Biota Environmental Sciences

Yandi E8 Additional Targeted Fauna Survey

Prepared for

BHP WAIO

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1.0 Executive Summary

BHP Western Australia Iron Ore (BHP WAIO) required a biological survey of several small areas related to the expansion of the Yandi E8 pit, focusing on the presence of significant fauna. The Survey Area comprised three areas totalling approximately 174 ha, located to the north, east and west of the proposed E8 pit, approximately 70 km northeast of Newman. The results of the survey will be used to inform future environmental approvals in the area.

Biota Environmental Sciences was commissioned to conduct a desktop study and a single-season targeted survey for significant vertebrate fauna. The aim of this study was to assess the presence of and habitat suitability for significant species in the Survey Area, particularly including the Pilbara Olive Python, Northern Quoll, Grey Falcon, Pilbara Leaf-nosed Bat, and Ghost Bat, all of which are listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the WA *Biodiversity Conservation Act 2016* (BC Act).

The survey was conducted between the 9th and 16th of January 2026 by two zoologists. Diurnal and nocturnal targeted searches and habitat assessments were conducted in all three areas, and motion cameras and ultrasonic sound recorders were deployed throughout the Survey Area.

Eight fauna habitats were mapped within the Survey Area: Hillcrest/Hillslope, Drainage Area/Floodplain, Stony Plain, Major Drainage Line, Undulating Low Hills, Minor Drainage Line, Gorge/Gully, and Cleared/Disturbed.

A total of 21 vertebrate fauna species were identified during the survey, including eight mammal species (seven native, one introduced), five bird species, and eight reptile species. The only significant species detected was the Western Pebble-mound Mouse (*Pseudomys chapmani*), which is a Department of Biodiversity, Conservation and Attractions (DBCA) Priority 4 species. One active and two inactive mounds of the Western Pebble-mound Mouse were observed during the survey.

The desktop study returned evidence of 37 species of significant fauna occurring within 40 km of the Survey Area, comprising 21 bird, eight mammal, and eight reptile species. Of these species, only the Western Pebble-mound Mouse had records within the Survey Area. Five further species were considered to have a high likelihood of occurrence within the Survey Area, and five have a moderate likelihood of occurrence, as follows:

- **Recorded:**
  - Western Pebble-mound Mouse (*Pseudomys chapmani*) – DBCA Priority 4.
- **High Likelihood of Occurrence:**
  - Northern Quoll (*Dasyurus hallucatus*) – BC Act and EPBC Act Endangered;
  - Pilbara Olive Python (*Liasis olivaceus* subsp. *barroni*) – BC Act and EPBC Act Vulnerable;
  - Ghost Bat (*Macroderma gigas*) – BC Act and EPBC Act Vulnerable;
  - Fork-tailed Swift (now known as the Pacific Swift) (*Apus pacificus*) – BC Act and EPBC Act Migratory; and

- Peregrine Falcon (*Falco peregrinus*) – BC Act Other Specially Protected.

- **Moderate Likelihood of Occurrence:**
  - Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*) – BC Act and EPBC Act Vulnerable;
  - Grey Falcon (*Falco hypoleucos*) – BC Act and EPBC Act Vulnerable;
  - Australian [Gull-billed] Tern (*Gelochelidon [nilotica] macrotarsa*) – BC Act and EPBC Act Migratory;
  - Pilbara Flat-headed Blind-snake (*Anilios ganei*) – DBCA Priority 1; and
  - Pilbara Barking Gecko (*Underwoodisaurus seorsus*) – DBCA Priority 2.

2.0 Introduction

2.1 Project Background

BHP Western Australia Iron Ore (BHP WAIO) began operations at Yandi mine in 1991 to extract iron ore from open-cut pits and transport processed product by rail to Port Hedland. BHP required a vertebrate fauna survey of several small areas (hereafter the 'Survey Area') related to the expansion of the Yandi E8 pit, focusing on the presence of significant fauna.

The Survey Area comprised three separate polygons located to the north, east and west of the proposed E8 pit, and approximately 70 km northeast of Newman (Figure 2.1). The total Survey Area was 173.7 ha in size, split into the West (86.7 ha), Central (23.7 ha) and East (63.3 ha) polygons.

2.2 Study Scope

BHP WAIO commissioned Biota Environmental Sciences (Biota) to complete a desktop study, followed by a single-season targeted vertebrate fauna survey for significant species, consistent with relevant guidance and policy from the Environmental Protection Authority (EPA). The key elements of this scope included:

1. Conduct a comprehensive desktop study to determine the presence, or likely presence, of significant species and communities in the Survey Area, including a review of all relevant fauna databases.
2. Undertake a one-season targeted significant vertebrate fauna survey following appropriate EPA guidance for significant species.
3. Collate, present, and discuss data from the desktop study and field survey in an abbreviated technical report, and supply all survey data in an appropriate format.

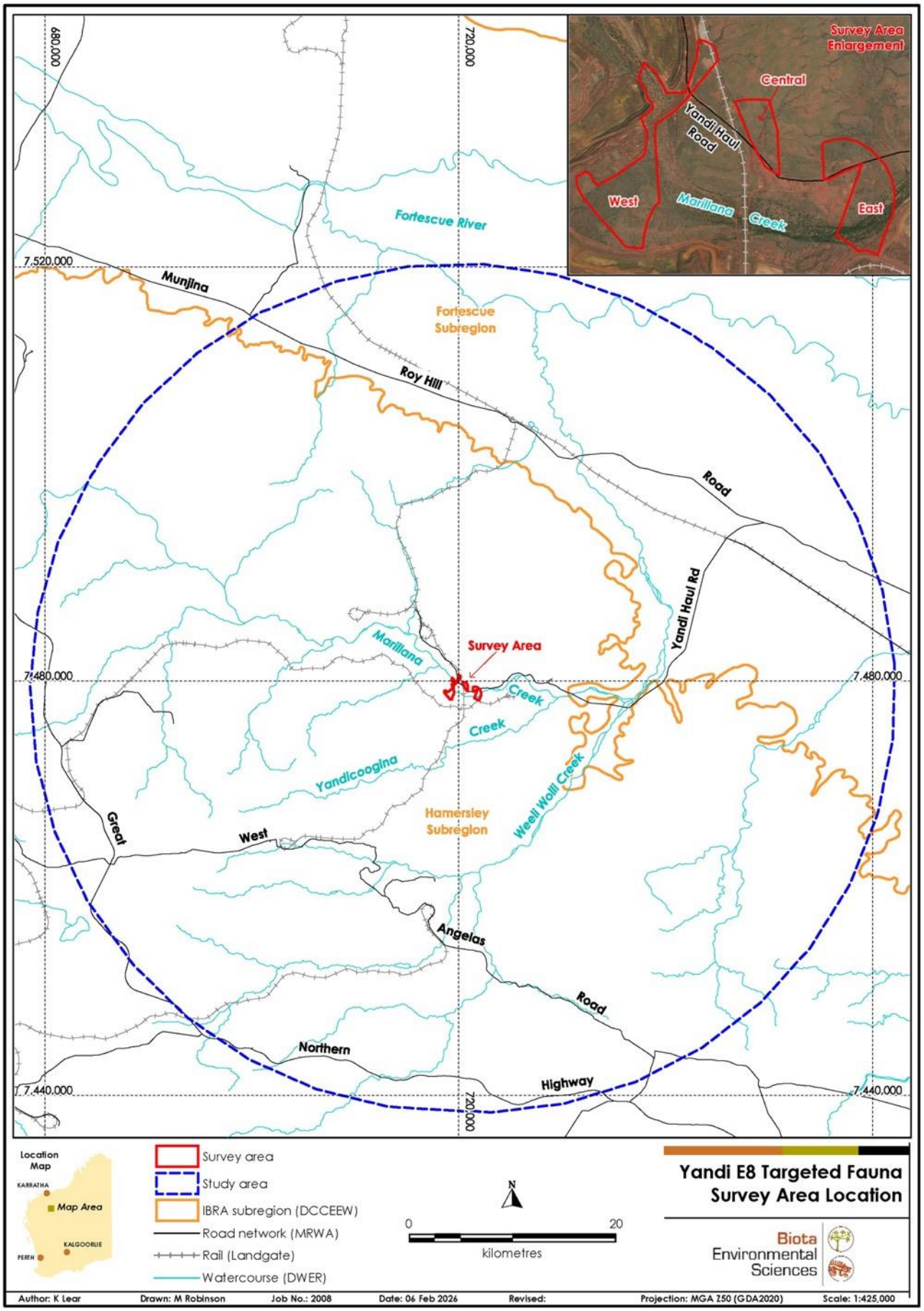

Figure 2.1: **Map of the Survey Area, comprising three separate polygons (West, Central, and East) totalling approximately 174 ha.**

3.0 Methods

This report has been prepared with consideration of relevant documents, including:

- Department of the Environment (2013) Significant Impact Guidelines 1.1 - Matters of National Environmental Significance;
- Department of the Environment (2016) Referral guideline for the endangered northern quoll *Dasyurus hallucatus*;
- Department of the Environment, Water, Heritage and the Arts (DEWHA) (2010a) Survey Guidelines for Australia's Threatened Bats;
- DEWHA (2010b) Survey Guidelines for Australia's Threatened Birds;
- DEWHA (2011a) Survey Guidelines for Australia's Threatened Mammals;
- DEWHA (2011b) Survey Guidelines for Australia's Threatened Reptiles;
- EPA (2016a) Environmental Factor Guideline – Terrestrial Fauna;
- EPA (2016b) Technical Guidance – Sampling methods for terrestrial vertebrate fauna;
- EPA (2020) Technical Guidance –Terrestrial vertebrate fauna surveys for environmental impact assessment;
- Latest revision of BHP WAIO's Biological Survey Spatial Data Requirements (SPR-IEN-EMS-015) (BHP 2023a);
- Latest revision of BHP WAIO's Vertebrate Fauna Surveys in Western Australia Technical Process Instruction (SPR-IEN-EMS-012) (BHP 2023b);
- Threatened Species Scientific Committee (TSSC) (2008) Conservation advice for *Liasis olivaceus barroni* (Olive python – Pilbara subspecies);
- TSSC (2016a) Conservation advice for *Macroderma gigas* (ghost bat); and
- TSSC (2016b) Conservation advice *Rhinonicteris aurantia* (Pilbara form), Pilbara leaf-nosed bat;
- Bat Call WA (2021a) A review of Pilbara leaf-nosed bat ecology, threats and survey requirements; and
- Bat Call WA (2021b) A review of ghost bat ecology, threats and survey requirements.

3.1 Desktop Study

3.1.1 Database Searches

To inform the review of the potential assemblage of significant species present within the Survey Area, a desktop 'Study Area' was defined as the area within a 40 km buffer of the Survey Area. The following databases were searched for records of significant species within this Study Area. In addition, all fauna records from BHP's geodatabase were included. Definitions of significant species are provided in Appendix 1.

1. The Commonwealth EPBC Act Protected Matters Search Tool (PMST): used to identify fauna species and other matters of national environmental significance (MNES) that may occur in the locality. This tool does not provide location information or specific records, but categorises the occurrence of significant fauna as 'May,' 'Likely,' or 'Known.'

2. Atlas of Living Australia (ALA): this online database is a joint project between academic collecting institutions, private individual collectors, and community groups, hosted by the Commonwealth Scientific and Industrial Research Organisation (CSIRO). Location information for significant species is not supplied.
3. DBCA Threatened and Priority Fauna databases: commissioned search to confirm the significant species known from the locality and provide spatial information.
4. Dandjoo Database: this database is maintained by DBCA, containing accessible fauna survey data from past government and industry surveys. The database was searched for significant fauna records within a 40 km radius of the Survey Area. No spatial information is supplied for significant species.
5. The Index of Biodiversity Surveys for Assessments (IBSA): this database consolidates data from land-based biodiversity surveys conducted to support EIA and compliance required under the WA *Environmental Protection Act 1986*, and provides a publicly available online platform for data sharing (where agreed by the proponent).
6. eBird: This is a citizen science database of bird records from around the globe, managed by Cornell University and moderated by local experts.
7. Biota's internal database of past surveys.

Note that species designated solely as 'Marine' by the EPBC Act were not included in the desktop study as significant fauna, as the Survey Area is not located near any marine ecosystems.

3.1.2 Literature and Spatial Data Review

Published and unpublished reports relevant to the Survey Area were reviewed, as supplied by BHP and sourced from the IBSA database. Several regional-scale reports and data sets were examined, as well as bioregional data, land systems, soils and geology (see Sections 4.1.1 to 4.1.3).

