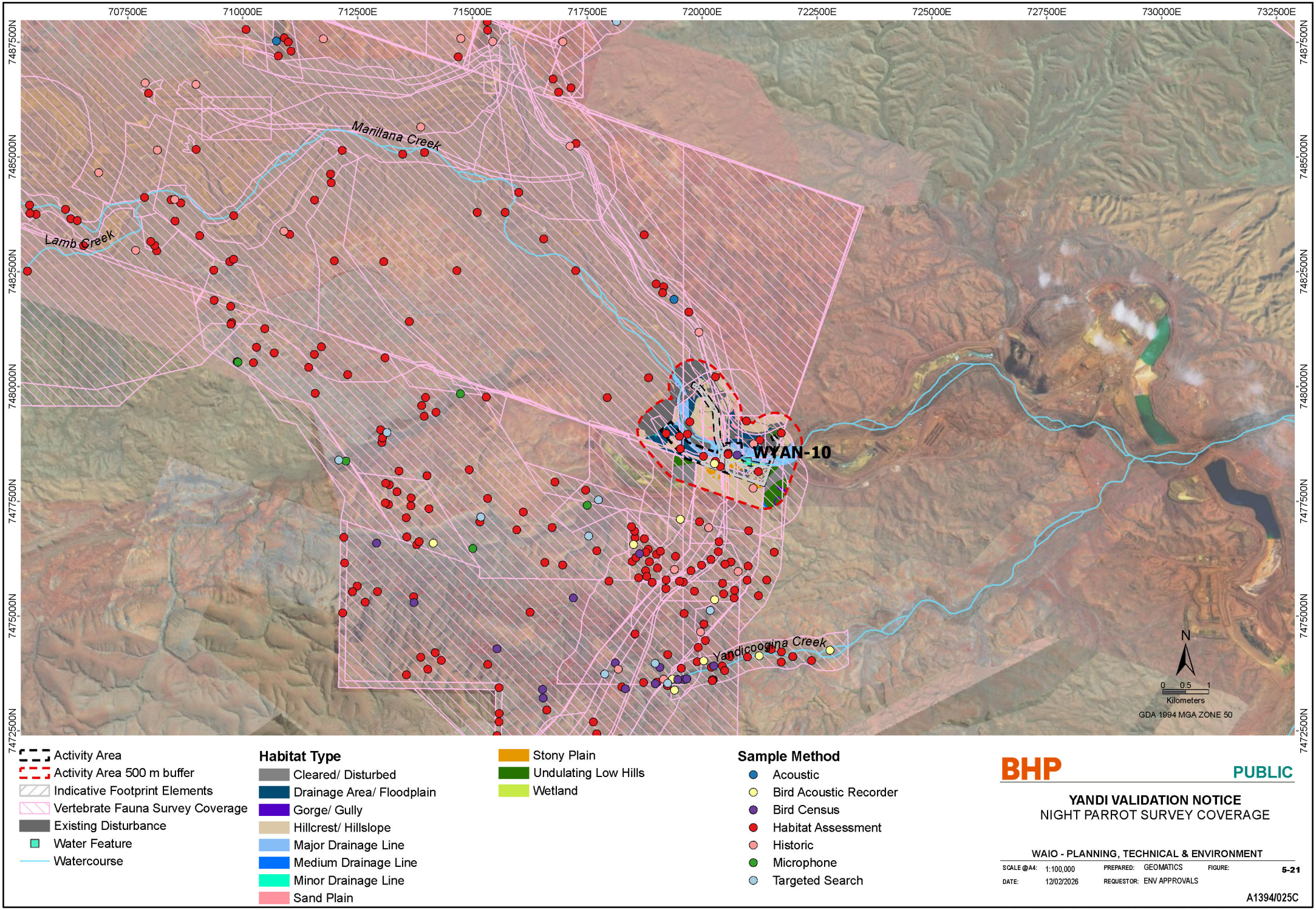
YANDI VALIDATION NOTICE
NIGHT PARROT
REGIONAL RECORDS AND DISTRIBUTION

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4: 1:3,500,000 PREPARED: GEOMATICS FIGURE: 5-20

DATE: 12/2/2026 REQUESTOR: ENV APPROVALS NO:

A1394/024C



- Activity Area
- Activity Area 500 m buffer
- Indicative Footprint Elements
- Vertebrate Fauna Survey Coverage
- Existing Disturbance
- Water Feature
- Watercourse

Habitat Type

- Cleared/ Disturbed
- Drainage Area/ Floodplain
- Gorge/ Gully
- Hillcrest/ Hillslope
- Major Drainage Line
- Medium Drainage Line
- Minor Drainage Line
- Sand Plain
- Stony Plain
- Undulating Low Hills
- Wetland

Sample Method

- Acoustic
- Bird Acoustic Recorder
- Bird Census
- Habitat Assessment
- Historic
- Microphone
- Targeted Search

BHP

PUBLIC

YANDI VALIDATION NOTICE
NIGHT PARROT SURVEY COVERAGE

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @A4:	1:100,000	PREPARED:	GEOMATICS	FIGURE:	5-21
DATE:	12/02/2026	REQUESTOR:	ENV APPROVALS		

A1394/025C

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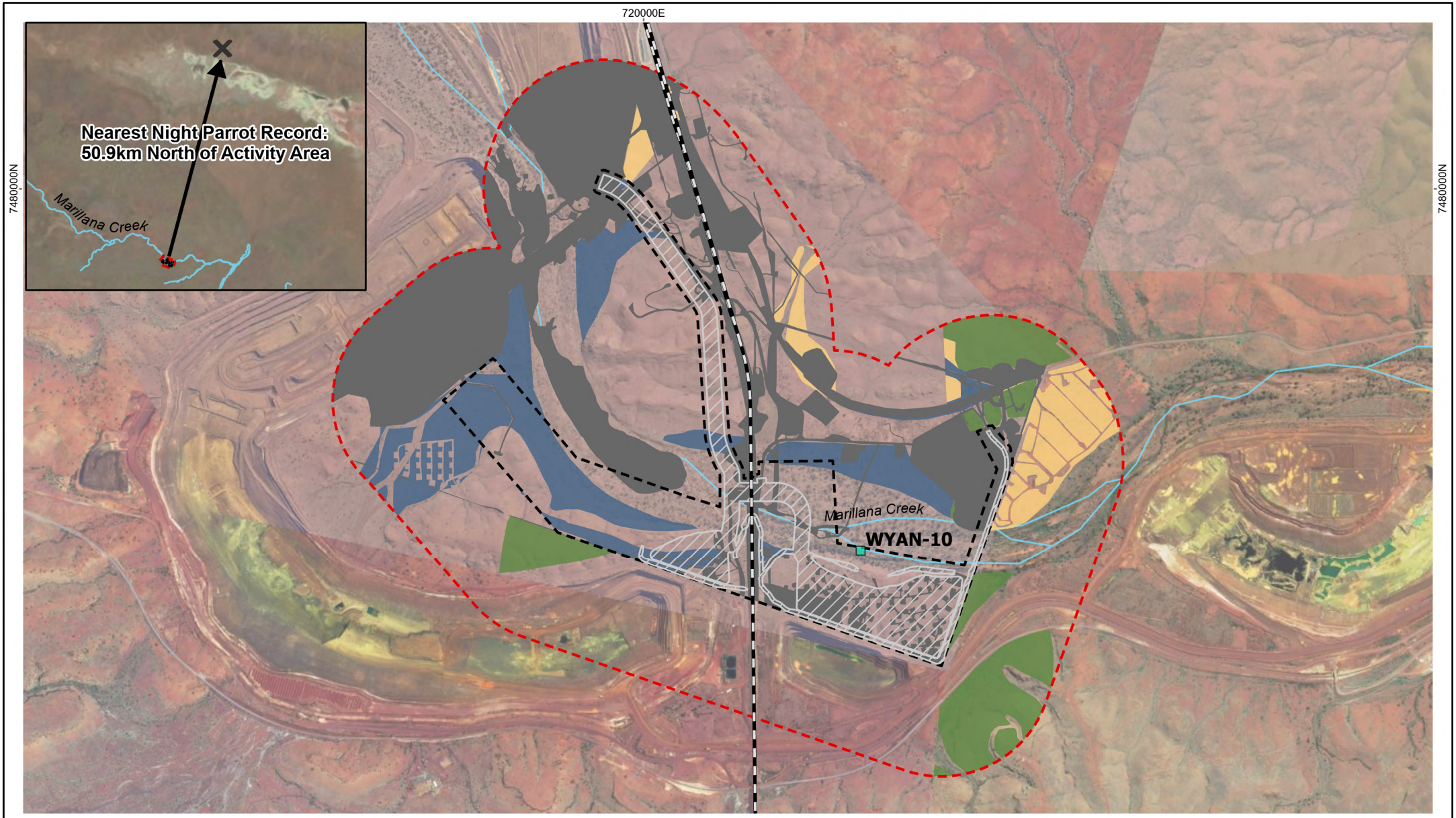

BHP

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YANDI VALIDATION NOTICE
NIGHT PARROT HABITAT AND RECORDS

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @ A4:	1:23,000	PREPARED:	GEOMATICS	FIGURE:	5-22
DATE:	13/05/2026	REQUESTOR:	ENV APPROVALS		

A1394/026F

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5.8.5 Impact assessment

The potential direct and indirect impacts to the Night Parrot from the Activity (see section 2) are considered below. Impacts to the Night Parrot from the Activity are considered low and do not result in a Notifiable Trigger.

Habitat loss

The Activity will not result in the loss of critical habitat for the Night Parrot as there is no critical habitat present within the Activity Area and surrounds. The Activity may result in the loss of up to 25.5 ha of supporting habitat including Drainage Area/Floodplain (25.4 ha), Stony Plain (0.08 ha), and Undulating Low Hills (0.08 ha). However, the species has not been recorded in the Activity Area or 500m buffer, with the closest records being 35 km away. A further 104.7 ha of supporting habitat will remain throughout the 500 m buffer. Habitat loss associated with this Activity does not fulfil the Notifiable Action Triggers for this Program Matter and is considered to present a low risk of impact for the species.

Habitat degradation from changes to hydrological regimes

There are no groundwater dependent pools present in the Activity Area or within the modelled drawdown area and none of the supporting habitats for Night Parrot contain groundwater dependant values. As such, there will be minimal impacts to Night Parrot as a result of groundwater drawdown.

Alterations to landforms and construction of infrastructure can lead to altered surface water drainage patterns which in turn may cause flooding and erosion in some areas and, rain-shadow effects in other areas. With the implementation of surface water management measures, changes to surface water drainage will be minimised and are not predicted to result in residual impacts to Night Parrot habitats.

Disturbances from increased dust, light, noise and vibration

Given that there are no Night Parrot records within the Activity Area or 500 m buffer, with the closest records over 35 km away, there will be minimal impacts to Night Parrot from increased dust, light, noise and vibration.

Habitat modification from fire and weeds

Hot work activities on site and vehicle movements could increase the risk of fire and spread of weeds, respectively. Fire and weed encroachment have the potential to degrade supporting habitat for Night Parrot within the Activity Area and/or 500 m buffer. However, with standard BHP fire management and weed control practices, the potential for habitat degradation due to increased risk of fire and/or weeds as a result of the Activity is considered low and unlikely to result in residual impacts to the species.

Feral predators and cane toads

The Night Parrot is vulnerable to predation by feral cats (*Felis catus*) and foxes (*Vulpes vulpes*) (TSSC 2016d). The Activity is not likely to increase the presence of feral predators when compared to the existing operation. With standard BHP feral animal management practices in place, lack of Night Parrot records or critical habitat in the Activity Area and surrounds, the impacts of feral cats and foxes on the Night Parrot associated with the Activity are considered low risk and not predicted to result in residual impact to Night Parrot.

The future predicted spread of the cane toad into the Pilbara bioregion, and potentially Yandi may have negative impacts to the Night Parrot. There is potential for cane toads to be introduced to areas via vehicles or equipment; however, it is considered unlikely that cane toads will be introduced to Yandi as travel to and from high-risk areas such as the Kimberley are not foreseen. The Activity is not predicted to result in residual impacts to the species as a result of feral predators.

Vehicle and infrastructure interactions

Given that the Night Parrot has not been recorded from the Activity Area or 500m buffer, with the closest records being 50 km away, impacts associated with vehicle and infrastructure interactions will be minimal.

5.8.6 Summary

The Notifiable Action Triggers for the Night Parrot are not applicable as no records exist within the Activity Area or within the 500 m buffer of the Activity Area boundary. The Activity is not predicted to result in residual impacts to the Night Parrot through either direct or indirect impacts to Night Parrot supporting habitat.

6 Compliance tracking and annual reporting

Detail on compliance tracking is provided in Section 8 and below.

BHP is required to produce an Annual Environmental Report (AER) to monitor performance against the Program. As a minimum, the aspects applicable to this Validation Notice to be included in the AER are:

- status of implementation (planned start date, action commenced and planned completion date; and action completed) of the Notifiable Action
- offsets implemented for the Notifiable Action
- where applicable, accumulated disturbance against PMO
- disturbance areas associated with all actions, whether material or non-material, implemented since the approval. Both the annual disturbance and the total disturbance (since the approval) will be included
- monitoring, management and corrective actions implemented during the reporting period to avoid, mitigate and offset impacts to Program Matters
- attainment of Program Matter Objectives and PMOs
- summary of any exceedances of the PMO relevant to each Notifiable Action, and corrective actions taken
- deviations from the Program or from information and management commitments contained in a Validation Notice for a Notifiable Action.

7 Offset proposal

7.1 Residual impacts

Following implementation of the mitigation hierarchy, BHP has determined that residual impacts requiring offset are associated with the loss of critical foraging and dispersal habitat, and supporting habitat for the Pilbara Olive Python including the loss of up to:

- Wetland – 7.1 ha
- Major Drainage Line – 17.6 ha
- Medium Drainage Line – 0.3 ha.

Habitat types to be offset are illustrated in Figure 7-1 and described in Table 7-1.

Table 7-1 includes the extent of critical and/or supporting habitat that will be directly impacted by the Activity. BHP has applied the current offset rate ($/ha), as of March 2026, to estimate the total offset liability for the Activity.

7.2 Offset requirements

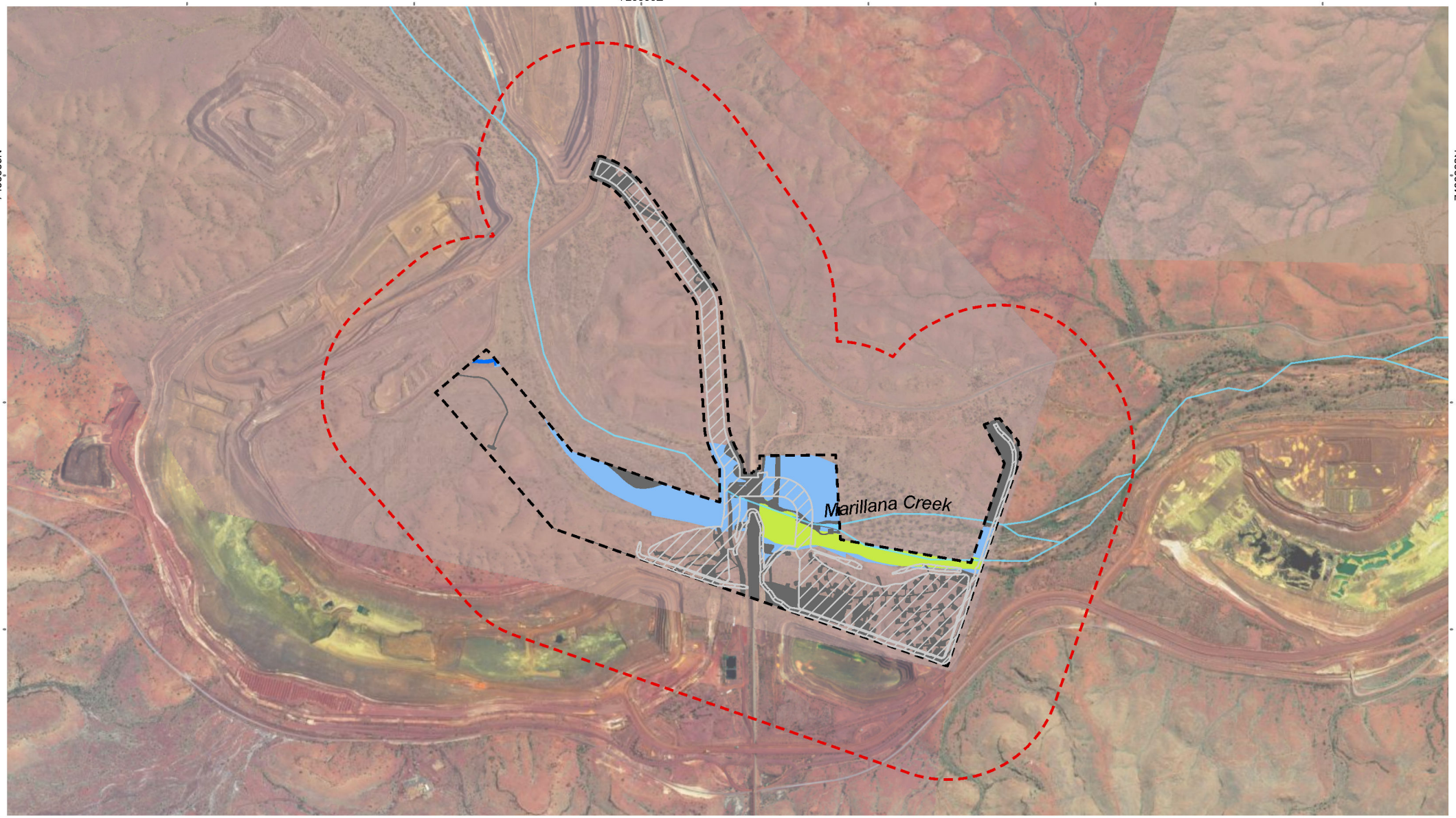
BHP developed the following objective based on *the Standards for Accreditation of Environmental Approvals under the Environment Protection and Biodiversity Conservation Act 1999* and in consultation with the DCCEEW (Section 3.1.1 of the Program):

> *'To support the long-term persistence and viability of the Pilbara Olive Python, within the strategic assessment area.'*

Offsets for the residual impacts identified in Table 7-1, are required to achieve this objective.

Table 7-1: Marillana Creek (Yandi) Validation Notice Program Matter residual impacts and offsets

Residual Impact	Habitat types and extent to be offset (ha)	Total area to be offset (Ha)	Habitat Rating	Offset Rate ($/ha) excluding GST	Total estimated financial offset ($AUSD) excluding GST
Pilbara Olive Python					
Clearing of critical foraging and dispersal habitat	Wetland – 7.1 Major Drainage Line – 17.6	24.7	Critical	3,306	81,658.20
Clearing of supporting habitat	Medium Drainage Line – 0.3	0.3	Supporting	1,653	495.90
				Total Amount to be offset	**82,154.10**
				Initial 10% pre-payment	**8,215.41**



- Activity Area
- Activity Area 500 m buffer
- Indicative Footprint Elements
- Existing Disturbance
- Watercourse

Critical Habitat

- Major Drainage Line
- Wetland

Supporting Habitat

- Medium Drainage Line

N

0 0.5 1

Kilometers

GDA 1994 MGA ZONE 50

BHP

PUBLIC

YANDI VALIDATION NOTICE
FAUNA HABITAT CLEARING OFFSET

WAIO - PLANNING, TECHNICAL & ENVIRONMENT

SCALE @A4:	1:22,887	PREPARED:	GEOMATICS	FIGURE:	7-1
DATE:	12/03/2026	REQUESTOR:	ENV APPROVALS		

A1394/027D

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7.3 Proposed offset contributions

Typical offset methods available in the Pilbara that BHP may use include, financial, land management and research offsets. The DCCEEW have agreed that contributions to the Pilbara Environmental Offset Fund (PEOF) will address clearing of critical and supporting habitat. The loss of critical and supporting foraging habitat for Pilbara Olive Python is considered a residual impact and is therefore proposed to be offset by a financial contribution to the PEOF (habitat types to be offset shown in Figure 7-1). The offset package comprises the following:

- Advance payment of 10% of the estimated total offset contribution to be paid into the PEOF within one month of the Validation Notice becoming effective.
- A biennial payment for each hectare of critical and/or supporting habitat.

BHP is proceeding on the basis that offsets will be acquitted via payment to the PEOF.

Financial contributions to the PEOF to support on ground offset projects in the Pilbara, to the benefit of relevant Program Matters, will achieve the Program Matter Objective and relevant Program Matter Outcome through investment in one or more conservation projects, such as:

- Landscape scale programs to address threats such as weeds, feral animals, and inappropriate fire.
- Priority area programs build on the landscape-scale outcomes to further improve and protect vegetation and species habitat in identified priority areas.
- Site specific projects to protect and improve specific environmental matters such as Priority Ecological Communities or a particular habitat with unique attributes.

Reporting on the financial contribution to the PEOF will be included in the Annual Environmental Report (see Section 7.6).

7.4 Offset calculation

7.4.1 Baseline datasets

During the assessment, fauna habitat survey data for each Program Matter is collected. A component of the biological survey information is the identification and mapping of critical and suitable habitats for each Program Matter. As the presence of Pilbara Olive Python has triggered the need for this Validation Notice, habitat mapping has been reviewed in the determination of offsets.

The following baseline datasets will be provided to the PEOF to assist in determining the offset value to be applied:

- the Activity Area
- existing disturbance areas (as of FY 2023)
- fauna habitat mapping and relevant Program Matter records.