Due to the large number of previous surveys conducted within the desktop Study Area, only reports detailing surveys conducted since 2015 and where at least part of the previous survey boundary was within 10 km of the Survey Area were reviewed here. These comprised the following eight reports:

- Breakaway and Marillana South MNES Targeted Vertebrate Fauna Survey (Spectrum 2024);
- Marillana Power 2030 Detailed Fauna Survey (Spectrum 2026);
- Ministers North Consolidated Targeted Significant Vertebrate Fauna Surveys (Astron 2025);
- Yandi 45C Targeted Significant Vertebrate Fauna Survey (Astron 2023);
- Ministers North Fauna Survey: Level 2 Survey (GHD 2021a);
- Ministers North Fauna Survey: Level 1 Survey (GHD 2021b);
- Ministers North to Yandi Corridor Two Phase Targeted Fauna Survey (Biologic 2018); and
- Ministers North Level 2 Vertebrate Fauna Survey (Biologic 2017).

3.2 Assessment of Likelihood of Occurrence

Significant species identified in the desktop study were assessed for their likelihood of occurrence in the Survey Area, both prior to and following the survey. This assessment was based on the proximity of previous records to the Survey Area, knowledge of the habitat preferences of each taxon, an assessment of the fauna habitats present within the Survey Area, and any records obtained during the field survey.

The guidelines used to assess likelihood of occurrence are outlined in Table 3.1. For the purposes of this report, the term “proximity” is defined as being within 20 km of the Survey Area, while the "locality" comprises the area up to 40 km from the Survey Area (i.e. the desktop Study Area).

Table 3.1: Guidelines used to assess the likelihood of occurrence of significant fauna.

Likelihood	Guideline
Recorded	1. The species was recorded during the field survey or has been previously recorded in the Survey Area.
High likelihood of occurrence	1. There are existing records of the species within 20 km of the Survey Area; and • the species is strongly linked to a specific habitat, which is present in the Survey Area; or • the species has more general habitat preferences, and suitable habitat is present.
Moderate likelihood of occurrence	1. There are existing records of the species within 40 km of the Survey Area, however • the species is strongly linked to a specific habitat, of which only a small amount is present in the Survey Area; or • the species has more general habitat preferences, but only some suitable habitat is present in the Survey Area. 2. There is suitable habitat in the Survey Area, but the species is recorded infrequently in the locality.
Low likelihood of occurrence	1. The species is linked to a specific habitat, which is absent in the Survey Area; or 2. Suitable habitat is present, however there are no existing records of the species from within 40 km of the Survey Area despite reasonable previous search effort in suitable habitat; or 3. There is some suitable habitat in the Survey Area, however the species is very infrequently recorded in the locality or the only records are historical (>40 years ago).
Would not occur	1. The species is strongly linked to a specific habitat, which is absent from the Survey Area; and/or 2. The species’ range is very restricted and would not include the Survey Area.

3.3 Field Survey

3.3.1 Survey Timing and Conditions

The survey was conducted between the 9th and 16th of January 2026 by Senior Zoologists Melanie McGellin and Karissa Lear. A summary of the field team members and their experience is provided in Table 3.2. The survey was completed under a DBCA ‘Fauna Taking (Biological Assessment) Licence’ (BA27001466).

Table 3.2: Survey team, qualifications, and experience.

Name	Position at Biota	Survey Role	Qualification	Years of Experience
Melanie McGellin	Senior Zoologist	Project manager, S26 supervisor and fauna field leader	BSc. (Zool), Hons.	7
Karissa Lear	Senior Zoologist	Field team member	BSc. (Biol), Hons. PhD (Marine Biol)	13

Weather during a survey will influence the activity of terrestrial fauna, while longer term conditions, particularly rainfall, influence productivity and thereby the overall abundance of individuals.

Weather data for the year preceding the survey were obtained from the Bureau of Meteorology (the Bureau) weather station at Barimunya (no. 505053), located approximately 10 km north of the Survey Area (Figure 3.1). Long-term averages were obtained from Willy Weather (https://www.willyweather.com.au/), reporting readings from the Bureau from 2018-2025, given no long-term data are available for this station on the Bureau website.

Temperatures during the year preceding the survey were approximately equivalent to the long-term averages, although temperatures were 2-3°C warmer than average during the survey month of January 2026. Notably, rainfall in the year preceding the survey was less than half the average annual rainfall, with a total rainfall from February 2025 – January 2026 of 169.2 mm compared to the long-term average annual rainfall in the region of 369.2 mm.

During the field survey, temperatures were relatively high, with daily maximum temperatures of 39.0 – 43.6ºC, and overnight minimum temperatures of 22.9 – 29.6ºC. There were also several localised rainfall and storm events during the afternoons and evenings of the survey, with up to 9.2 mm of rainfall recorded on January 10th and 13th. These weather conditions likely would have encouraged herpetofauna activity during the survey, but high temperatures could have reduced bird and mammal activity.

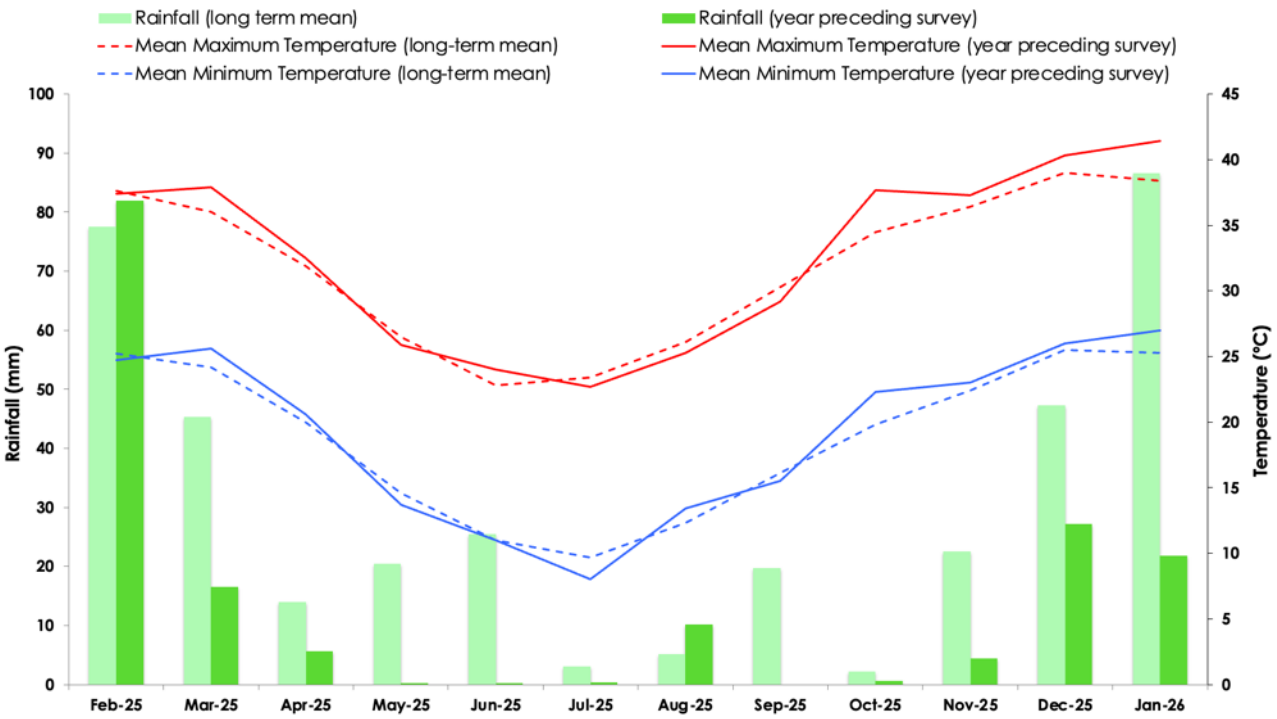

Figure 3.1: Rainfall and temperature data from Barimunya weather station for the year preceding the survey (2025-2026) compared to long-term averages.

3.3.2 Fauna Habitat Assessment

A preliminary review of the fauna habitats present in the Survey Area was conducted by examination of aerial photography and thematic layers including geology, land systems, soils and Beard's vegetation mapping (see Sections 4.1.2 to 4.1.4). Ground-truthing of preliminary fauna habitat mapping was conducted in the field while traversing on foot through the Survey Area.

In-field habitat assessments comprised soil type, landform, any notable microhabitats present, any disturbance (e.g. fire, weeds, grazing, evidence of introduced fauna), broad vegetation characteristics and representative photographs. These assessments were conducted in each of the three polygons within the Survey Area, and were used to define, assess, and map fauna habitats.

3.3.3 Targeted Searches

Targeted searches were undertaken across much of the Survey Area to search for evidence of significant species, including individuals, tracks, scats, diggings, or remains. However, targeted searches were not conducted within the northwest arm of the West Survey Area polygon due to access restrictions regarding a haul road. Searches were also not conducted within part of the East polygon due to time constraints (see Table 3.6 for a full description of access limitations).

The targeted searches were focused on species of particular interest as specified by BHP, comprising the Endangered Northern Quoll (*Dasyurus hallucatus*), Vulnerable Pilbara Olive Python (*Liasis olivaceus* subsp. *barroni*), Vulnerable Grey Falcon (*Falco hypoleucos*), Vulnerable Ghost Bat (*Macroderma gigas*), and Vulnerable Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*).

A total of 725 person-minutes (~12.1 hours) were spent on targeted diurnal (late afternoon-evening) and nocturnal searches (Table 3.3). Survey tracklogs are displayed in Figure 3.2.

Table 3.3: Targeted search effort during the survey period.
Search IDs correspond to the points plotted in Figure **3.2**.

Search ID	Survey Polygon	Date	Start Time	Search Type	Search Effort (person mins)
YANF-01	East	09/01/2026	13:27	Diurnal	80
YANF-02	Central	09/01/2026	14:31	Diurnal	80
YANF-03	West	11/01/2026	15:57	Diurnal	60
YANF-04	West	11/01/2026	17:53	Nocturnal	64
YANF-05	West	11/01/2026	18:41	Nocturnal	180
YANF-06	Central	13/01/2026	17:47	Nocturnal	15
YANF-07	West	13/01/2026	18:01	Nocturnal	86
YANF-08	West	14/01/2026	17:55	Nocturnal	70
YANF-09	East	15/01/2026	21:13	Nocturnal	90
				TOTAL	**725 (12.1 hours)**

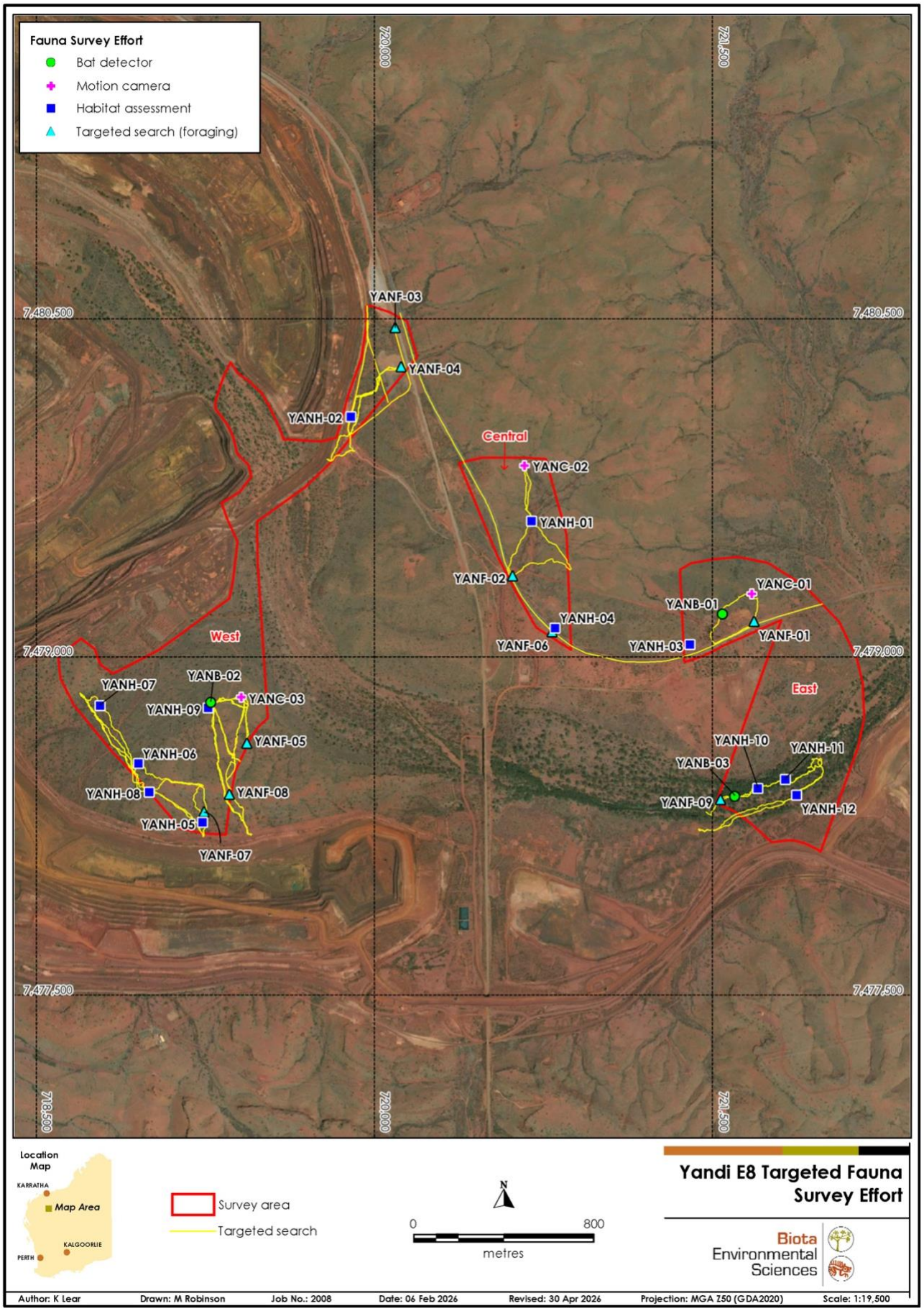

Figure 3.2: Survey effort including tracklogs of diurnal and nocturnal searches.

3.3.4 Motion Camera Deployments

Motion cameras were deployed at three locations within the Survey Area (Table 3.4; Figure 3.2; Plate 3.1 to Plate 3.3). Cameras primarily targeted Northern Quolls (*Dasyurus hallucatus*), and therefore were deployed in and around rocky outcrops and along drainage lines (travel/foraging routes). Lures with non-consumable universal bait (mixture of peanut butter, oats, and truffle oil enclosed in a PVC tube) were deployed within the camera frame.

Table 3.4: Motion camera locations and effort.

Site Name	Survey Polygon	Latitude	Longitude	Fauna Habitat	Deployment Date	Retrieval Date	Effort (nights)
YANC-01	East	-22.7794	119.15921	Undulating Low Hills	09/01/2026	15/01/2026	6
YANC-02	Central	-22.7744	119.14933	Minor Drainage Line	09/01/2026	15/01/2026	6
YANC-03	West	-22.7838	119.13722	Hillcrest/Hillslope	11/01/2026	14/01/2026	3
						TOTAL	**15**

Plate 3.1: Motion camera site YANC-01.

Plate 3.2: Motion camera site YANC-02.

Plate 3.3: Motion camera site YANC-03.

3.3.5 Ultrasonic Sound Recorders

SongMeter 4 automated ultrasonic sound recorders were deployed at three locations within the Survey Area to target significant bat species, particularly the Ghost Bat (*Macroderma gigas*) and Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*) (Table 3.5; Figure 3.2; Plate 3.4 to Plate 3.6). Each unit was deployed for three nights (EPA 2020). Bat call analysis was undertaken by Bob Bullen of Bat Call WA.

Table 3.5: Ultrasonic Sound Recorders deployed during the survey period.

Site Name	Survey Polygon	Latitude	Longitude	Fauna Habitat	Deployment Date	Retrieval Date	Effort (nights)
YANB-01	East	-22.78021	119.15794	Drainage Area/Floodplain	09/01/2026	12/01/2026	3
YANB-02	West	-22.78406	119.13589	Minor Drainage Line	11/01/2026	14/01/2026	3
YANB-03	East	-22.78751	119.15860	Major Drainage Line	13/01/2026	16/01/2026	3
						TOTAL	**9**

Plate 3.4: Bat recorder site YANB-01.

Plate 3.5: Bat recorder site YANB-02.

Plate 3.6: Bat recorder site YANB-03.

3.4 Limitations

The field survey provided an adequate representation of the fauna values of the Survey Area, however there are limitations to this study that must be considered when reviewing the results detailed in this report. As per the relevant EPA Technical Guidance Statements (EPA 2020), potential constraints and consequent limitations of this study are summarised in Table 3.6.

Table 3.6: Assessment of potential limitations for this study.

Potential Limitation	Assessment
1. Availability of contextual information at a regional and local scale	Numerous biological surveys have been completed in and near the Survey Area, including several in the last 10 years. Databases of information relating to rare species and communities were also searched. Contextual information was not a limiting factor for this study.
2. Competency/ experience of the team carrying out the survey, including experience in the bioregion surveyed	Both field team members were suitably qualified to fulfill their role in the survey. Team lead Melanie McGellin has nine years of experience conducting fauna surveys in Western Australia, including three years conducting vertebrate surveys in the Pilbara. Field team member Karissa Lear has 13 years of ecological research experience, including 5 years' experience conducting industry-related research in the Pilbara. Personnel experience was not a limitation of the survey.
3. Proportion of fauna recorded and/or collected, any identification issues	All significant species were identified to species level, and the one species with previous records within the Survey Area was recorded during the survey. Proportion of fauna recorded and identification were not considered limitations of the survey.
4. Appropriate area fully surveyed (effort and extent)	The southern portion of the East Survey Area polygon was added into the scope in the middle of the survey (due to late tenure permission being granted because of safety risks), limiting deployment of motion cameras in this space, as well as limiting the available time for targeted searches. Additionally, access restrictions inhibited targeted searches or deployment of monitoring equipment in the northwest arm of the West Survey Area, due to safety risks (see below). As a result, a total of 38.9 ha (22%) of the Survey Area had limited survey (habitat was still mapped based on satellite imagery) (see Figure 3.2). Effort and extent of the survey is considered a minor limitation.
5. Access restrictions within the Survey Area	The majority of the Survey Area was traversed on foot and accessible during the survey, however a portion of the West Survey Area polygon (~15 ha, or ~18% of the West polygon) was inaccessible due to a haul road intersecting the area and no alternative access routes. Access restrictions are considered a minor limitation.
6. Survey timing, rainfall, season of survey	The survey was completed in January 2026, within the middle of the summer 'wet season' period. This is within the recommended primary survey period for reptiles in the Pilbara (EPA 2020), and short-term weather conditions (high temperatures and rainfall events) were conducive to reptile behaviour, and therefore suitable for targeted searches of Pilbara Olive Pythons. However, seasonal rainfall in the region was substantially below average for the year preceding the survey, and thus general dry conditions could have reduced faunal activity in the region. As specified by the EPA Technical Guidance for Targeted Vertebrate Surveys, seasonal timing is less important for surveying mammal and bird species (EPA 2020), though the high temperatures during the survey and dry conditions in the previous year could have reduced mammal and bird activity. Rainfall prior to the survey is considered a minor limitation.

Potential Limitation	Assessment
7. Disturbance that may have affected the results of survey such as fire, flood or clearing	Approximately 29.5 ha of the Survey Area was already cleared/developed and was mapped as Completely Degraded. However, there was sufficient intact vegetation through the remainder of the Survey Area to define the fauna habitats adequately. No recent fires or major climactic events had occurred. Disturbance was not considered to be a limitation.

4.0 Results

4.1 Desktop Study Results

The results of the comprehensive desktop study are reported on here following the guidance provided in BHP WAIO's SPR-IEN-EMS-012. The taxonomy used throughout this report follows BHP's internal naming conventions, so at times is inconsistent with the WA Museum checklist of fauna species.

4.1.1 IBRA Bioregion and Subregion

The Interim Biogeographic Regionalisation for Australia (IBRA) recognises 89 bioregions and 419 biological subregions for Australia (DCCEEW 2026a). The Survey Area lies within the Hamersley subregion (PIL3) of the Pilbara bioregion. The Hamersley subregion is 6,215,092 ha in size and is described as:

> "PIL3 is the Southern section of the Pilbara Craton. Mountainous area of Proterozoic sedimentary ranges and plateaux, dissected by gorges (basalt, shale and dolerite). Mulga low woodland over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges. The climate is Semi-desert tropical, average 300mm rainfall, usually in summer cyclonic or thunderstorm events. Winter rain is not uncommon. Drainage into either the Fortescue (to the north), the Ashburton to the south, or the Robe to the west. Subregional area is 6,215,092 ha" (Kendrick 2003).

4.1.2 Land Systems

Land systems are composed of repeating patterns of topography, soils and vegetation, which are described as a series of land units (Christian and Stewart 1953). A total of 105 land systems were identified and mapped in the Pilbara bioregion by the then Department of Agriculture in 2004. Land systems mapping covering the Survey Area was prepared by van Vreeswyk et al. (2004).

The Survey Area overlaps four different land systems, comprising the Boolgeeda, McKay, Robe, and River land systems. Descriptions and areas of each of these land systems and coverage areas are detailed in Table 4.1. All four of these land systems occur widely outside of the Survey Area, with the Survey Area accounting for 0.01-0.04% of the extent of these land systems within the Hamersley subregion (Table 4.1).

Table 4.1: Descriptions and extents of land systems found in the Survey Area, including proportional comparisons to the wider subregion.

Land System	Description (van Vreeswyk et al. 2004)	Extent in Survey Area ha (proportion)				Extent in Hamersley Subregion (ha)	Proportion of Subregional Extent
		West	Central	East	Total		
Boolgeeda	Stony lower slopes, level stony plains and narrow sub-parallel drainage floors, relief up to 20 m. A common system in shallow valleys below hill systems such as Newman and Rocklea.	58.5 (67%)	0 (0%)	4.4 (7%)	62.9 (36%)	606,770.8	0.01%
McKay	Hills, ridges, plateau remnants and minor breakaways of sedimentary and meta sedimentary rocks, relief up to 100 m.	10.0 (11%)	23.7 (100%)	17.1 (27%)	27.1 (16%)	80,717.6	0.03%
Robe	Conspicuous chains of limonite mesas and buttes with steep breakaway faces, source of iron ore as pisolitic limonite, relief up to 50 m.	9.9 (11%)	0 (0%)	21.0 (33%)	30.9 (18%)	103,116.3	0.03%
River	Narrow floodplains and major channels.	8.3 (10%)	0 (0%)	20.8 (33%)	29.1 (17%)	72,627.6	0.04%

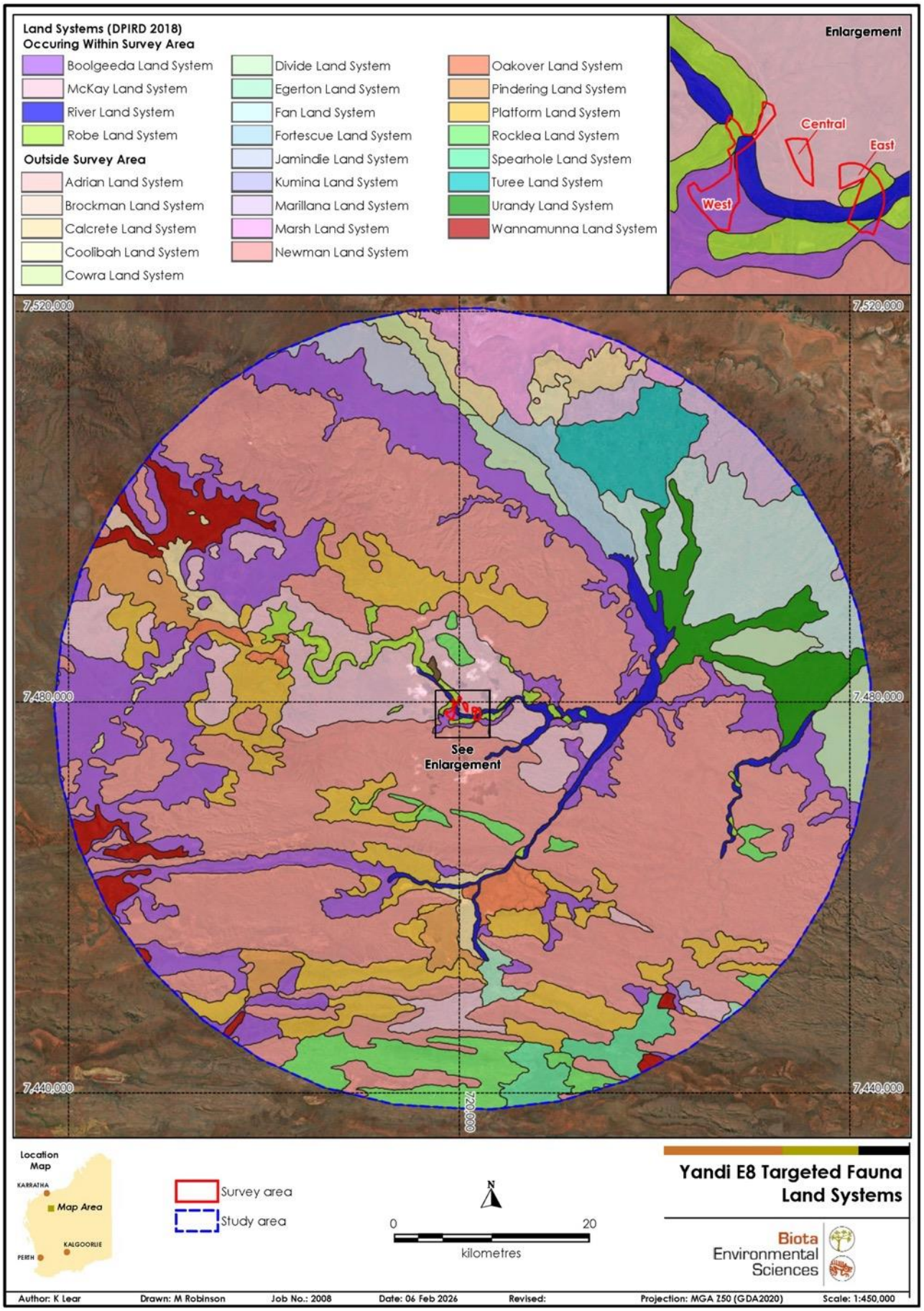

Figure 4.1: **Land systems mapped within the Survey Area and desktop Study Area.**