7.4.2 Offset methodology

The following methodology is used to calculate the direct impacts to the Program Matter values that require offsetting utilising the PEOF:

1) Land disturbance data is captured

   BHP captures and prepares a land disturbance dataset to demonstrate the impacts that have occurred within the reporting period, via the following steps:

- throughout the financial year periodic aerial imagery of the Validation Notice Activity Area is captured
- using the aerial imagery closest to the end and beginning of each financial year, the land disturbance within each reporting period is digitised
- land disturbance data is then categorised and attributed with data according to the standards set out in the Instructions and associated templates
- the land disturbance data further digitised and captured at 1:1,000, meaning that 1 millimetre on the computer screen is equivalent to 1 metre on the ground[5]; this is consistent with the precision of all BHP datasets
- a land disturbance dataset is then available for reconciliation and validation processing.

2) Data reconciliation and validation

   Reconciliation and validation of the land clearing dataset is undertaken to ensure that all land disturbance activities for the reporting period have been streamlined, categorised and attributed according to the Impact Reconciliation Plan, Instructions requirements and from prior feedback from DWER.

3) Processing of datasets

   BHP has developed a methodology which automates the process of comparing the land clearing dataset against the baseline dataset, for calculating the hectares of land disturbance for each area of environmental value (areas subject to offsets), and those with Offset Exclusions.

   The automated methodology ensures the process of deriving the final product is consistent and repeatable, across other approvals and reporting periods.

4) Production of final Impact Reconciliation Report dataset

   An EPBC Act Impact Reconciliation Report (EPBC Act IRR) dataset for each financial year within the reporting period is then developed.

   The EPBC Act IRR dataset will be used for calculating and reporting the total number of hectares with the Program Matter offset requirements within the reporting period and the cumulative totals, in the EPBC Act IRR.

   This EPBC Act IRR dataset and aerial imagery, is submitted to the DWER with the IRR for review and assessment and will be maintained on record for auditing purposes.

7.4.3 Offset rates

The relevant financial rates to be used per ha of loss of supporting habitat as determined by the DCCEEW are as follows:

- A minimum of $3,306 per ha of critical habitat
- A minimum of $1,653 per ha of supporting habitat.

7.5 Proposed schedule

Key anticipated steps and the schedule for the provision of the biennial EPBC Act Impact Reconciliation Reports, to enable PEOF to determine the financial contributions payable are outlined in Table 7-2 and Table 7-3.

.

5 BHP captures baseline land disturbance at 1:1,000 (i.e. +/- 0.5m on the ground) hence any polygon slivers or gaps in the dataset under one square metre are ignored and are considered acceptable in the context of analysing datasets at vastly different scales.

Table 7-2: Offset reporting period

Reporting Period	Action	Timing
Biennial (Two-Yearly)	EPBC Act Impact Reconciliation Reporting and Financial Contributions	First period commences on day Validation Notice is effective and ends on the second 30 June following (30 June 2027). Successive reporting 1 July to second 30 June following, unless otherwise agreed.

Table 7-3: PEOF contributions schedule

Validation Process Stage	Action	Timing
Consultation on PEOF contributions	Provision of the Validation Notice inclusion of Impact Reconciliation Process and spatial data (Section 8 for Contributions to the PEOF)	During 28-day public comment period
Authorisation	Validation Notice becomes effective	20 business days after publication of Final Validation Notice.
Implementation Advanced Payment	Advanced Payment (10% of the estimated total contribution) in accordance with the APOP	Within one month of Validation Notice becoming effective
	BHP to report payment of Advanced Payment in the AER	30 October 2026
Implementation Period 1* (Financial Years 2026 and 2027)	Disturbance undertaken during period	[Authorisation date] to 30 June 2027
	Aerial survey/ground truthing	30 June 2026 and 30 June 2027
	EPBC Impact Reconciliation Report submitted to PEOF and DCCEEW	30 October 2027
	BHP to provide Offset Payment to PEOF	Once DWER PEOF confirms receipt of Impact Reconciliation Report and issues invoice for Period 1 Payment 20 business days of receipt of invoice
	BHP to report Offset Payment for Period 1 in next AER	By 30 September 2028
Implementation Period 2 (Financial Years 2028 and 2029) *and so forth*	Disturbance undertaken during period	1 July 2027 to 30 June 2029
	Aerial survey/ground truthing	30 June 2028 and 30 June 2029

Validation Process Stage	Action	Timing
until final offset contributions are completed	EPBC Impact Reconciliation Report submitted to PEOF and DCCEEW	30 October 2029
	BHP to provide Offset Payment to PEOF	Once DWER PEOF confirms receipt of Impact Reconciliation Report and issues invoice for Period 1. Payment 20 business days of receipt of invoice
	BHP to report Offset Payment for Period 2 in next AER	By 30 September 2030

*Period 1 is less than two years to align with a financial year reporting period.

7.6 Offsets reporting

7.6.1 Content of Impact Reconciliation Report

Each EPBC Act IRR will include:

- Identification of the relevant Validation Notice and applicable commitments.
- Summary of the Program Matter values covered by the EPBC Act IRR.
- Purpose of clearing undertaken within the reporting period.
- A table showing the current extent of clearing during the reporting period in ha, the offset rate ($/ha) for each Program Matter value (shown in Table 7-1) and an estimate of the total amount due.
- A table estimating the clearing expected in the next reporting period.
- A figure(s) illustrating the clearing extent for the reporting period, against the Program Matter fauna habitat baseline dataset.
- A spatial data package, as supporting information.

The IRR and accompanying spatial data package 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 DWER and DCCEEW applicable at the time of preparing the IRR.

7.6.2 Payment of Financial Contributions

EPBC IRRs will be submitted biennially to the DWER PEOF administration team and kept on record for auditing purposes**.** In the event this Validation Notice and Offset Proposal are amended and superseded by a new version, a part-year reconciliation will be undertaken for the superseded approval to coincide with the start of the first reporting period.

The following information will be submitted in the IRR:

- clearing undertaken for each financial year of the reporting period

- supporting information to validate clearing including the aerial imagery, digitised polygons and ground-truthing surveys (undertaken in accordance with the DWER and the DCCEEW guidance) used to determine clearing in each financial year
- information regarding exempt clearing, other approvals or reductions to contributions to the fund, where relevant
- where applicable, information regarding part-year reconciliations required due to a Validation Notice and SEA Offsets Proposal being superseded
- a forward estimate of clearing.

7.6.3 Implementation of PEOF projects

BHP will provide a progress summary of the offsets implemented and achievement of outcomes from the funding provided to the PEOF in the AER. Annual reports, evaluations or other progress reports provided by the PEOF and its delivery agents to BHP, will be retained for auditing purposes.

8 Commitments

Key commitments of the Validation Notice are summarised in the following sections. Implementation of each of the commitments will be reported in the SEA AER.

8.1 Monitoring commitments

The monitoring commitments which form part of this Validation Notice are presented in Table 8-1 below.

Table 8-1: Proposed monitoring commitments – Pilbara Olive Python

Program Matter Objective (Pilbara Olive Python) – To support the long-term persistence and viability of the Pilbara Olive Python					
Program Matter Outcome (Pilbara Olive Python) – Minimise loss of critical and supporting habitats of the Pilbara Olive Python as a result of Program Activities within the SAA					
Commitment	**Action**	**Frequency**	**Performance Target**	**Contingency**	**Reporting**
Pilbara Olive Python Monitoring	Undertake monitoring for presence of Pilbara Olive Python in the Activity Area	Annually	Complete targeted monitoring program for Pilbara Olive Python in the Activity Area	If target not met, reschedule as soon as possible, taking into consideration safety requirements	Any new records will be reported to DBCA and will be recorded in BHP's internal GIS system within 60 days of finding
Pilbara Olive Python Habitat Monitoring	Monitoring of Pilbara Olive Python critical habitat at sites along Marillana Creek, using the following monitoring variables: canopy extent and density (measured by Crown Condition Score), understorey condition (cover), site condition (general), vegetation and tree condition (using remote sensing) and water stress (measured by Leaf Water Potential).	Pre- and post-dry season (biannual) tree health monitoring	No significant[6] decline in Pilbara Olive Python critical habitat as a result of the Activity during operations.	If the target is not met, contingency actions may include, but are not limited to: • Investigate the decline to evaluate whether change is due to BHP drawdown activities or other factors (e.g. drought, fire, pathogens etc.); and/or • Increase the frequency of riparian vegetation health monitoring if appropriate; and/or • Cease or reduce groundwater abstraction from the relevant borefield	If the performance target is not achieved, it will be detailed in the SEA Annual Environmental Report.

[6] A significant decline in Pilbara Olive Python habitat is considered to be an average crown condition score of ≤3 over two consecutive sample periods or an average pre-dawn leaf water potential (LWP) score of > -1.95 MPa over two consecutive sample periods.

Program Matter Objective (Pilbara Olive Python) – To support the long-term persistence and viability of the Pilbara Olive Python					
Program Matter Outcome (Pilbara Olive Python) – Minimise loss of critical and supporting habitats of the Pilbara Olive Python as a result of Program Activities within the SAA					
Commitment	**Action**	**Frequency**	**Performance Target**	**Contingency**	**Reporting**
				(where feasible) and allow groundwater levels to recover; and/or • Provide alternative water supply to the affected trees (i.e. irrigation, infiltration or groundwater reinjection, based on feasibility of long-term persistence considering post closure groundwater levels) subject to approval from the regulatory authority; and/or • Develop a rehabilitation strategy for areas of riparian vegetation health decline within the Activity Area, commensurate to groundwater level recovery predicted through closure modelling; and • Monitor and review to ensure management actions are successful and review procedures, if appropriate.	

8.2 Clearing commitments

The clearing commitments which form part of this Validation Notice, inclusive of proposed clearing allowances for each habitat type, are presented in Table 8-2.

Table 8-2: Proposed clearing commitments – Pilbara Olive Python

Commitment	Action	Frequency	Performance Target	Contingency
Clearing of no more than 24.7 ha of Pilbara Olive Python critical and 0.3 ha supporting habitat	Implement BHP's land disturbance permit system to ensure clearing does not exceed the identified limits	Annual	No more than 24.7 ha of critical habitat No more than 0.3 ha supporting habitat	Review land disturbance permitting system. Report and offset any additional unplanned impacts

8.3 Management commitments

The management commitments which form part of this Validation Notice are presented in Table 8-3.