4.1.3 Geology and Soils

Surface geology mapping has been compiled for the locality area at a scale of 1:1,000,000 based on geological maps published by Geoscience Australia (2008) and the Geological Survey of Western Australia (2011). The Survey Area is underlain by two surface geology units, the Czlr (Robe Pisolite) and Lchw (Weeli Wooli Formation) units. Descriptions of these geologies are detailed in Table 4.2. Both units are widespread in the Hamersley region, with the Survey Area accounting for 0.03-0.08% of their extent in the subregion (Table 4.2).

Soil landscapes comprising a number of soil units were mapped by Northcote et al. (1960) to provide consistent descriptions of Australia's soils. The Survey Area intersects one soil unit, Fa13 (Figure 4.3), which is described in full as:

> "Ranges of banded jaspilite and chert along with shales, dolomites, and iron ore formations; some areas of ferruginous duricrust as well as occasional narrow winding valley plains and steeply dissected pediments. This unit is largely associated with the Hamersley and Ophthalmia Ranges. The soils are frequently stony and shallow and there are extensive areas without soil cover: chief soils are shallow stony earthy loams (Um5.51) along with some (Uc5.11) soils on the steeper slopes. Associated are (Dr2.33 and Dr2.32) soils on the limited areas of dissected pediments, while (Um5.52) and (Uf6.71) soils occur on the valley plains" (Bettenay et al. 1967).

The Fa13 soil unit is widespread in the Hamersley region (1,890,494.5 ha), with the Survey Area accounting for <0.01% of the extent of this soil unit in the subregion (Table 4.2).

Table 4.2: Surface geologies and soils found within the Study Area, including descriptions and extents within the Survey Area and Hamersley subregion.

Unit Name	Description	Extent in Survey Area ha (proportion)				Extent in Hamersley Subregion (ha)	Proportion of Subregional Extent
		West	Central	East	Total		
Surface Geologies							
Czlr (Robe Pisolite)	Pisolitic, oolitic and massive limonite, goethite and hematite deposits containing fossil wood fragments; iron ore	17.1 (20%)	0 (0%)	49.8 (79%)	66.9 (38%)	76,739.2	0.08%
Lchw (Weeli Wolli Formation)	Banded iron-formation (commonly jaspilitic), mudstone, siltstone; common interlayered metadoleritic sills.	69.6 (80%)	23.7 (100%)	13.5 (21%)	106.9 (62%)	307,885.7	0.03%
Soils							
Fa13	Ranges of banded jaspilite and chert along with shales, dolomites, and iron ore formations; some areas of ferruginous duricrust as well as occasional narrow winding valley plains and steeply dissected pediments.	86.7 (100%)	23.7 (100%)	63.4 (100%)	173.8 (100%)	1,890,494.5	0.009%

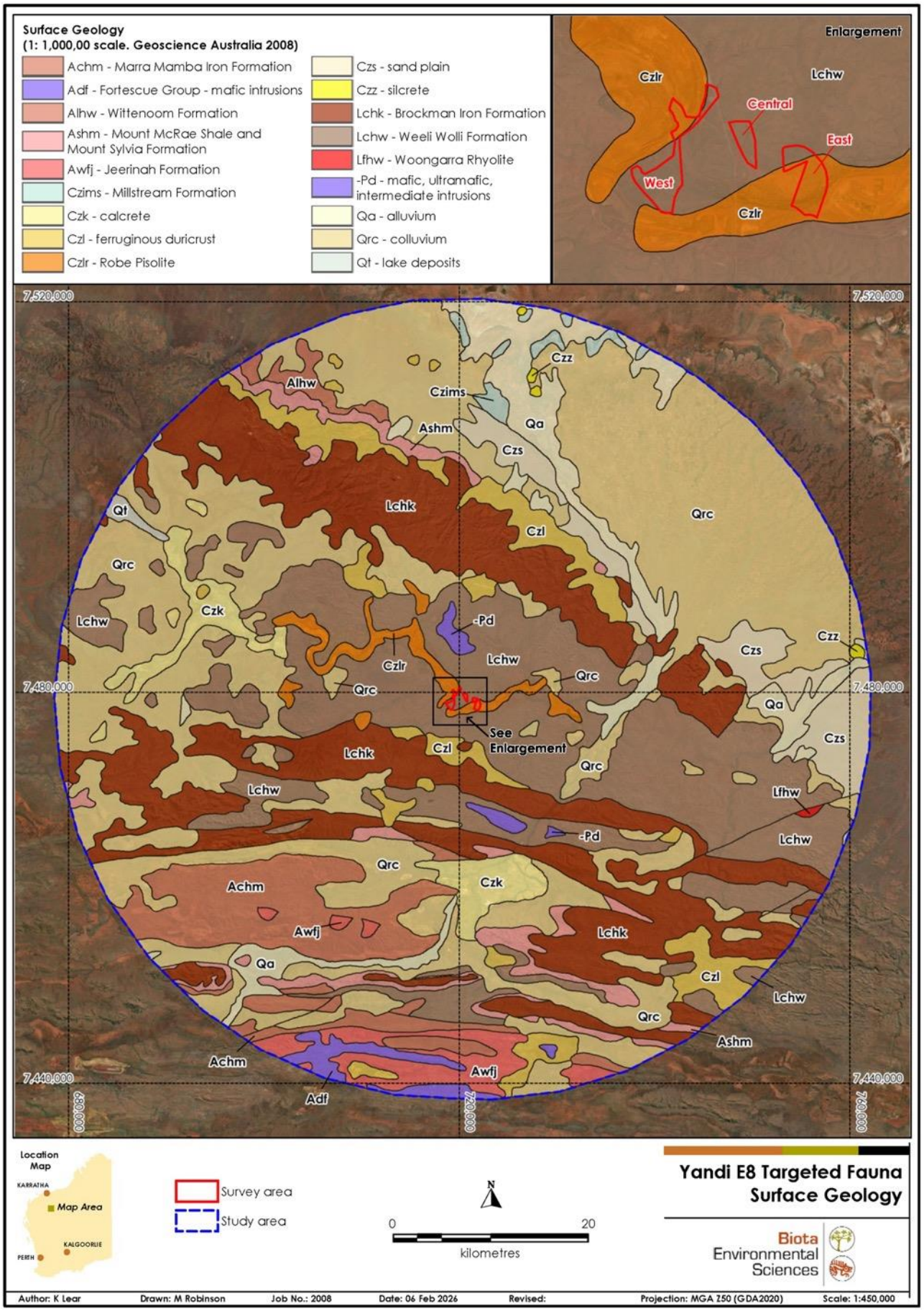

Figure 4.2: **Surface geology of the Survey Area and desktop Study Area.**

Digital dataset used from Geoscience Australia (2008).

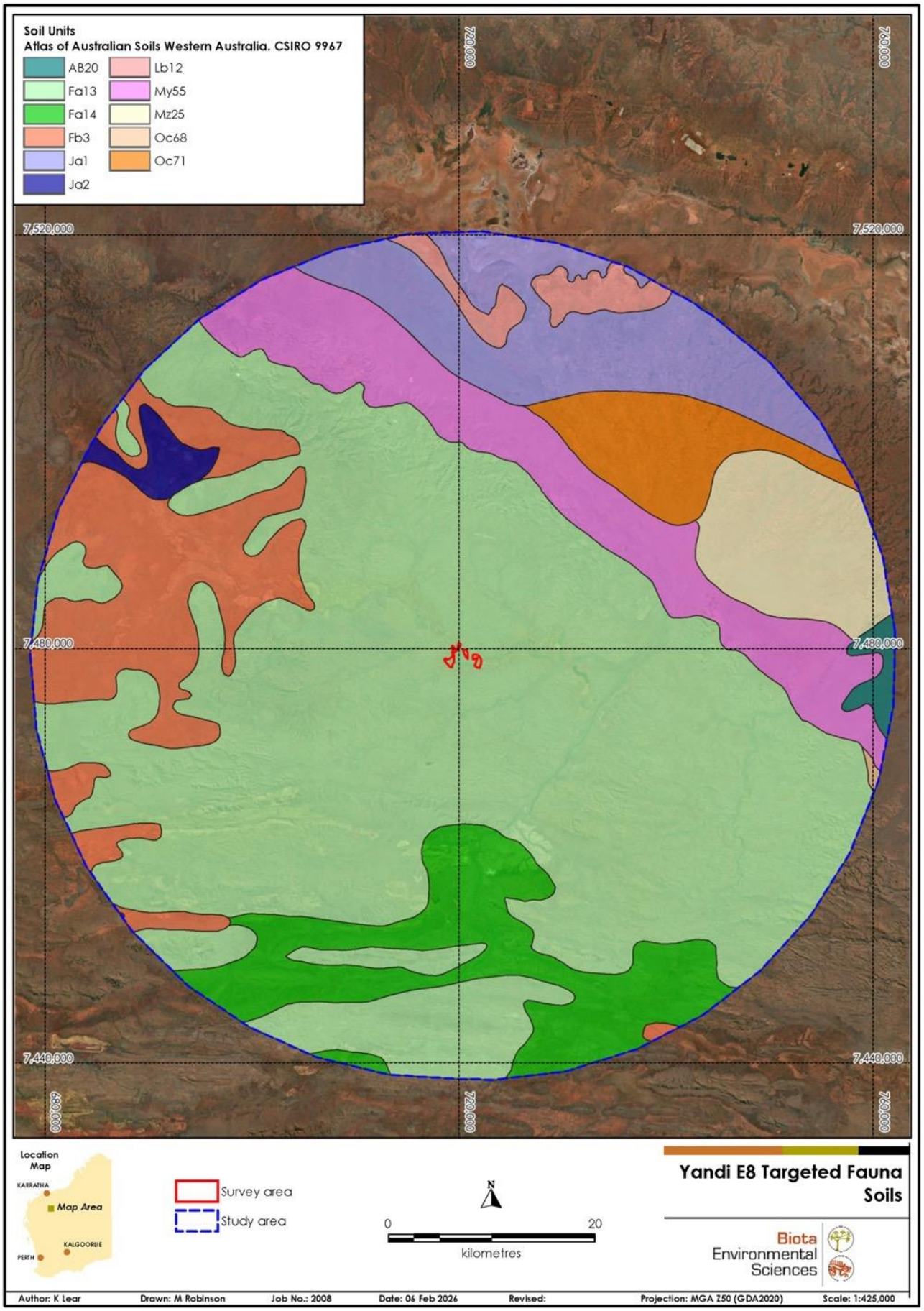

Figure 4.3: **Soils of the Survey Area and desktop Study Area.**
Digital dataset from CSIRO, Agriculture Western Australia (1967).

4.1.4 Beard's Vegetation Associations

Broad-scale vegetation mapping for the locality has been prepared at 1:1,000,000 scale by J.S. Beard (1975). One vegetation unit is present within the Survey Area: Hamersley 82 (Figure 4.4). This vegetation unit is described as:

> "Low tree-steppe; Hummock grassland with scattered bloodwoods and Snappy Gum *Triodia* spp., *Corymbia dichromophloia, Eucalyptus leucophloia*."

The Hamersley 82 vegetation unit is widespread throughout the Hamersley subregion (2,158,234.6 ha), with the Survey Area accounting for approximately 0.0008% of the extent of this unit in the Hamersley subregion.

4.1.5 Surface Hydrology

The Survey Area and majority of the Study Area fall within the Fortescue River Upper Catchment. There are several major creeklines within the Study Area, including Marillana Creek, Yandicoogina Creek, and Weeli Wolli Creek, as well as numerous smaller unnamed watercourses and drainage lines (Figure 4.5). One of the major creeklines, Marillana Creek, runs through the West and East polygons of the Survey Area, and there is some waterflow withing this segment of Marillana Creek due to dewatering activities. Otherwise, except for the occasional permanent pool within the larger watercourses, the creeks within the Study Area all appear to be ephemeral and are likely to only flow during or following large rainfall events. Permanent pools within the watercourses are likely to provide core habitat for many significant fauna species including migratory birds and the Vulnerable Pilbara Olive Python (*Liasis olivaceus* subsp. *barroni*).

The Study Area also overlaps with the edge of the Fortescue Marsh, which is the largest and most important wetland in the Pilbara bioregion, however, this is over 25 km north of the Survey Area (Figure 4.5).

4.1.6 Conservation Reserves and Protected Areas in the Locality

The Study Area overlaps with the edge of the Fortescue Marsh Nature Reserve, which is located approximately 35 km northeast of the Survey Area (Figure 4.5). Additionally, while not within the locality, Karijini National Park is located near the northwestern margin of the Study Area, beginning approximately 50 km northwest of the Survey Area and spanning westwards (Figure 4.5).

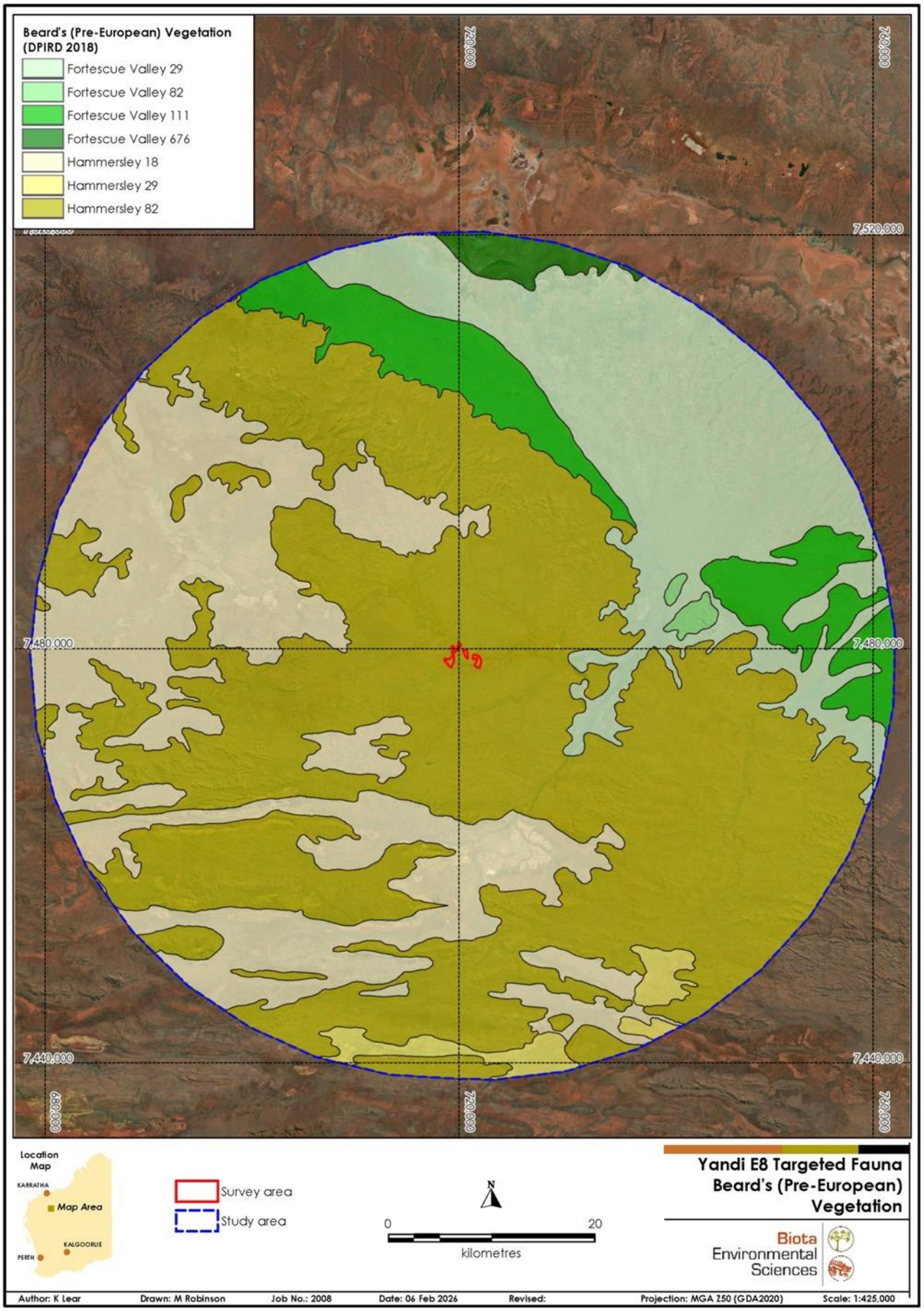

Figure 4.4: **Pre-European vegetation characterisation of the Survey Area and desktop Study Area.**

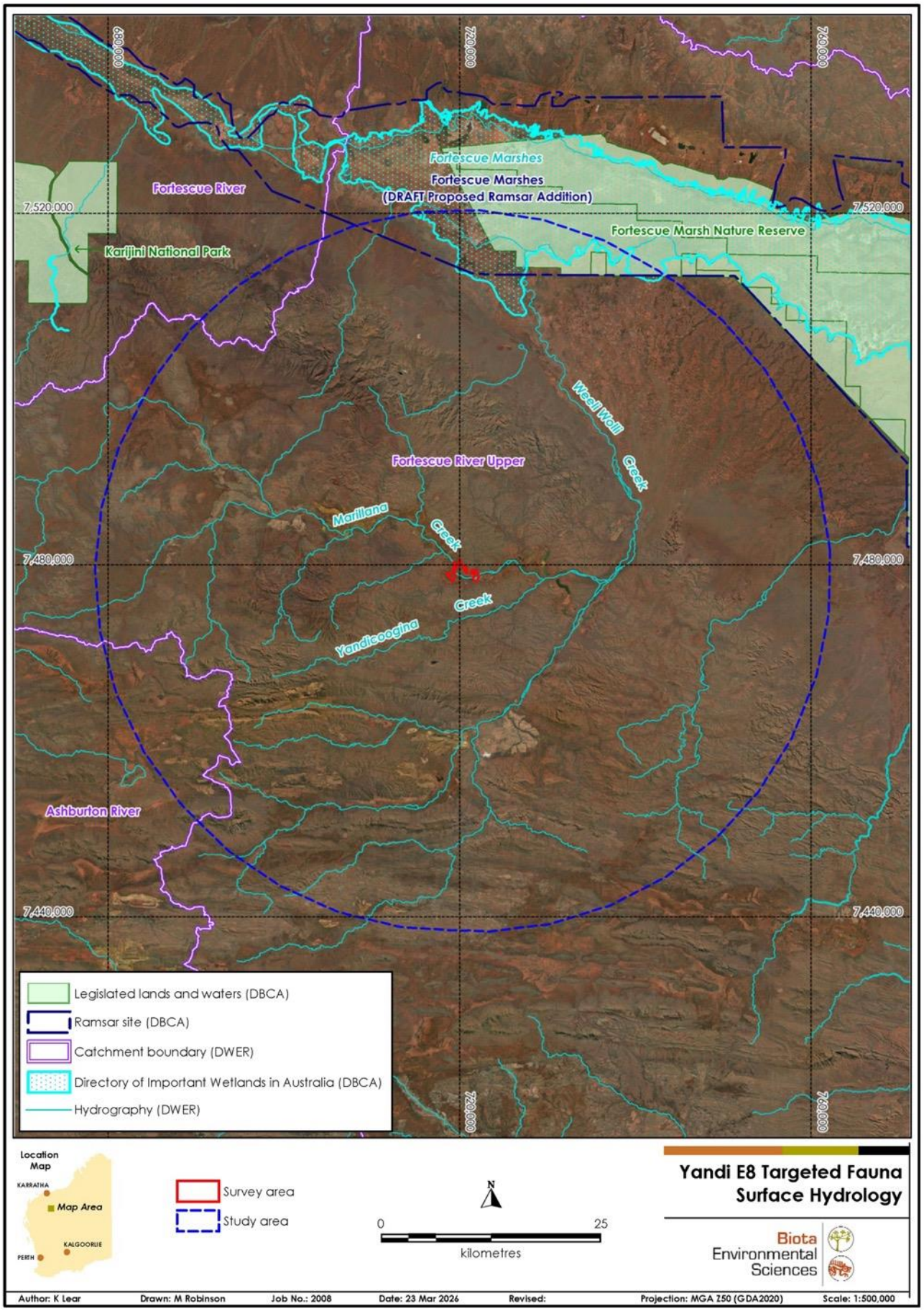

Figure 4.5: **Surface hydrology and relevant conservation reserves in the vicinity of the Study Area.**

4.1.7 Previous Biological Surveys

There have been a substantial number of fauna surveys previously conducted within the locality (over 60, as provided by BHP and sourced through the IBSA search tool). As a result, only a subset of these surveys has been reviewed here. A summary of eight previous surveys completed since 2015 that have occurred within or overlapping the area spanning 10 km around the Survey Area is presented in Table 4.3.

These surveys were all completed within the Hamersley subregion, mostly in association with either Mining Area C/Packsaddle, Ministers North Gorge, or Marillana Creek. Given only previous surveys within 10 km of the Survey Area were included here, all were conducted in habitats that are roughly equivalent to those in the Survey Area and are therefore highly relevant to the current survey.

All previous surveys in this area detected the Western Pebble-mound Mouse (*Pseudomys chapmani*; DBCA Priority 4). Several surveys also recorded other significant fauna species including the Pilbara Olive Python (*Liasis olivaceus barroni*; Vulnerable), Ghost Bat (*Macroderma gigas*; Vulnerable), Northern Quoll (*Dasyurus hallucatus*; Endangered), Peregrine Falcon (*Falco peregrinus*; Migratory), Common Sandpiper (*Actitis hypoleucos*; Migratory), and Pilbara Flat-headed Blind-snake (*Anilios ganei*; DBCA Priority 1).

Table 4.3: A subset of previous surveys conducted within the Study Area, comprising those within 10 km of the Survey Area and completed since 2015.

Report/Survey	Survey Size and Minimum Distance to Current Survey Area	Type of Survey/Study[1]	Survey Timing	Survey Limitations	No. Native Species Recorded	Threatened and Priority Species †
Marillana Power 2030 Detailed Fauna Survey (Spectrum 2026)	• 7,330 ha • Within Survey Area and to north and south	Single-phase detailed fauna survey	Oct 2024	None reported	Fauna species: • 16 mammals • 60 birds • 30 reptiles	One significant vertebrate fauna species recorded: • Western Pebble-mound Mouse (P4)
Breakaway and Marillana South MNES Targeted Vertebrate Fauna Survey (Spectrum 2024)	• 3,166 ha • ~8 km north	Two-phase targeted MNES vertebrate fauna survey	Phase 1: Jun 2023 Phase 2: Jul 2023	Timing not ideal for reptiles, some access restrictions	Fauna species: • 5 birds • 19 mammals • 3 reptiles	One significant vertebrate fauna species recorded: • Western Pebble-mound Mouse (P4)
Ministers North Consolidated Targeted Significant Vertebrate Fauna Surveys (Astron 2024)	• 6,519.6 ha • Adjacent to Survey Area and to southwest	Two-phase targeted survey	Phase 1: Apr 2023 Phase 2: Jun 2024	Some access restrictions	Fauna species: • 21 mammals • 64 birds • 25 reptiles • 1 amphibian	Four significant vertebrate fauna species recorded: • Ghost Bat (VU) • Northern Quoll (EN) • Pilbara Olive Python (VU) • Western Pebble-mound Mouse (P4)
Yandi 45C Targeted Significant Vertebrate Fauna Survey (Astron 2023)	• 1,599.5 ha • Within Survey Area and to northwest	Single phase targeted vertebrate fauna survey	Sep 2022	Single phase survey	Fauna species: • 18 mammals • 66 birds • 7 reptiles	Two significant vertebrate fauna species recorded: • Western Pebble-mound Mouse (P4) • Common Sandpiper (MI)
Ministers North Fauna Survey: Level 2 Survey (GHD 2021a)	• 255.55 ha • ~4 km south	Two-phase level 2 survey	Phase 1: Sep 2019 Phase 2: Mar 2020	Some access restrictions	Fauna species: • 19 mammals • 55 birds • 44 reptiles • 4 amphibians	Four significant vertebrate fauna species recorded: • Ghost Bat (VU) • Western Pebble-mound Mouse (P4) • Pilbara Olive Python (VU) • Pilbara Flat-headed Blind-snake (P1)

[1] Corresponding survey definitions as per EPA (2020): Level 1 approximately equivalent to Basic/Reconnaissance; Level 2 approximately equivalent to Detailed.