Table 8-3: Proposed management commitments – Pilbara Olive Python

Management Commitment	Action	Frequency	Reporting
Use of a suitably trained fauna spotter	Pre-clearance surveys will be undertaken by a suitably trained fauna spotter within Wetland and Major Drainage Line habitat, seven days prior to clearing	Seven days prior to clearing	SEA AER
Modify land clearing plan	Modify land clearing plans (if proposed clearing may disturb known locations of Pilbara Olive Python), where practicable, to minimise disturbance to known Pilbara Olive Python within the Activity Area.	During construction	SEA AER
Education	On site inductions and education of Pilbara Olive Python and measures to take if individuals are observed	Continuous for duration of Activity	SEA AER
Daylight construction where possible	Construction will be mostly undertaken during day-light hours which will minimise impacts to nocturnal fauna species	During construction	SEA AER
Speed limits	A 40 km/hr speed limit will be imposed at creek crossings in the Activity Area to minimise the risk of vehicle strike or fauna interactions with machinery	Continuous for duration of Activity	SEA AER

Management Commitment	Action	Frequency	Reporting
Dust management	Excessive dust will be minimised as far as practical to minimise degradation of fauna habitats.	Continuous for duration of Activity	SEA AER
Event Management System	All sightings and events involving Pilbara Olive Python (including vehicle strike) will be identified and captured in WAIOs Event Management System. Pilbara Olive Python sightings will be recorded in BHP's internal GIS system within 60 days of finding	Continuous for duration of Activity	SEA AER
Prohibition of domestic pets or animals	The keeping of domestic pets or animals on site will be prohibited.	Continuous for duration of Activity	SEA AER
Weed hygiene	Standard hygiene practices will be implemented to minimise introduction and spread of weeds including annual weed control (if required) and vehicle hygiene measures when entering/leaving construction areas.	Continuous for duration of Activity	SEA AER
Feral cat management	Environmental induction provided to site personnel. Report sightings of feral cats in the BHP Event Management System (EMS) as an environment event, including from pre-clearance surveys and monitoring activities (Table 8-1). Suitable trapping or baiting program to be undertaken following reports of cat sighting on site, following approval from site Environment Team.	Feral cat sightings reported as soon as possible. Trapping or baiting program implemented in response to feral cat sightings and as approved by the site Environment Team	SEA AER

8.4 Offset commitments

The offset commitments which form part of this Validation Notice are presented in Table 8-4.

Table 8-4: Proposed offset commitments – Pilbara Olive Python

Offset Commitment	Action	Monitoring And Frequency	Reporting
Payment of financial contribution to PEOF	Advanced payment of 10% off offset amount within one month of the Validation Notice becoming effective.	One off payment within one month of Validation Notice becoming effective.	SEA AER Provide DCCEEW with receipt of payment to PEOF
	Biennial payment for clearing of critical and/or supporting habitat	Disturbance reported annually EPBC IRR provided biennially	
Provide PEOF funding progress summary	A progress summary of offsets implemented and achievement of outcomes from the funding provided to the PEOF will be provided in the AER	Annually	SEA AER

8.5 Adaptive Management

BHP applies an adaptive management framework for implementing management measures identified in this Validation Notice. Adaptive management is a structured, iterative process to decision making. The framework embeds a cycle of monitoring, reporting and implementing change where required. It allows an evaluation of the management and mitigation measures so that they are progressively improved and refined, or alternative solutions adopted, to ensure that performance targets are achieved. The key steps of the adaptive management approach are outlined in Figure 8-1.

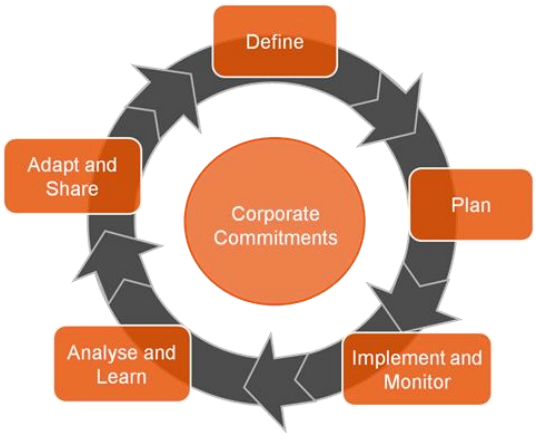

Figure 8-1: BHP's adaptive management approach

BHP will review the management and monitoring commitments, including internal processes (and update if required), to ensure the commitments continue to be met. A review may arise from the following:

- If initiated by BHP as part of the adaptive management process.
- If triggered by a non-achievement of a performance targets and/or failure to implement management actions.

Changes to management and monitoring commitments may arise from the following:

- BHP reviews of monitoring and management commitments or relevant government agencies develop new or amend existing guidance or policy.
- BHP adds components when a change to the existing operation is proposed.
- BHP adds or amends components when there is a change to the Activity, if approved.

9 References

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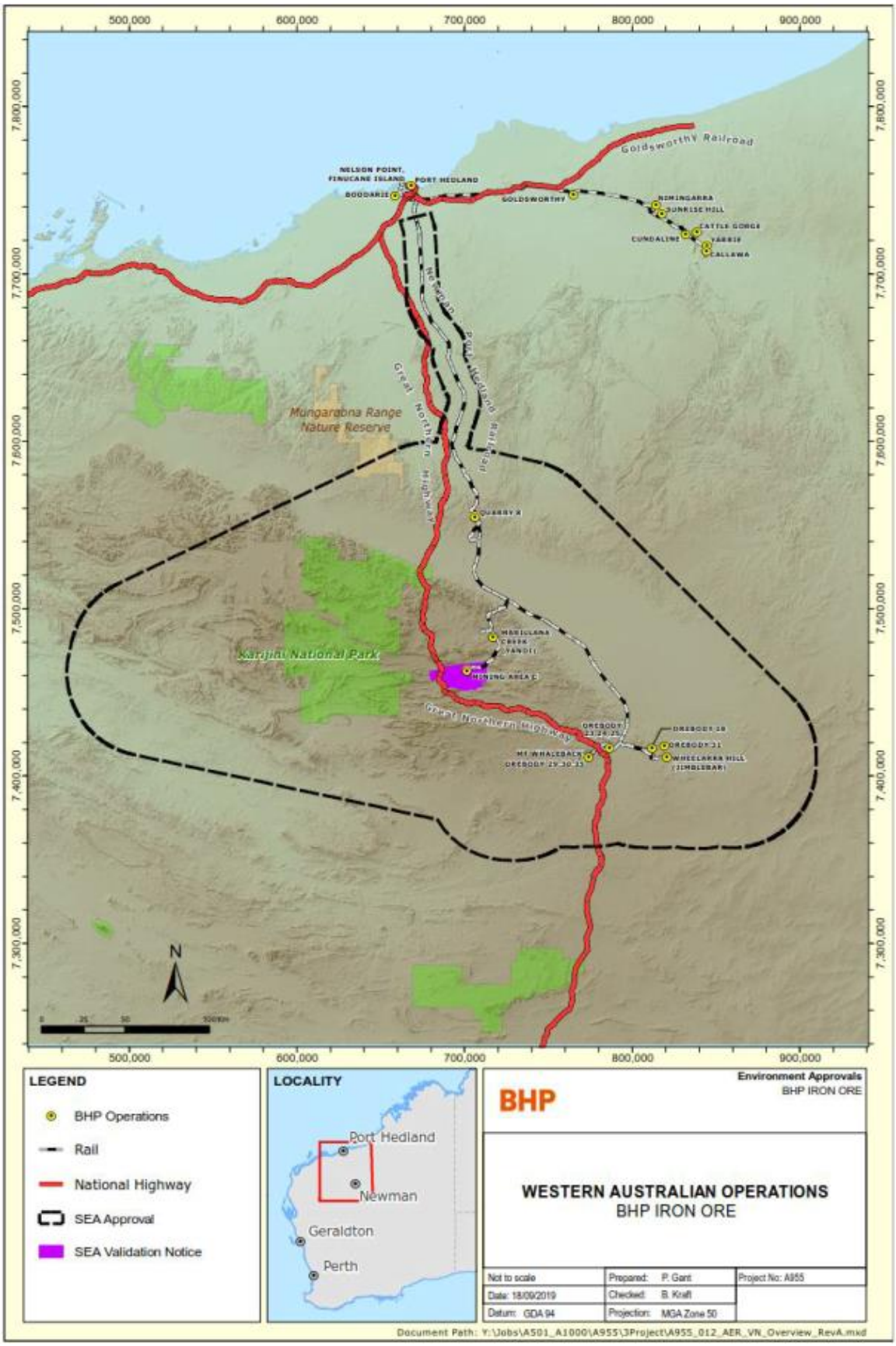
Appendices

Appendix 1 Strategic Assessment Area



Appendix 2 Summary of Historical Fauna Surveys

Title/ Reference	Survey Level*	Sampling Methods and Survey Effort	Timing	Habitats	Significant Fauna Recorded
Yandi Stage 2 Biological Assessment Survey (Ecologia 1995)	Detailed (Level 2)	10 trapping sites - Pit traps (140 trap nights) - Elliot traps (200 trap nights) - Bird census (5 person hours) - Microhabitat searches Fish sampling (spotlights) Nocturnal searches (4 person hours) Systematic traverses / transect searches	May - June 1995	Six broad fauna habitats were mapped including Riverine, Drainage Gully, Colluvial Flat, Outwash Flat, Scree Slope and Mesa Top.	One Threatened fauna listed under the EPBC Act and/or the BC Act recorded: Pilbara Olive python (*Liasis olivaceus barroni*; Vu). One Priority fauna species was recorded: Western Pebble-mound Mouse (*Pseudomys chapmani*; P4). One 'other specially protected species' (OS) listed under the BC Act recorded: Peregrine Falcon (*Falco peregrinus*; OS).
Yandi Stage 2 Iron Ore Project - Pebble-mound Mouse Pseudomys chapmani Site Survey (Ecologia 1996)	Targeted	Systematic traverses / transect searches	19-21 Dec 1995	N/A	A total of 121 Pebble-mound mouse mounds were recorded within the survey area and comprised 47 active mounds (Category 3), 31 dormant mounds (Category 2) and 43 abandoned mounds (Category 1 and 0 combined).
Marillana Creek Western Access Corridor - Biological Assessment (Halpern Glick Maunsell 1999)	Basic	Not applicable	23-30 Apr 1999	Five fauna habitats mapped including: Riverine, Minor Drainage, Outwash Plains, Mulga Woodland and Hills and Ridges.	One Priority fauna species recorded: Western Pebble-mound Mouse (*Pseudomys chapmani*; P4).
Yandi Life of Mine Flora and Fauna (Maunsell 2003)	Basic and targeted	Systematic traverses / transect searches 10 hours of nocturnal searches Bird census Bat call recordings	23-28 Sept 2003	Not mapped at time of survey.	One Priority fauna species was recorded: Western Pebble-mound Mouse (*Pseudomys chapmani*; P4). Two Migratory species listed under the EPBC Act and/or the BC Act were recorded: Great Egret (*Ardea* alba) and Common Sandpiper (*Actitis hypoleucos*).
Yandi Stockyard and Overland Conveyor Fauna and Flora Assessment (Ecologia 2004)	Desktop	Not applicable	October 2004	Not applicable	Not applicable