Report/Survey	Survey Size and Minimum Distance to Current Survey Area	Type of Survey/Study[1]	Survey Timing	Survey Limitations	No. Native Species Recorded	Threatened and Priority Species †
Ministers North Fauna Survey: Level 1 Survey (GHD 2021b)	• 2,507.69 ha • Within Survey Area and to the south and west	Single-phase level 1 fauna survey	Sep 2019	Access restrictions, below average rainfall	Fauna species: • 19 mammals • 40 birds • 8 reptiles	Two significant vertebrate fauna species recorded: • Ghost Bat (VU) • Western Pebble-mound Mouse (P4)
Ministers North to Yandi Corridor Two Phase Targeted Fauna Survey (Biologic 2018)	• 2,025 ha • ~1.5 km southwest	Two-phase level 2 vertebrate fauna survey	Phase 1: Oct 2017 Phase 2: Jun 2018	No nocturnal survey, some disturbance from recent fires	Fauna species: • 17 mammals • 54 birds • 23 reptiles	Two significant vertebrate fauna species recorded: • Western Pebble-mound Mouse (P4) • Peregrine Falcon (MI)
Ministers North Level 2 Vertebrate Fauna Survey (Biologic 2017)	• 3,028 ha • ~2.5 km south	Two-phase level 2 vertebrate fauna survey	Phase 1: Oct 2017 Phase 2: Apr 2017	Minor disturbance from fire, some access restrictions due to heavy rainfall	Fauna species: • 17 mammals • 54 birds • 43 reptiles • 2 amphibians	One significant vertebrate fauna species recorded: • Western Pebble-mound Mouse (P4)

† Taxa reviewed and updated for current nomenclature and significance status; species included as significant in past reports that are no longer listed have been excluded, and vice versa. Significance codes: EN = Endangered; VU = Vulnerable, MI = Migratory; P1 = DBCA Priority 1; P4 = DBCA Priority 4.

4.1.8 Significant Fauna

The desktop study identified 37 species of significant fauna occurring within the Study Area, comprising 21 bird (Figure 4.6), eight mammal (Figure 4.7), and eight reptile species (Figure 4.7) (see Appendix 2 for full species list). The study identified previous records of one significant species, the Western Pebble-Mound Mouse (DBCA Priority 4), within the Survey Area, and records of Northern Quoll (Endangered; n=1) and Pilbara Olive Python (Vulnerable; n=3) within 1 km (Figure 4.7).

For each significant species returned from the desktop, the likelihood of occurrence was assessed, taking into account previous records and findings of the survey. As a result, 10 species (four birds, four mammals, and two reptiles) were identified as potentially occurring in the survey area, while one species was known from the study area (Western Pebble-mound Mouse).

The full likelihood of occurrence assessment is presented in Appendix 3, and the species that are known from the Survey Area or have some potential to occur are discussed further in Sections 4.2.4 and 4.2.5.

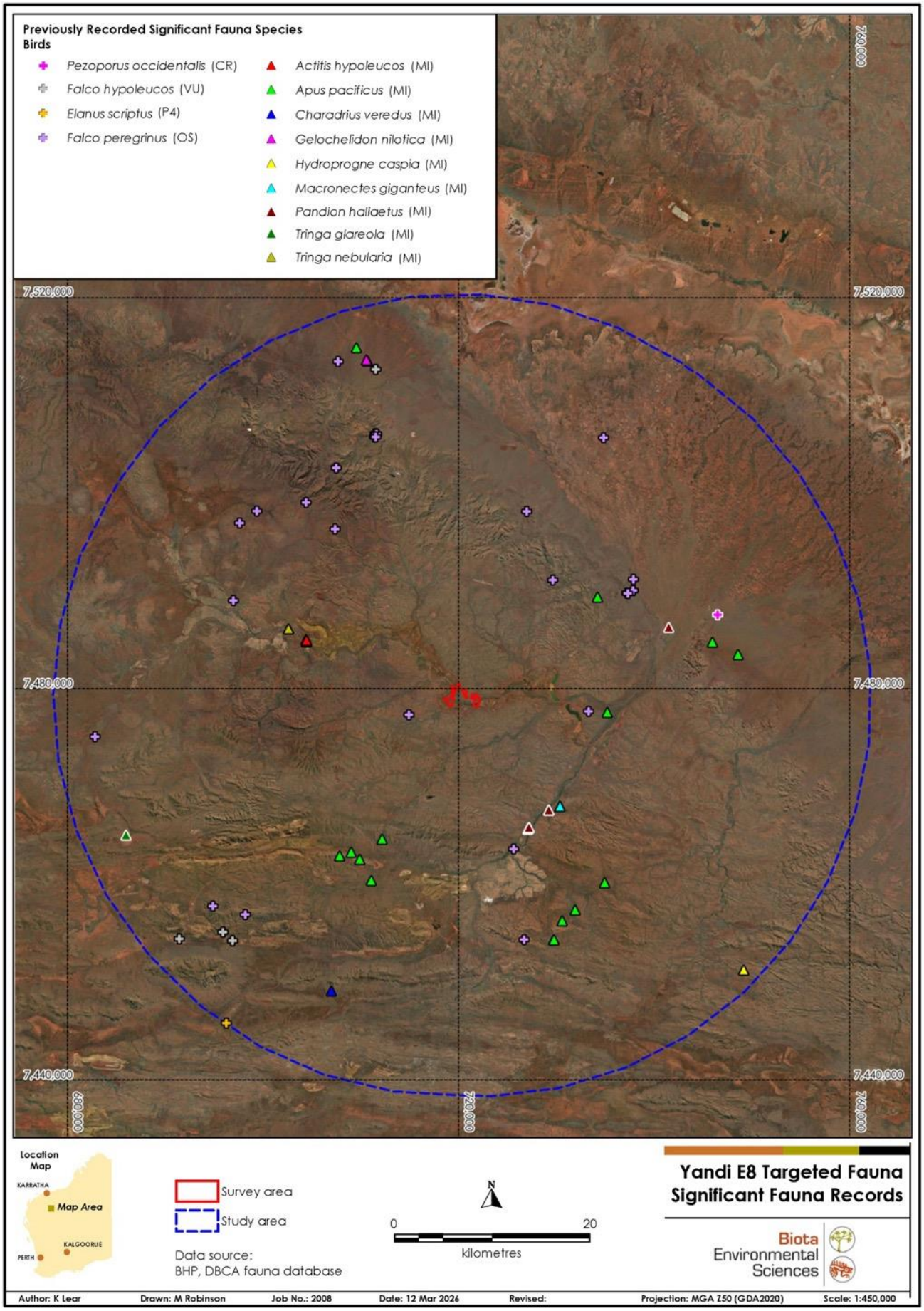

Figure 4.6: Significant bird species recorded previously in the desktop Study Area.[2]

[2] Only 21 of the 25 bird species with previous records within the Study Area are shown in Figure 4.6, as the remaining four species returned presence data from the Dandjoo database but did not have records with associated spatial information.

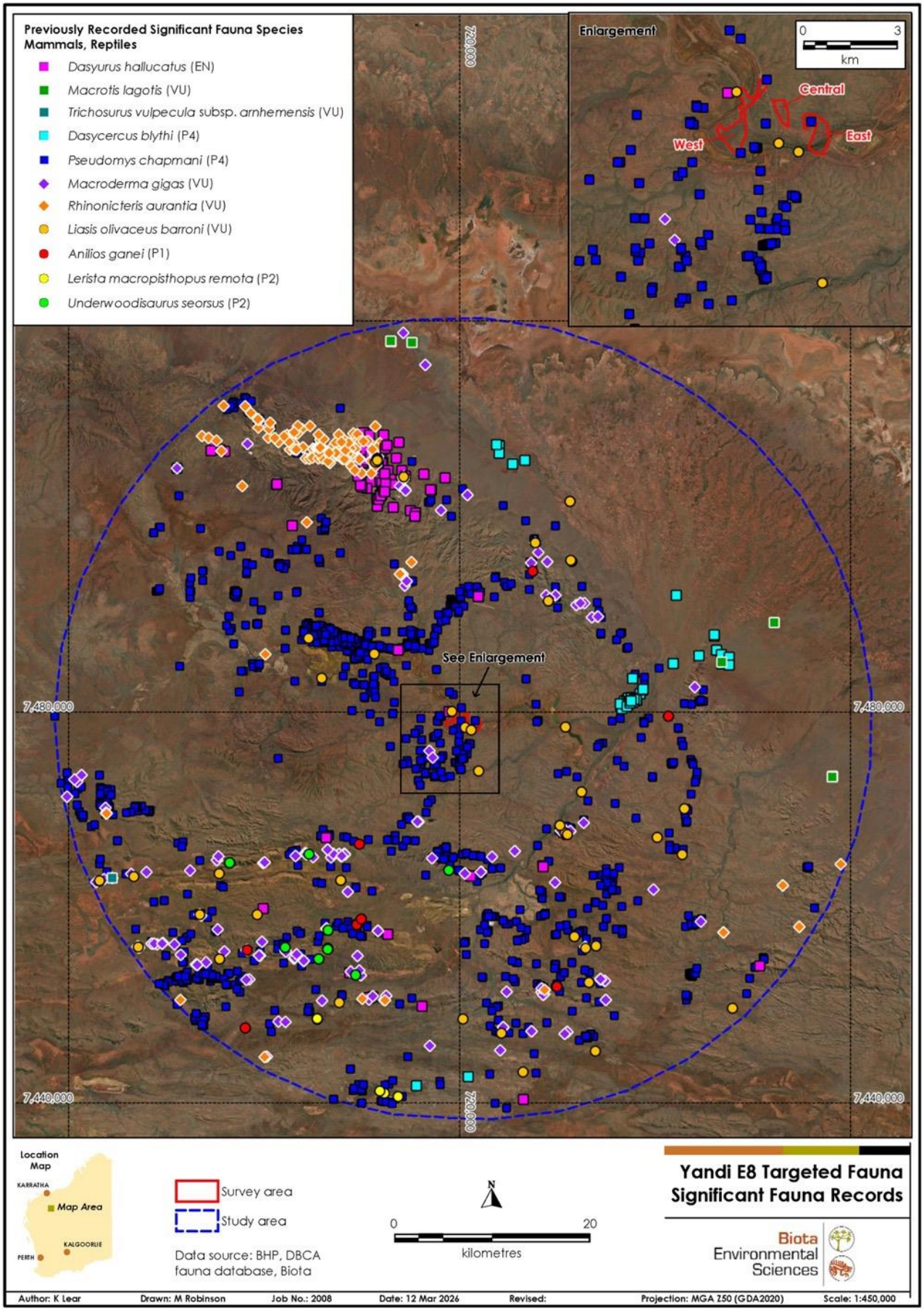

Figure 4.7: Significant mammal and reptile species previously recorded in the desktop Study Area.[3]

[3] Only seven of eight mammal species and four of eight reptile species with previous records within the Study Area are displayed in Figure 4.7, as the remaining one mammal and four reptile species returned presence data from the Dandjoo database or EPBC Protected Matters Search Tool but did not have records with associated spatial information.

4.2 Fauna Survey Results

4.2.1 Fauna Habitats

Eight fauna habitats were identified within the Survey Area:

- Hillcrest/Hillslope (22.4% of the overall Survey Area);
- Drainage Area/Floodplain (22.1%);
- Stony Plain (17.6%);
- Major Drainage Line (10.9%);
- Undulating Low Hills (6.6%);
- Minor Drainage Line (3.1%);
- Gorge/Gully (0.3%); and
- Cleared/Disturbed (17.0%).

The fauna habitats are described further in Table 4.4 and include a significance rating according to BHP's categorisation of habitat significance (BHP 2023b). Fauna habitats are mapped in Figure 4.8.