Title/ Reference	Survey Level*	Sampling Methods and Survey Effort	Timing	Habitats	Significant Fauna Recorded
Marillana Creek (Yandi) Iron Ore Mine Modification Level 2 Fauna Survey (Ecologia 2008)	Detailed (Level 2)	Six fauna sites 960 pit trap nights 960 funnel trap nights 960 Elliot trap nights 96 cage trap nights 1620 bird census minutes 3660 minutes of opportunistic searches 240 minutes of bat recordings 1825 minutes of nocturnal searches	19-30 Mar 2008	Fauna habitats only mapped at the six survey sites, not for the entire survey area. Fauna habitats included Minor Drainage Line, Hillslope, Outwash Plain and Open Plain.	One Priority fauna species was recorded: Western Pebble-mound Mouse (*Pseudomys chapmani*; P4).
Newman to Yandi Transmission Line Terrestrial Vertebrate Fauna Assessment (ENV 2009)	Basic (Level 1)	Diurnal fauna searches Nocturnal searches Bird census Bat calls (Anabat) Opportunistic observations	7-16 May 2009	Seven fauna habitat types were identified including Alluvial Plain, Scree/Low Hills, Riverine, Stony Plain, Gorge/Gully, Minor Drainage Line, and Hill Crest	One Priority fauna species was recorded: Western Pebble-mound Mouse (*Pseudomys chapmani*; P4).
Yandicoogina Junction South-West and Oxbow Fauna Survey (Biota 2010)	Detailed (Level 2)	11 trap sites Bird census (610 minutes) Pit traps (360 nights) Funnel traps (360 nights) Elliot traps (310 nights) Bat survey (11 Anabat/Harp Trap nights) Opportunistic observations	5-12 Jul 2008 4-7 Mar 2010	Five fauna habitats were identified including Major Drainage Line, Drainage Line, Hillslopes, Plain and Valley Floors, Rocky Breakaways and Screes	One Priority fauna species was recorded: Western Pebble-mound Mouse (*Pseudomys chapmani*; P4).

Title/ Reference	Survey Level*	Sampling Methods and Survey Effort	Timing	Habitats	Significant Fauna Recorded
Yandi Vertebrate Fauna Review (Biologic 2011)	Basic (Level 1) and targeted	Bat survey (Four Anabat nights) Motion cameras (effort not reported) Transect searches Opportunistic observations Diurnal searches (47.5 hours)	9-17 Dec 2010	Five fauna habitats mapped including Boulder Pile, Hill Crest and Slope, Major Drainage Line, Mulga Woodland, and Sandplain	Two Threatened fauna listed under the EPBC Act and/or the BC Act were recorded: Pilbara Olive Python (*Liasis olivaceus barroni*; Vu) and Northern Quoll (*Dasyurus hallucatus*; En; note this species record is a BHP record, reported in this study). One Priority fauna species was recorded: Western Pebble-mound Mouse (*Pseudomys chapmani*; P4). One Migratory species listed under the EPBC Act and/or the BC Act was recorded: Fork-tailed Swift (*Apus pacificus*)
Consolidated Fauna Habitat Mapping (Biologic 2014)	Desktop	Not applicable	2014	Ten fauna habitat types were mapped within the Yandi Development Envelope: Stony plain, Sandy/Stony Plain, Sand Plain, Mulga Woodland, Minor Drainage Line, Major Drainage Line, Hardpan Plain, Drainage Area/Floodplain, Hillcrest/Hillslope, and Calcrete Areas.	Not applicable

Title/ Reference	Survey Level*	Sampling Methods and Survey Effort	Timing	Habitats	Significant Fauna Recorded
Ministers North Level 1 Fauna Survey (GHD 2021)	Level 1	Habitat mapping, opportunistic species list, and bird and bat acoustic data.	9-20 September 2019	Eight fauna habitat types (excluding disturbed areas) were identified within the survey area including: Hillcrest/Hillslope, Minor Drainage Line, Major Drainage Line, Gorge/Gully, Drainage Area/Floodplain, Breakaway/Cliff, Rehabilitated Area, Basalt Outcrops and Cleared/Disturbed.	The Ghost Bat was recorded during the survey, but not within the Activity Area or 500 m buffer.

Appendix 3 Contemporary survey reports Provided separately

Appendix 4 Ghost Bat cave categorisation

Appendix 4a: Ghost Bat roost categorisation according to Bat Call WA (2021a)

Roost type	Roost features
Category 1 caves (maternity/diurnal roost sites with permanent ghost bat occupancy)	Permanent colonies with large but fluctuating populations. Usually represented by underground mines in the Pilbara. There are no documented Category 1 caves in the Hamersley Ranges. Caves are deep and dark with one or more elevated roosting chambers. Category 1 caves are considered critical habitat.
Category 2 caves (maternity/diurnal roost caves with regular occupancy)	Have one or more of the following cave characteristics: • one or more roosting chambers behind a narrow entrance or in-cave constriction that is elevated to reduce the risk of predation, always dark (though not necessarily completely dark), holds a steady microclimate, and contains substantial of evidence of historical occupation (for example, extensive scat pile/s typically comprising >2,000 scats, sometimes but not always mixed with a food midden) • occupation by multiple individuals (preferably females) during the species' late pregnancy or lactating period • caves used by multiple individuals on a semi-permanent or recurring basis • the presence of one or more large scat piles/middens where scat analysis shows usage by multiple females with high levels of progesterone. Category 2 caves are considered critical habitat.
Category 3 (diurnal roost caves with occasional occupancy)	These caves are usually less well developed as underground structures. They may be shallower allowing some light into their deeper areas, have a wide and not constricted entrance or not have a stable microclimate in an elevated roosting chamber. They will, though, have a roosting chamber with a ceiling over 1.5 m high and usually, but not always, have significant scats and food middens. Isolated Category 3 caves are not considered critical habitat. Where multiple Category 3 caves occur in proximity to a Category 2 cave, they may be considered critical habitat if they form an 'apartment block'.
Category 4 (nocturnal roost caves with opportunistic usage)	These tend to be shallow caves, shelters and deep overhangs that are used in at least an opportunistic manner by itinerant ghost bats. This may be anything from a single foraging visit to a longer visit, with a resting period or possibly a feeding session.

Appendix 5 Jugari Conceptual hydrogeological model
Provided separately

Appendix 6 Public Consultation – Response to Comments

Marillana Creek (Yandi) Validation Notice

EPBC Ref: SA017

Comment Number	Issue	Comments	BHP Response
General comments			
1	Hydrological modelling/surveys	The Activity involves groundwater extraction and surplus water discharge. The hydrological predictions (modelling) referred to in the draft validation notice were not published by BHP during the public consult period for the draft validation notice. Please ensure the relevant hydrological modelling or studies (groundwater and surface water impact assessments) supporting the analysis are appended to the final validation notice.	BHP have included the hydrogeological model with the final Validation Notice (Appendix 5). The expected maximum wetting front associated with the proposed surplus water creek discharge, as detailed in the final Validation Notice, was determined by BHP using historical observations of creek discharge and proposed estimated discharge volumes. As such, there is no report to append to the final Validation Notice.
2	Description of activities planned as part of the action	The project description requires revision. The project elements are simply listed. The draft validation notice should describe the components of the Activity in enough detail to assist the reader to identify potential impacts to Program Matters. Some project elements can be briefly described such as the key infrastructure structures, while others such as hydrological changes, overburden management and closure activities require more thorough information. The mine decommissioning and closure discussion is also generic and requires more detail.	Section 2.2 has been updated to include additional information on project elements, infrastructure, decommissioning and closure.
3	Significant residual impact	Replace all references to 'significant residual impact' with 'residual impact' throughout the validation notice, remove references to 'significance' as a test/threshold.	Noted, updates made to the final Validation Notice accordingly.
Glossary and abbreviations			
4	Conceptual Clearing Extent	We note that the term Conceptual Clearing Extent (the maximum amount of vegetation to be cleared) is not employed in the draft validation notice as per previous validation notices.	BHP notes in previous validation notices the 'Conceptual Clearing Extent' is defined as 'the maximum amount of native vegetation to be cleared'. The final Validation Notice does not use this terminology; however, it consistently states that up to 95 ha of native vegetation may be cleared within the Activity Area. This clearly conveys the maximum clearing extent and is considered accurate and sufficient. No change to the final Validation Notice.
1. Introduction			
5	1.7 Decision for a Validation Notice Table1-2 Notifiable Action Trigger for the Activity (p.5): Greater Bilby	The statement that no critical habitat for the Greater bilby is present due to the lack of old-growth Triodia applies to Night parrot habitat. Greater bilby critical habitat includes additional habitat types, as outlined in the Assurance Plan and Offsets Plan.	Text in Table 1-2 has been amended to 'There is no critical habitat for the Greater Bilby present within the Activity Area or 500 m buffer due to the lack of extensive connected sand plain habitat, given that most of the soils are stony or hard and not suitable for burrowing and given the high level of existing disturbance from mining operations.' Suitable habitats for the Greater Bilby have been revised to include Drainage Area/Floodplain, Sand Plain, Stony Plain and Major and Medium Drainage Line habitats, noting that these are considered marginal supporting habitat. This has been updated in Table 1-2 and throughout Section 5.5 of the final Validation Notice.
2. Project disturbance and description			
6	2.1 Proposed disturbance: Table 2-1 SAA Program Disturbance Allocation (p. 13)	The cumulative program disturbance remaining (ha) is incorrectly calculated in the final 3 rows and should be amended.	Table 2.1 has been updated to amend errors.
7	2.2-1 Activity description (p.13)	Further information is required on Activity components, including clarification of project and industry terminology (i.e., bunds). The description should support consideration of direct and indirect impact	Section 2.2 of the final Validation Notice has been updated to include additional information on the Activity components. Figure 1-2 has also been updated to include location of dewatering infrastructure. Additional impact assessment information has been provided in Section 2.2 and Section 5.2.5.