The primary disturbances identified within the Survey Area were land clearing and previous human disturbance. Approximately 17% of the total Survey Area was mapped as Cleared/Disturbed, with many of the other mapped habitats occurring in proximity to previous or current human disturbance. There was also some disturbance by cattle, especially in the West polygon of the Survey Area.

Based on reviews of aerial imagery and land systems, vegetation, and surface geology mapping (see Sections 4.1.2 to 4.1.4), none of these habitats are confined to the Survey Area and all are common and widespread in the Hamersley subregion.

4.2.2 Significant Fauna Habitats

When assessing the value of habitat in the Survey Area, it is informative to consider the critical habitat for individual species of significance. Critical habitat for MNES species equates to "habitat critical to the survival of a species" as recognised for the purposes of the EPBC Act (Department of the Environment 2013). Additionally, BHP guidance defines habitats in further detail (BHP 2023b).

For each MNES species, fauna habitats may be classified as:

1. "critical", equivalent to "habitat critical to the survival of the species" (Department of the Environment 2013) – this comprises habitat considered to potentially contain roosting, denning or breeding sites, primary foraging areas, or refugia during drought, fire or other stress; or
2. "supporting" – these comprise the remaining habitats of the survey area, which may be used on a transitory, dispersing or occasional basis, but do not represent critical habitat.

It is assumed that some proportion of critical habitat must be maintained across a species' range to ensure its persistence in the region. Supporting habitats may be used for less regular foraging or on a transitory, dispersing, or occasional basis, but do not represent critical habitat. A summary of each fauna habitats' potential value to significant species is included in Table 4.4.

Table 4.4: Fauna habitats identified within the Survey Area.

Habitat Type, Extent and Description	Fauna Values	Representative Photo
Hillcrest/Hillslope **West Extent:** 25.2 ha (29.1%) **Central Extent:** 13.6 ha (57.5%) **East Extent:** 0.0 ha (0%) **Total Extent:** 38.9 ha (22.4%) **Description:** Rocky substrate on moderate slopes, often with some ironstone outcrops. Vegetation dominated by *Triodia* spp., with some *Acacia* spp. and *Grevillea* spp. and occasional Eucalypts. **Significance:** Medium	• Supporting habitat for Northern Quoll and Pilbara Olive Python (foraging and temporary shelter within ironstone outcrops). • High importance for Western Pebble-mound Mouse. • Supporting habitat for Fork-tailed Swift, Australian Tern, Grey Falcon and Peregrine Falcon (foraging).	
Drainage Area/Floodplain **West Extent:** 36.5 ha (42.1%) **Central Extent:** 0.0 ha (0%) **East Extent:** 2.0 ha (3.1%) **Total Extent:** 38.5 ha (22.1%) **Description:** Flat, low-lying area surrounding drainages subjected to occasional flooding following large rainfall events. Substrate is comprised of alluvial sediments Vegetation is more variable compared to rocky habitats in the Survey Area, often still dominated by *Triodia* spp, but with more regular occurrence of *Eucalyptus leucophloia*, *Corymbia hamersleyana, Acacia* spp., and *Grevillea* spp. **Significance:** Medium	• Supporting habitat for Pilbara Olive Pythons, particularly when inundated (foraging and dispersal). • Supporting habitat for Ghost Bats and Pilbara Leaf-nosed Bats (foraging and dispersal). • Supporting habitat for Fork-tailed Swift, Australian Tern, Grey Falcon and Peregrine Falcon (foraging).	

Habitat Type, Extent and Description	Fauna Values	Representative Photo
Stony Plain **West Extent:** 5.8 ha (6.7%) **Central Extent:** 6.0 ha (25.6%) **East Extent:** 18.8 ha (29.6%) **Total Extent:** 30.6 ha (17.6%) **Description:** Flat, to low undulating areas and low hills with vegetation dominated by *Triodia* spp., with scattered Eucalypts and patches of mixed small to medium shrubs on gravelly (stony), sandy clay loam substrates. Inclusive of a few areas of larger, ironstone outcrops. **Significance:** Medium	• High importance for Western Pebble-mound Mouse (denning and foraging). • Some supporting habitat for Northern Quoll and Pilbara Olive Python (dispersal and temporary shelter sites within the limited ironstone outcrops in this habitat), as both species are likely to traverse over this habitat type periodically, especially where it occurs near to Gorge/Gully and Major Drainage Line habitats. • Supporting habitat for Fork-tailed Swift, Australian Tern, Grey Falcon and Peregrine Falcon (foraging).	
Major Drainage Line **West Extent:** 0.0 ha (0%) **Central Extent:** 0.0 ha (0%) **East Extent:** 19.0 ha (29.9%) **Total Extent:** 19.0 ha (10.9%) **Description:** Large, flat river channel with permanent water pools. Vegetation was very dense in some areas, dominated by *Eucalyptus leucophloia*, with patches of dense *Typha domingensis* surrounding permanent water pools. Substantial woody debris was also present in the area, indicating that large floods sometimes occur. **Significance:** High	• Critical habitat for Pilbara Olive Python (foraging, sheltering, and dispersal). • Supporting habitat (foraging and dispersal) for Pilbara Leaf-nosed Bat and Ghost Bat. • Supporting habitat for Northern Quoll (foraging and dispersal). • Supporting habitat for Fork-tailed Swift, Australian Tern, Grey Falcon and Peregrine Falcon (foraging).	

Habitat Type, Extent and Description	Fauna Values	Representative Photo
Undulating Low Hills **West Extent:** 0.0 ha (0%) **Central Extent:** 0.0 ha (0%) **East Extent:** 11.5 ha (18.1%) **Total Extent:** 11.5 ha (6.6%) **Description:** Footslopes of low stony hills with vegetation dominated by *Triodia* spp., with scattered shrubs of *Acacia* spp. on gravelly, sandy clay loam substrates. **Significance:** Medium	• High importance for Western Pebble-mound Mouse (denning and foraging). • Supporting habitat for Northern Quoll (dispersal). • Supporting habitat for Fork-tailed Swift, Australian Tern, Grey Falcon and Peregrine Falcon (foraging).	
Minor Drainage Line **West Extent:** 4.1 ha (4.7%) **Central Extent:** 1.3 ha (5.5%) **East Extent:** 0.0 ha (0%) **Total Extent:** 5.4 ha (3.1%) **Description:** Ephemeral, minor drainage lines. Vegetation includes scattered mixed *Acacia* and *Grevillea* spp., over *Triodia* hummock grasses and mixed tussock grasses. Likely only inundated after significant rainfall events. **Significance:** Medium	• The Minor Drainage Lines intersect Drainage Area/Floodplain and Stony Plain habitats, and as part of the interconnected landscape are likely to offer occasional supporting habitat as foraging and dispersal routes for species including Northern Quoll and Pilbara Olive Python. However, it is notable that the Minor Drainage Lines within the Survey Area are likely seldom inundated and have relatively low vegetation cover and complexity, and therefore are unlikely to offer high quality habitat for these species. • Supporting habitat for Fork-tailed Swift, Australian Tern, Grey Falcon and Peregrine Falcon (foraging).	

Habitat Type, Extent and Description	Fauna Values	Representative Photo
Gorge/Gully **West Extent:** 0.6 ha (0.6%) **Central Extent:** 0.0 ha (0%) **East Extent:** 0.0 ha (0%) **Total Extent:** 0.6 ha (0.3%) **Description:** Rocky, steep, rugged valleys incised into the surrounding habitat, often with large outcrops of ironstone. The Gorge/Gully habitats within the Survey Area were small and highly localised, and did not contain any rock shelters that would offer suitable roost locations for bat species. Understorey vegetation was dominated by tussock grasses, with occasional emergent *Eucalyptus leucophloia*, *Corymbia hamersleyana, Acacia* spp., and *Grevillea* spp. **Significance:** High	• Critical habitat for Northern Quoll and Pilbara Olive Python (denning and foraging habitat). • Supporting habitat for Pilbara Leaf-nosed Bats and Ghost Bats (foraging and dispersal). • Supporting habitat for Fork-tailed Swift, Australian Tern, Grey Falcon and Peregrine Falcon (foraging). • High importance for Pilbara Barking Gecko and Pilbara Flat-headed Blind-snake (denning and foraging).	
Cleared/Disturbed **West Extent:** 14.6 ha (16.8%) **Central Extent:** 2.7 ha (11.5%) **East Extent:** 12.2 ha (19.2%) **Total Extent:** 29.5 ha (17.0%) **Description:** Roads, tracks, drill pads, and other previously cleared or developed areas. **Significance:** Low	No fauna species are likely to use these areas as core habitat.	

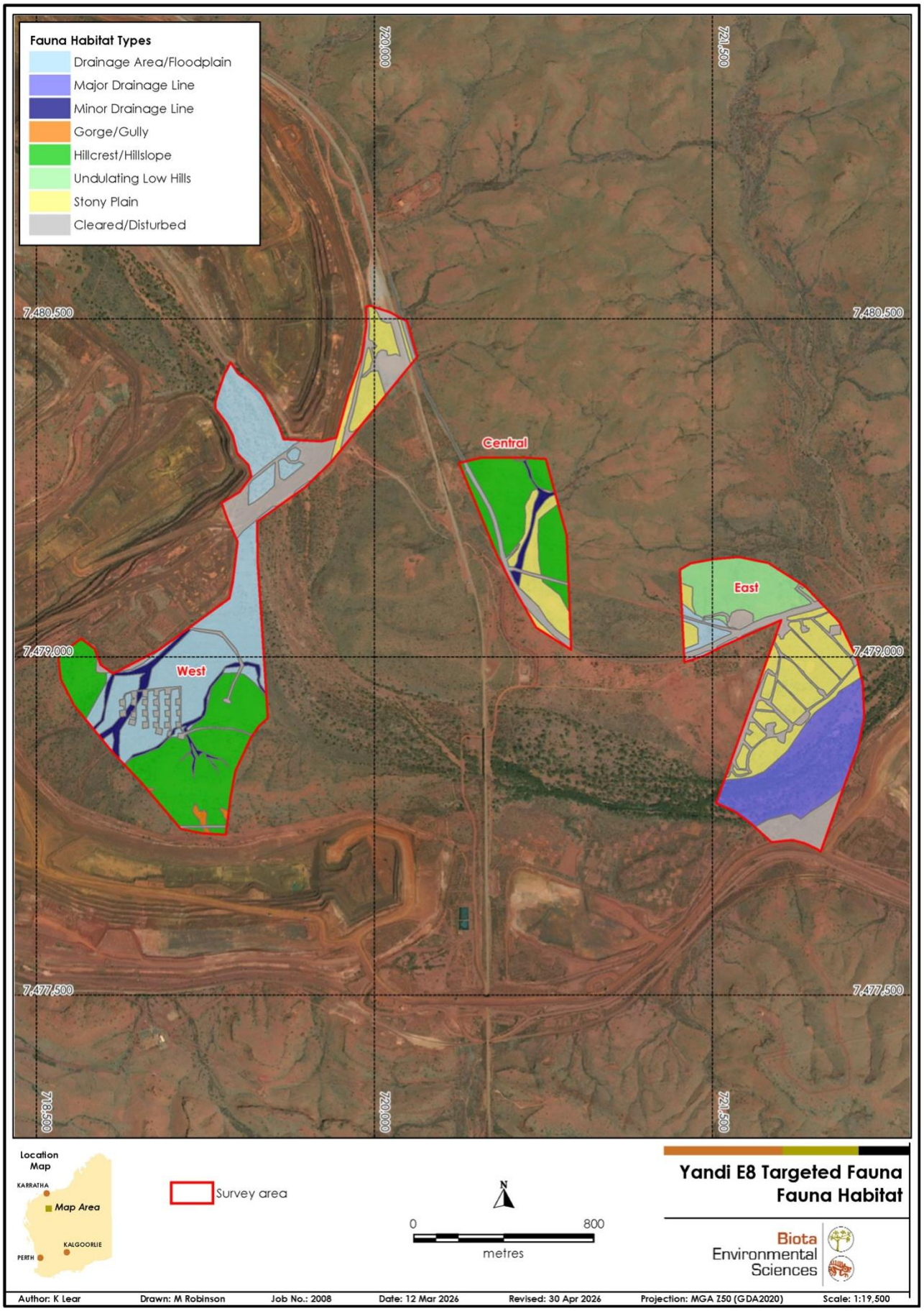

Figure 4.8: Fauna habitats identified within the Survey Area.

4.2.3 Vertebrate Fauna Recorded

A total of 21 vertebrate fauna species were recorded during the survey, including eight mammals (seven native, one introduced), five birds, and eight reptiles. Fifteen of the 21 species were recorded during targeted searches (Table 4.5), while the ultrasonic recorders detected six non-significant bat species; the motion cameras did not detect any fauna. All six bat species detected during the survey were identified at all three sampling sites on every night of deployment (Table 4.6). One significant species, the Western Pebble-mound Mouse (DBCA Priority 4), was recorded during targeted searches and is discussed further in Section 4.2.4.