Comment Number	Issue	Comments	BHP Response
		pathways. The following matters should be addressed to identify impacts to Program Matters: overburden management and whether overburden storage areas are proposed, including any acid or metalliferous drainage risk assessment and outcomes. proposed topsoil stockpiles and laydown areas effects of landforms changes on surface water flows number, permanence, and design of creek crossings flood mitigation measures	
8	2.2-3 Activity description (p.13)- Figure 1-2 Activity Area	The figure does not show the indicative location of all the project elements to identify potential impacts to Program Matters. Locations of OSAs (if any), water supply infrastructure (pipelines and bores), surplus water discharge points, and supporting infrastructure should be shown.	Figure 1-2 has been updated to include dewatering infrastructure as requested. The Activity will utilise existing E7 and E4 in-pit OSAs. No additional disturbance is required for OSAs.
3. Stakeholder engagement			
No comment.			
4. Validation process			
4.1 Guidance			
No comment.			
4.2 Surveys and studies			
9	4.2-1 Surveys and studies (p.22)	We note that BHP was not able survey a section of the south-western portion of the 500 m buffer on Rio Tinto tenure, please also include if BHP requested access from Rio Tinto to facilitate surveying of the area.	Section 4.2 updated in the final Validation Notice based on the Biota (2026) fauna survey report. BHP did request access from Rio Tinto (RTIO) to facilitate surveying in the 500m buffer. BHP was granted access to part of the RTIO tenure which occurs within the 500m buffer; however, this access was not granted until part way through the survey, and as such the survey team was unable to deploy sampling sites in this area due to time constraints. Another area in the northwest section of the 500m buffer could not be accessed due to safety risks associated with crossing a mining haul road. However, fauna habitats were still mapped based on satellite imagery and observations made on site.
10	4.2-2 Table 4.2: Recent terrestrial fauna and surveys (p.23)	Yandi E8 Additional Targeted Fauna Survey (Biota 2026 in prep) is the most recent contemporary survey and focuses on MNES but the results of the survey are pending. The validation notice should not be finalised until this survey is finalised. Please publish the survey as an appendix to the final validation notice.	The survey is finalised and the report is attached to the final Validation Notice (Appendix 3).
11	4.2-3 Table 4.2: Recent terrestrial fauna and surveys (p.24)	Not all the surveys in the table are recent surveys as they were undertaken more than 5 years ago. The two GHD studies no longer constitute contemporary data as they were conducted in 2019 (GHD, 2021a) and 2020 (GHD, 2021b). Please amend by including the two surveys as historical surveys at Appendix 2 and remove from Table 4-2.	The GHD (2021) reference has been removed from Table 4-1 and put into Appendix 2, noting that there are no surveys dated 2021a and 2021b and no Table 4-2.
5. Program matters			
5.1 Fauna habitats			
12	5.1-1 Table 5-1: Fauna habitats in the Activity Area (pp.28-31)	Consistent with previous validation notices and for clarity to the reader, we recommend updating the table to show the calculated extent of habitat type within the Activity Area and the extent to be cleared (whether that is within the Indicative Footprint or Indicative Footprint Elements, noting the change in definition used in this draft validation notice).	As defined in the Glossary and Abbreviations, the 'Activity Area' is the spatial extent within which the Activity may be undertaken and represents the maximum area that could be directly disturbed. The 'Indicative Footprint Elements' represents the expected physical elements of the Activity and their approximate location and extent within the Activity Area, based on the current design understanding. However, the Indicative Footprint Elements are subject to change during detailed

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			design and implementation, and direct disturbance may occur at any location within the Activity Area. As the Activity design and disturbance footprint are currently indicative only, approval is being sought to allow habitat clearing at any location within the defined Activity Area. Accordingly, for the purposes of the final Validation Notice impact assessment and Table 5-1, it has been assumed that all habitat within the Activity Area may be cleared (i.e. up to 95 ha). This approach provides design flexibility and is intentionally conservative; however, it is likely to overestimate the extent of habitat within the Activity Area that will ultimately be cleared. Consistent with the mitigation hierarchy, BHP would seek to avoid and minimise disturbance to higher value habitats within the Activity Area as far as reasonably practicable, including Artificial Wetland and Major Drainage Line habitat, through detailed design and siting. No change to Table 5-1 as the extent that may be cleared is already shown, however, the above explanation has been added as a table footnote.
13	5.1-2 Table 5-1: Fauna habitats in the Activity Area (pp.28-31)	What data has been used to calculate the habitat types and extents for the areas within the 500 m buffer and Activity Area that were surveyed as part of the Yandi E8 Additional Targeted Fauna Survey (Biota 2026 in prep) that is listed as 'results pending' in Table 4.2? This may need to be amended depending on the survey results.	The data and maps in the final Validation Notice have all been revised to incorporate updates to habitat mapping and calculated extents following receipt of final survey report and data from Biota 2026. These revisions have not resulted in any change to the environmental assessment outcomes or conclusions.
14	5.1-3 Table 5-1: Fauna habitats in the Activity Area (p.31)	The draft validation indicates the Activity Area incorporates disturbed/cleared areas not considered to be habitat for Program Matters and is not included in residual impact or offset calculations for the Activity. We recommended - as a general principle - including impact to degraded habitat as a residual impact from the Activity. The rationale for this is the lost opportunity for theses habitats to be rehabilitated and provide suitable habitat for Program Matters.	Areas mapped as 'Disturbed/Cleared' are devoid of vegetation or may contain some minor regrowth (including weeds). These areas do not provide fauna habitat or value to terrestrial fauna (Biologic 2023a, 2025; Astron 2023). Disturbed/Cleared areas are distinct from 'Degraded' fauna habitat. While Degraded fauna habitats have been modified, they are still been mapped as fauna habitat because they retain some ecological value and continue to provide value to fauna. BHP preferentially utilises Disturbed/Cleared areas to avoid and minimise impacts to critical and supporting habitat for Program Matters. Disturbed/Cleared areas are not Critical or Supporting fauna habitat for Program Matters. As such, offsets are not required by the APOP (BHP 2023). Fauna habitats that are Degraded have been included in the habitat mapping and calculations and included in the proposed offsets, noting that there is no differentiation between habitats in 'Good' condition vs 'Degraded' condition.
5.2 Pilbara Olive Python			
15	5.2.5-1 Impact Assessment: Habitat loss (p.38)	Explain how habitat connectivity and ecological function will be maintained despite clearing and change to Marillana Creek. Include a table showing the extent of critical and supporting habitat within the Activity Area and within areas to be cleared. Table 5-2 only shows the current extent of Pilbara Olive Python habitat.	Section 5.2.5 of the final Validation Notice has been updated to detail that habitat connectivity, and ecological function will be maintained within Marillana Creek through use of creek crossings for haul roads and light vehicle access. The creek crossings will be designed with poly pipes as culverts which will convey surface water flows and not prevent or restrict the movement of water or fauna in the creek. The maintenance of the surface water flows along Marillana Creek will also continue to provide water to riparian vegetation, and in turn maintain critical and supporting habitat for the Pilbara Olive Python. Pilbara Olive Pythons would be expected to continue to disperse upstream and downstream of the creek crossings through the use of culverts/poly pipes installed within the creek crossings. BHP will implement reduced speed limits of 40km/h over the creek crossings in the Activity Area to minimise the risk of vehicle interactions with Pilbara Olive Pythons. Critical habitat and undeveloped areas adjacent to the Activity Area and along Marillana Creek maintain habitat connectivity for the Pilbara Olive Python (Figure 5-4). As discussed in comment number 12, the environmental assessment is conservative and assumes that all habitat within the Activity Area may be disturbed (i.e. up to 95 ha). As such, no change to Table 5-2 is proposed other than inclusion of an explanatory table note. Consistent with the mitigation hierarchy, BHP would seek to minimise disturbance as far as reasonably practicable to

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			the Major Drainage Line and Artificial Wetland habitat listed in Table 5-2 and shown in Figure 5-4. For example, proposed perpendicular creek crossing will minimise habitat disturbance.
16	5.2.5-2 Impact Assessment: Changes to fauna habitats from changes to hydrological regimes (p.38)	Please consider the following: a) Briefly describe surplus water discharge along Marillana Creek in the project description. b) Explain potential impacts to deep-rooted vegetation, wetting fronts, drainage patterns, and creek crossings. c) Address cumulative impacts to water flow and quality from existing and proposed water abstractions and infrastructure. d) Justify predictions that surplus water discharge will counterbalance drawdown, including impacts after mine closure. The draft validation notice states 'proposed surplus water discharge along Marillana Creek is predicted to counterbalance the drawdown and maintain groundwater levels within this area'.	a) The Project Description (Section 2.2) has been updated in the final Validation Notice to describe surplus water discharge along Marillana Creek, detailing a maximum discharge of 26 ML/day, which is within current State-government environmental operating licence (L6168/1991/11) limits for the Yandi operation, and an estimated maximum wetting front distance of 9 km downstream. The impact assessment in Section 5.2.5 has been updated to provide further information on the following: b) Deep-rooted vegetation: could experience a decline in condition due to groundwater drawdown from the Activity, as discussed in comment number 18. Currently the Marillana Creek alluvium in the vicinity of E8 maintains an almost fully saturated profile year-round regardless of rainfall due to the presence of the surplus water discharge outlet. As such, deep-rooted vegetation downstream of the discharge point has been maintained and is unlikely to be impacted by drawdown while the surplus water discharge continues and the alluvium is saturated. Potential impacts following cessation of discharge during closure are discussed below in response to item (d). Wetting front: the Activity is not anticipated to result in decline of riparian vegetation from discharge, as there will be no changes to the existing maximum wetting front reached (~9 km), and the proposed discharge volume for the Activity will be within the existing State-government environmental operational licence (L6168/1991/11) limits. Drainage patterns: the potential reduction in surface water availability from loss of catchment due to the Activity is predicted to be up to 0.01%, for the Marillana Creek catchment. This small reduction is not considered to be locally significant, particularly given the highly seasonal nature of streamflow in the Pilbara, as well as the annual variability of rainfall. Stream flow within Marillana Creek will be maintained. Rehabilitation and closure of the Activity will be managed through the Yandi MCP (BHP 2025a). At closure, the pit will be backfilled to the invert of the Marillana Creek to prevent creek capture, minimising impacts to surface water flows. Creek crossings: haul roads and light vehicle tracks across Marillana Creek will be designed to convey flows and not prevent or restrict the movement of water in the creek. Creek crossings will be constructed level will the current flow channel and/or designed with culverts to convey flows. c) Surface water flows into the Activity Area have been modified due to neighbouring mining operations. The Activity will not result in additional significant changes to water flow due to its relatively small catchment area (discussed above) and the design of the creek crossings and flood bunds around the pit, which will maintain surface water flows within the creek flood plain. Monitoring of surplus water discharge will be undertaken consistent with existing State-government environmental operational licence (L6168/1991/11) conditions to detect potential water quality changes. d) Groundwater levels in the Marillana Creek alluvium aquifer system fluctuate with ephemeral rainfall and streamflow. During ephemeral creek flow events the alluvium can become fully saturated. Once rains subside groundwater levels in the alluvium also subside and monitoring has shown that most bores will dry out completely or retain a few meters of water. The only exception to this is a groundwater bore (HYM0011M) in the alluvium which maintains an almost fully saturated profile year-round regardless of rainfall due to its proximity to the existing Yandi surplus water discharge outlet. The discharge outlet is adjacent to the E8 deposit. Currently high-density riparian vegetation is being supported by the existing Yandi surplus water discharge, which has created an Artificial Wetland. This is despite groundwater drawdown within the Channel Iron Deposit (CID) hydrogeological unit from existing BHP and third-party mining dewatering operations, and which have collectively reduced groundwater levels at E8 to

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			approximately 52 m below ground level (mbgl). As such, riparian vegetation surrounding and downstream (east) of the discharge point within the Activity Area is unlikely to be impacted by additional groundwater drawdown from the Activity while the surplus water discharge continues and the alluvium remains saturated. Following cessation of surplus water discharge during mine closure, riparian vegetation communities are expected to change to a new equilibrium commensurate with the post-mining availability of groundwater. The Eucalypt species are likely to be more resilient to a change in water levels, however some stands of *Melaleuca argentea* may not remain viable (BHP 2025). The potential for future decline in health of riparian vegetation following cessation of discharge is addressed in the Yandi Mine Closure Plan (BHP 2025) and includes reference to the potential opportunity, through closure and backfill design of the E8 pit, to direct water to Marillana Creek for the support of riparian vegetation downstream of the discharge location. This is currently being explored with Traditional Owners, and if feasible, will be incorporated into future updates to the Yandi Mine Closure Plan (BHP 2025a).
17	5.2.5-3 Impact Assessment: Changes to fauna habitats from changes to hydrological regimes (p.38)	Have cumulative impacts from water abstraction been considered in the hydrological modelling, such as drawdown from existing BHP operations and nearby third-party operators?	As per comment number 16(c), cumulative impacts from water abstraction have been considered in the hydrological modelling, including drawdown from existing BHP and nearby third-party operations. Refer to comment number 18 for further information.
18	5.2.5-4 Impact Assessment: Changes to fauna habitats from changes to hydrological regimes (p.38)	Has an analysis of adverse impacts to Program Matter habitat that may occur beyond the Activity Area from changes to groundwater and surface water regimes been undertaken by BHP, such as a decline in Marillana Creek pools and ground water dependant vegetation in Yandicoogina Gorge? Analysis of hydrological changes should include discussion and justification where BHP's analysis shows no impact will occur.	An analysis of potential adverse impacts to Program Matter habitat that may occur beyond the Activity Area from changes to groundwater and surface water regimes has been undertaken by BHP, including for Marillana Creek pools and Yandicoogina Gorge, and is provided in Section 5.2.5 in the final Validation Notice. This analysis is summarised below. **Changes to groundwater regimes** Dewatering for the Activity will not increase the total volume of groundwater abstraction as authorised by the existing State-government licence to take groundwater (GWL89501) for the Yandi mine. Groundwater levels at E8 and surrounds are currently influenced by cumulative groundwater drawdown from BHP and third-party dewatering operations. Current groundwater levels within the Channel Iron Deposit (CID) at E8 are approximately 52 m below ground level (mbgl). Predicted groundwater drawdown contributions from E8 are illustrated in Figure 2-1 in the final Validation Notice. The figure shows that an additional 20 m of groundwater drawdown is predicted within the CID and 10m in the undifferenced basement hydrogeological units surrounding E8. The figure also shows the maximum extent of the modelled 1 m drawdown contour for each hydrogeological unit at the end of the dewatering. The predicted drawdown of the Activity does not intersect with Marillana Creek pools or Yandicoogina Gorge and therefore is not likely to impact Program Matter habitat in these areas (see Figure 2-1 in the final Validation Notice). The predicted drawdown of the Activity intersects with areas containing groundwater-dependent vegetation (GDV) within the Activity Area and/or 500m buffer, which provides critical and/or supporting habitat for Program Matters, including for the recorded Pilbara Olive Python. The potential impacts of groundwater drawdown from the Activity on GDV are limited to shallow water tables in the alluvium where GDV is likely to occur. Whilst the basement drawdown contours

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			have been considered, the CID drawdown contours are the primary focus of the impact assessment given groundwater drawdown in the CID is predicted to result in drawdown in the alluvium where obligate GDV primarily access groundwater (Astron 2020; Golder Associates 2015). GDV has been rated as High, Moderate, Low and Negligible likelihood depending upon the vegetation association and presence/absence of obligate and facultative phreatophyte species. The framework for these GDV ratings is provided in Biologic (2024) which has been included with this final Validation Notice. High likelihood GDV comprise vegetation associations that are dominated by obligate phreatophyte species *Melaleuca argentea*, whilst Moderate likelihood GDV comprises vegetation associations dominated by facultative phreatophyte species *Eucalyptus camaldulensis subsp. refulgens* and/or *Eucalyptus victrix*. Low likelihood GDV may contain some scattered facultative phreatophyte species, *Eucalyptus camaldulensis subsp. refulgens* and/or *Eucalyptus victrix*; however, these species are not dominant, whilst Negligible likelihood GDV contains no obligate or facultative phreatophytes. In total, there is 3.6 ha of GDV, including High (0.6ha) and Moderate (3 ha) likelihood GDV, within the modelled groundwater drawdown area of the Activity, outside the Activity Area (Figure 2 1). All of this occurs within the Major Drainage Line habitat associated with Marillana Creek which provides critical habitat for Pilbara Olive Python (Figure 2-1; noting that GDV within the Activity Area is proposed for clearing so is not considered further with regard to drawdown). Areas of GDV that occur downstream (east) of the surplus water discharge point, are unlikely to experience a decline in condition during operations because the surplus water discharge along Marillana Creek will counterbalance the drawdown and maintain groundwater levels throughout this area by keeping the alluvium saturated. Areas of GDV that occur upstream of the discharge point, to the northwest of the Activity Area, occur within the basement drawdown, but outside the predicted CID drawdown, where impacts are likely to be less pronounced (if at all) (Figure 2-1). This area occurs within the existing drawdown area of Yandi. Impacts to GDV in this area as a result of the Activity are therefore unlikely. Groundwater drawdown in the basement does extend beyond the Activity Area, mainly throughout third-party mining operations, but also to areas further south, beyond the third-party mining operations (Figure 2-1). Whilst there is some Pilbara Olive Python habitat in this area (i.e. Breakaway/Cliff, Minor Drainage Lines and Gorge/Gully), there are no identified groundwater dependant values that could potentially be impacted by drawdown (i.e. no High or Moderate likelihood GDV and no groundwater dependent pools). In summary, the small amount of critical Pilbara Olive Python habitat, being High to Moderate likelihood GDV, surrounding the Activity Area is unlikely to be impacted by additional groundwater drawdown associated with the Activity given that the surplus water discharge will counterbalance impacts to GDV downstream, whilst GDV areas upstream are located outside the predicted CID drawdown, where impacts are unlikely to occur. GDV (riparian vegetation) will be monitored and managed in accordance with the commitment details in Table 8-1 in the final Validation Notice. **Changes to surface water regimes** Discharge has been ongoing at the current surface water discharge outlet for approximately 15 years. Historical monitoring of the vegetation downstream of the discharge location, within the Development Envelope, has shown no significant adverse impacts on riparian vegetation health from surface water discharge. An Artificial Wetland has, however, been created around and downstream of the discharge outlet. Discharge volume associated with the Activity will be less than historical highs, relatively short term (less than 5 years), and managed in accordance with existing State-government

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			environmental operating licence (L6168/1991/10) conditions. As such, adverse impacts to Program Matter habitat (i.e. Major Drainage Line) at this location are not predicted. At closure of the Yandi mine, surplus water discharge will cease, and the Artificial Wetland is unlikely to persist. Vegetation is expected to change to a new equilibrium commensurate with natural ephemeral creek flow and with the post-mining availability of groundwater.
19	5.2.5-5 Impact Assessment: Vehicle and infrastructure interactions (p.39)	The conclusion that vehicle strike is very low is not supported in the absence of mitigation measures.	Section 5.2.5 and Table 8-3 have been updated to include more information on mitigation measures to minimise adverse impacts to Pilbara Olive Python from vehicle strike. Construction will be mostly undertaken during day-light hours to minimise impacts to nocturnal fauna species such as the Pilbara Olive Python, and a 40 km/hr speed limit will be imposed at creek crossings within the Activity Area to minimise the risk of vehicle strike or fauna interactions. With the mitigation measures in place, the risk of a vehicle strike is considered low.
20	5.2.6 Mitigation Hierarchy: (pp.38-40)	The application of the mitigation hierarchy is inadequately documented. Demonstrate how avoidance and minimisation measures informed Activity design, including consideration of alternative layouts.	Section 5.2.6 has been updated to include additional information detailing the application of mitigation hierarchy, and how avoidance and minimisation measures have been considered in the Activity scope and design.
21	5.2.7 Mitigation Hierarchy – Minimise (p.40)	Provide further detail, including: a) Proposed measures to minimise impacts of dewatering and discharge of surplus water on habitat along Marillana creek b) Proposed speed limits to mitigate the risk of vehicle strike to the Pilbara Olive Python. c) Purpose of electronic demarcation of new records. d) Feral cat management practices and commitments. The department considers reliance on sightings to instigate feral cat trapping may not be adequate to ensure feral cat numbers are appropriately managed.	(a) Section 5.2.6 has been updated to include proposed measures to minimise impacts to fauna habitat from dewatering and discharge to Marillana Creek. (b) Speeds will be limited to 40 km/hr for creek crossings within the Activity Area. This has been updated in Table 8-3. (c) The purpose of the Electronic demarcation of new records is for use in the BHP Land Disturbance Permitting system, to highlight the presence of conservation significant fauna species. Once entered into the system, areas that have records of significant species can be excluded from proposed disturbance activities (if practicable) and/or mitigation measures required as part of the land disturbance permit, such as fauna spotters. (d) BHP has updated Table 8-3 to include the following feral cat management commitments. Feral cat management will be undertaken in accordance with the WAIO Animal and Pest Management Plan (Document 0121815). This plan requires: • All sightings of feral cats are required to be reported in the Event Management System (EMS). • Inductions provided to all personnel. • Monitoring information is captured through fauna surveys, pre-clearance assessments, routine site activities, and pest control records. • Any trapping or baiting programs are only undertaken where approved, coordinated with site Environment Teams, and reported in EMS. Given the nature (limited non-process infrastructure, including no accommodation camp) and scale (up to 95 ha of disturbance) of the Activity, BHP considers that the existing management measures for feral cats are appropriate to minimise potential impacts on Program Matters recorded (i.e. the POP) within the Activity Area. BHP applies an adaptive management framework (Section 8.5), under which management and mitigation measures are progressively improved and refined, or alternative solutions adopted. Feral cat management practices will be considered as part of this adaptive management approach as required.
22	5.2.9 Monitoring (p.41)	Refer to monitoring comments at section 8.1.	See response to monitoring comments below.

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5.3 Northern Quoll			
No comments.			
5.4 Ghost Bat			
23	5.4.4-1 Ghost Bat Survey Coverage - Figure 5-9 (p. 58)	Confirm survey coverage east of the Activity Area (Figures 5-9). This is relevant to determine regional context and the nearby records/roosts.	Areas east of the Activity Area, including within the 500m buffer, comprise of third-party mining tenements and operations. Biota (2026) conducted transect searches, habitat assessments and Bat Detector sampling sites in the 500m buffer, east and northeast of the Activity Area (refer to Figure 5-9). No signs of Ghost Bats were detected during the survey. The extent of current and historical survey coverage is considered adequate to determine regional context and nearby records/roosts. A population of Ghost Bat is present within the wider area. However, no Ghost Bats have been detected in the Activity Area, and no transient or dispersing individuals have been recorded within the 500m buffer, or within the BHP Yandi mining area during recent or historical surveys. No change to the final Validation Notice.
24	5.4.4-2 Ghost Bat Records - Figure 5-10 (p. 59)	Clarify apparent discrepancies between Figure 5-10 and Biologic (2025) survey results. The figure indicates that the nearest contemporary Ghost Bat record is 2.7 km from the Activity Area. However, the MAC to Yandi Corridor & Runaway Valley North survey (Biologic 2025) seems to indicate records of Ghost Bat activity (alive individual, scats, and secondary signs) closer to the site in 2024 (page 74). Please clarify if required.	The map shown in the final Validation Notice is accurate and no further update is required. BHP confirms that the nearest contemporary Ghost Bat record is 2.7 km from the Activity Area as recorded during the Biologic (2025) survey.
5.5 Greater Bilby			
No comments.			
5.6 Pilbara Leaf-nosed Bat			
No comments.			
5.7 Grey Falcon			
25	5.7.2 Local Habitat (p.76)	Confirm survey effort included visual surveys of tall trees along major drainage lines within the 500m buffer area.	Grey Falcons were targeted during the bird census surveys and opportunistically throughout the targeted fauna surveys undertaken within the Activity Area and 500m buffer (Astron 2023, 2024; Biologic 2023, 2025; Biota 2026; Spectrum Ecology 2026). Visual surveys of tall trees were undertaken during transect/targeted searches and during habitat assessments. Targeted searches for Grey Falcon were undertaken within Major Drainage Line, Medium Drainage Line, Drainage Area/ Floodplain, Undulating Low Hills, Hillcrest/ Hillslope, Hardpan Plain and Stony Plain habitats, noting that preferred habitat (i.e. tall trees) for the species was mainly absent from the Activity Area and 500m buffer (Biologic 2025). Some potential nesting habitat within large trees associated with Major Drainage Line habitat were visually surveyed from the ground where present (Astron 2023, 2024) and targeted and opportunistic transect searches focused on observing active individuals and/or secondary evidence such as nests, feathers or eggs (Biologic 2023, 2025). Survey effort is considered sufficient and no Grey Falcon individuals or nests were identified. Figure 5-18 showing survey coverage and sampling effort for Grey Falcon has been updated in the final Validation Notice.
5.8 Night Parrot			
No comments.			

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6. Compliance tracking and Annual reporting			
No comments.			
7. Offset Proposal			
26	7.3 Proposed offset contributions (p.93)	Financial contributions alone may not constitute an offset unless they deliver timely, measurable conservation outcomes for impacted Program Matters.	Consistent with the Offset Pathways set out in Section 12 of BHP's Pilbara Strategic Assessment Assurance Plan and Offset Plan (APOP), BHP's financial contribution to offset residual impacts to Pilbara Olive Python habitat will be made to the Pilbara Environmental Offsets Fund (PEOF). The administration of the PEOF and the offset projects funded by it are managed by the Department of Water and Environmental Regulation. No change to the final Validation Notice.
8. Commitments			
8.1 Monitoring Commitments			
27	8.1-1 Table 8: Proposed monitoring commitments – Pilbara Olive Python (pp.98-99)	Define 'significant' in performance targets and explain why monitoring excludes Marillana Creek (upstream from the discharge point), which is critical habitat for the Pilbara Olive Python and minimising the loss of habitat is a Program Matter Outcome.	BHP has defined 'significant' and provided additional information on its Marillana Creek riparian vegetation health monitoring program in Table 8-1 of the final Validation Notice (and summarised below). The monitoring program monitors riparian vegetation health (which includes Pilbara Olive Python habitat) biannually at monitoring sites along Marillana Creek, downstream and upstream from the discharge point. Monitoring variables used to measure riparian vegetation (habitat) health include canopy extent and density (defined as Crown Condition Score [CCS]), understorey condition (cover), site condition (general), site-wide vegetation and tree condition (using remote sensing) and water stress (defined by Leaf Water Potential); measured biannually. The riparian vegetation health monitoring program focuses on Melaleuca species as the indicator species for potential impacts from groundwater drawdown and/or surplus discharge. Significant decline in Pilbara Olive Python habitat is considered to be an average CCS of ≤3 for *Melaleuca argentea* over two consecutive sample periods or an average pre-dawn leaf water potential (LWP) score of > -1.95 MPa for *Melaleuca argentea* over two consecutive sample periods. Vegetation immediately upstream of the surplus water discharge point is predominately Eucalyptus species, which are more resilient to changes in groundwater levels. This area also occurs within the predicted basement drawdown, outside the predicted CID drawdown, where impacts are likely to be less pronounced, if at all. The health of Eucalyptus species in this area is monitored biannually through high-resolution WorldView satellite imagery, which discerns change in riparian tree canopy condition; and medium-resolution Sentinel-2 and Landsat satellite imagery, which tracks the condition of all vegetation across the broader landscape. If a trend of riparian tree canopy loss or condition decline is detected, field verification is undertaken to confirm the likely cause(s) and assess the significance of the change. If the performance target is not met, BHP will implement one or more mitigation measures, these may include but are not limited to: • Investigate the decline to evaluate whether change is due to BHP drawdown activities or other factors (e.g. drought, fire, pathogens etc.). • Increase the frequency of riparian vegetation health monitoring if appropriate. • Cease or reduce groundwater abstraction from the relevant borefield (where feasible) and allow groundwater levels to recover. • Provide alternative water supply to the affected trees (i.e. irrigation, infiltration or groundwater reinjection, based on feasibility of long-term persistence considering post closure groundwater levels) subject to approval from the regulatory authority. • Develop a rehabilitation strategy for areas of riparian vegetation health decline within the Activity Area, commensurate to groundwater level recovery predicted through closure modelling.

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			• Monitor and review to ensure management actions are successful and review procedures, if appropriate. Table 8-1 has been revised to more accurately reflect the riparian vegetation health monitoring program.
28	8.1-2 Table 8: Proposed monitoring commitments – Pilbara Olive Python (pp.98-99)	Review the timeliness of GIS updates if used to inform clearing decisions (updates of new records within 60 days does not seem timely if this system is used to inform land clearing plans modifications) and include clear reporting protocols.	For this Activity, BHP has committed to minimise clearing within Pilbara Olive Python critical habitat, being Major Drainage Line and Artificial Wetland, where practicable. Additionally, pre-clearance fauna surveys using suitably qualified fauna spotters will be conducted seven days prior to clearing within these habitat types. If Pilbara Olive Python are observed, clearing will not commence in that location until it has been confirmed by the suitably qualified fauna spotter that the Pilbara Olive Python has moved out of the clearing area. Table 8-3 has been updated to detail this management commitment. For these reasons, the timeliness of GIS updates is not critical to inform clearing decisions. The 60-day update management target is BHP's standard maximum time to update the GIS layer with any new records. This is set at 60 days to allow survey results from third party consultants reports to be finalised and uploaded into the GIS layer. It is not possible to upload consultants' data until the survey report has been finalised. Onsite BHP personnel typically update the GIS layer with any new sightings/records within 30 days. Table 8-1 and Table 8-3 have been updated to detail reporting protocols.
29	8.1-3 Table 8-1: Proposed monitoring commitments - Pilbara Olive Python (pp.98-99)	Implement reporting, education and adaptive management protocols for sightings and vehicle strikes.	Any observation or event involving Pilbara Olive Python, such as vehicle strike, will be reported and captured in WAIO's Event Management System. Where an event is reported, an investigation into the cause is undertaken and correct actions implemented. Educational material regarding the Pilbara Olive Python will be made available to site personnel. BHP will apply an adaptive management framework for implementing management measures identified in the final Validation Notice. Management measures for sightings and vehicle strike have been moved from Table 8-1 to Table 8-3 (Management Commitments) and updated to include the above, and a new Section 8-5 has been included to detail BHP's adaptive management framework.
30	8.1-4 Table 8-1: Proposed monitoring commitments – Pilbara Olive Python (pp.98-99)	Action 2 commits to utilising fauna spotters in incidents where the Pilbara Olive Python is detected in the Activity Area. Require suitably qualified fauna spotters.	Commitment for a suitably trained fauna spotter has been moved from Table 8-1 to Table 8-3, Management Commitments. Requirement for a suitably trained fauna spotter has been updated throughout the final Validation Notice as requested. This would be 'a person who is suitably trained in species identification, who does not perform any handling of animals where a licence to do so is required'. This definition aligns with our Western Australian Environmental Protection Authority draft approval conditions for the same proposal being assessed under Part IV of the *Environmental Protection Act 1986*. Alignment in conditions and management commitments between Commonwealth and State environmental approvals is considered appropriate as it deals with the same management issue.
8.2 Clearing Commitments			
31	8.2 Table 8-1: Proposed clearing commitments - Pilbara Olive Python (p.100)	Renumber Table 8-1 as Table 8-2	Tables renumbered as required.
8.3 Management commitments			

Comment Number	Issue	Comments	BHP Response
32	8.3-1 Table 8-2: Proposed management commitments - Pilbara Olive Python (pp.100-101)	Renumber Table 8-2 as Table 8-3. Clarify sighting and event reporting processes (WAIOs Event Management System) and include feral cat control commitments.	Tables renumbered as requested. Table 8-3 updated to clarify sighting and event reporting processes and feral cat control commitments. <u>Sighting and Event Reporting</u> BHP WAIO event reporting processes are detailed in the WAIO Environment Event Management Procedure. All environmental events must be reported and recorded in the WAIO Event Management System. Any event that has caused, or has the potential to cause, an impact on the environment must be reported through this system. BHP's Yandi Biodiversity Environmental Management Plan (BEMP) requires all sightings of significant fauna to be reported in accordance with the WAIO Environment Event Management Procedure. Additionally, the plan requires impacts to significant fauna species to be reported to the Western Australian Department of Water and Environmental Regulation (DWER) within 21 days of the impact occurring. For the Activity, all personnel will be required to report any feral cat sightings in the Event Management System (EMS) as an environmental event. <u>Feral Cat Control Commitments</u> Feral cat management will be undertaken in accordance with the WAIO Animal and Pest Management Plan. This plan requires: • All sightings of feral cats are required to be reported in the Event Management System (EMS). • Inductions provided to all personnel. • Monitoring information is captured through fauna surveys, pre-clearance assessments, routine site activities, and pest control records. • Any trapping or baiting programs are only undertaken where approved, coordinated with site Environment Teams, and reported in EMS.
8.4 Offset commitments			
33	8.4 Table 8-3: Proposed offset commitments – Pilbara Olive Python (p.102)	Renumber Table 8-3 as Table 8-4.	Tables renumbered as required.