Table 4.5: Vertebrate fauna species recorded during targeted searches (see Table 4.6 for bat species detected by Ultrasonic Sound Recorders).

Species	Common Name	Conservation Status
Mammals		
Pseudomys chapmani	Western Pebble-mound Mouse	P4
**Bos taurus*	European Cattle	
Birds		
Cacatua sanguinea	Little Corella	
Corvus orru subsp. *cecilae*	Torresian Crow	
Rhipidura leucophrys subsp. *leucophrys*	Willie Wagtail	
Falco berigora	Brown Falcon	
Falco cenchroides	Nankeen Kestrel	
Reptiles		
Gehyra macra	Large Pilbara Rock Gehyra	
Gehyra micra	Small Pilbara Spotted Rock Gehyra	
Gehyra variegata	Tree Gecko	
Heteronotia binoei	Binoe's Gecko	
Heteronotia spelea	Desert Cave Gecko	
Gowidon longirostris	Long-nosed Dragon	
Ctenophorus caudicinctus	Ring-tailed Dragon	
Antaresia childreni	Children's Python	

* Introduced species

Table 4.6: Bat species recorded by Ultrasonic Sound Recorders during the survey.

Species	Common Name	Dates Recorded per Site		
		YANB-01	YANB-02	YANB-03
Chaerephon jobensis subsp. *colonicus*	Greater Northern Free-tailed Bat	09-11/01/2026	11-13/01/2026	13-15/01/2026
Chalinolobus gouldii	Gould's Wattled Bat	09-11/01/2026	11-13/01/2026	13-15/01/2026
Scotorepens greyii	Little Broad-nosed Bat	09-11/01/2026	11-13/01/2026	13-15/01/2026
Taphozous georgianus	Common Sheath-tailed Bat	09-11/01/2026	11-13/01/2026	13-15/01/2026
Taphozous hilli	Hill's Sheathtail Bat	09-11/01/2026	11-13/01/2026	13-15/01/2026
Vespadelus finlaysoni	Finlayson's Cave Bat	09-11/01/2026	11-13/01/2026	13-15/01/2026

4.2.4 Significant Fauna Recorded

Western Pebble-mound Mouse *(Pseudomys chapmani)* – DBCA Priority 4

Once described as endemic to the central and eastern parts of the Pilbara (Menkhorst and Knight 2011), this species is now known to occur much more widely over the entire Pilbara region and into the Gascoyne (based on Atlas of Living Australia records). This species is typically found on stony hillsides with hummock grasslands (Menkhorst and Knight 2011) and is common to very common in suitable habitat within the Hamersley and Chichester subregions of the Pilbara bioregion.

The Western Pebble-mound Mouse is well known for its behaviour of constructing extensive mounds of small stones covering areas from 0.5 to 9.0 m^2 (van Dyck and Strahan 2008). Active mounds are identifiable by features such as the presence of maintained turrets and lack of debris in the turrets. Inactive mounds generally display a more flattened and consolidated appearance due to the lack of routine maintenance and pebble movement. This mound formation is most common on spurs and gentle slopes where suitably sized stones are present. Habitat destruction and altered fire regimes that remove old growth habitat constitute the main threatening processes for this species.

One active (Plate 4.1) and one inactive Western Pebble-mound Mouse mound were recorded within the West polygon of the Survey Area, and a single inactive mound was recorded in the Central polygon of the Survey Area (Table 4.7, Figure 4.9). These were all within the Hillcrest/Hillslope habitat. An additional two previous records of the Western Pebble-mound Mouse (from the West and East polygons of the Survey Area) were identified during the desktop study, in Stony Plain and Undulating Low Hills habitats. Hillcrest/Hillslope, Undulating Low Hills and Stony Plain habitats are considered to have a high importance for this species, however these habitat types are not restricted to the survey area. The Western Pebble-mound Mouse is common throughout the locality, with over 2,500 records identified within the Study Area.

Table 4.7: Observations of Western Pebble-mound Mouse (*Pseudomys chapmani*) mounds recorded during the survey.

Survey Polygon	Date Observed	Mound Status	Latitude	Longitude
Central	09/01/2026	Inactive	-22.77721	119.14919
West	13/01/2026	Active	-22.78752	119.13532
West	13/01/2026	Inactive	-22.78695	119.13353

Plate 4.1: **Active Western Pebble-mound Mouse (*Pseudomys chapmani*) mound observed in the West Survey Area.**

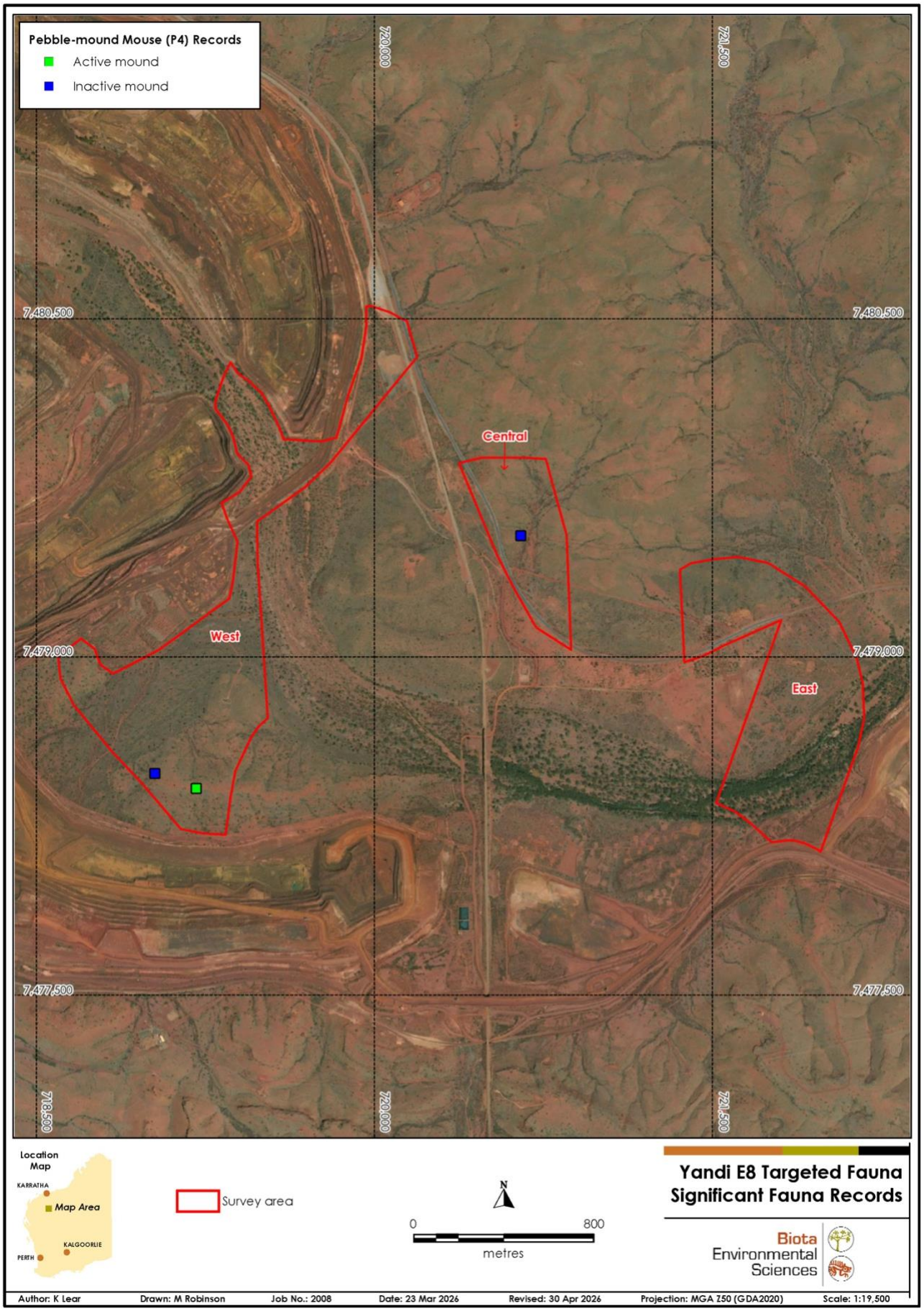

Figure 4.9: **Locations of the active and inactive mounds made by Western Pebble-mound Mouse (*Pseudomys chapmani*) observed during the survey.**

4.2.5 Significant Vertebrate Fauna Potentially Occurring

A total of 37 significant vertebrate fauna species were identified as potentially occurring during the desktop study, with their likelihood of occurrence assessments detailed in Appendix 3. In addition to the recorded Western Pebble-Mound Mouse, these species included five that have a high likelihood of occurrence and five with a moderate likelihood of occurrence, as follows.

Species with a high likelihood of occurrence in the Survey Area comprise:

- Northern Quoll (*Dasyurus hallucatus*) – BC Act and EPBC Act Endangered;
- Pilbara Olive Python (*Liasis olivaceus* subsp. *barroni*) – BC Act and EPBC Act Vulnerable;
- Ghost Bat (*Macroderma gigas*) – BC Act and EPBC Act Vulnerable;
- Fork-tailed Swift (*Apus pacificus*) – BC Act and EPBC Act Migratory; and
- Peregrine Falcon (*Falco peregrinus*) – BC Act Other Specially Protected.

Species with a moderate likelihood of occurrence in the Survey Area comprise:

- Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*) – BC Act and EPBC Act Vulnerable;
- Grey Falcon (*Falco hypoleucos*) – BC Act and EPBC Act Vulnerable;
- Australian [Gull-billed] Tern (*Gelochelidon* [*nilotica*] *macrotarsa*) – BC Act and EPBC Act Migratory;
- Pilbara Flat-headed Blind-snake (*Anilios ganei*) – DBCA Priority 1; and
- Pilbara Barking Gecko (*Underwoodisaurus seorsus*) – DBCA Priority 2.

These species are discussed further in Sections 4.2.5.1 and 4.2.5.2 below.

4.2.5.1 Significant Fauna with a High Likelihood of Occurrence

Northern Quoll (*Dasyurus hallucatus*) – BC Act and EPBC Act Endangered

Historically common across northern Australia, the Northern Quoll distribution has declined dramatically and it is now restricted to the Pilbara, Kimberley, parts of the Northern Territory, and near-coastal Queensland (DCCEEW 2023). Northern Quolls are particularly susceptible to cane toad poisoning and face a myriad of other threats, including predation by feral cats, hot fires, grazing and habitat loss (DCCEEW 2023).

Ground-truthing during the survey confirmed that the Gorge/Gully and Major Drainage Line habitats in the Survey Area could meet the criteria for critical habitat for the Northern Quoll (Department of the Environment 2013, BHP 2023b). The Minor Drainage Line fauna habitat meets the definition of supporting habitat as it may be used for foraging and dispersal (Department of the Environment 2016, BHP 2023b). In addition, the Stony Plain, Drainage Area/Floodplain and Hillcrest/Hillslope fauna habitats meet the definition of supporting habitat as per BHP (2023b). The remaining habitat in the survey area (Undulating Low Hills, Cleared/Disturbed Areas) are not considered to be prospective for the Northern Quoll as they contain little in the way of vegetative cover, den or shelter locations, making quolls vulnerable to predators such as dingos, feral cats and foxes.

No Northern Quolls were observed during the survey, however the desktop study returned 534 records from the locality; most records were grouped approximately 25 km to the northwest, but one record was only 350 m from the Survey Area, and several other records were within 20 km of the Survey Area. Given the proximity of these records and presence of suitable denning and foraging habitat in the Survey Area, the Northern Quoll is considered to have a high likelihood of occurrence within the Survey Area, especially within the West and East polygons.

Pilbara Olive Python (*Liasis olivaceus* subsp. *barroni*) – BC Act and EPBC Act Vulnerable

There is no reliable information on the historical distribution of the Pilbara Olive Python and no published evidence that it has significantly contracted in range. Currently the species is confined to ranges in the Pilbara and islands of the Dampier Archipelago, with one isolated population known from Mount Augustus in the Gascoyne region (Bush and Maryan 2011).

Preferred habitat for the Pilbara Olive Python includes gorges, escarpments, rocky outcrops and permanent drainages with fringing vegetation (Pearson 2003, Bush and Maryan 2011). Refuges include caves, rocky crevices, gorges containing rockpools (where it can lie in an ambush position) and occasionally in trees overhanging water (Pearson 2003, Bush and Maryan 2011). Radio-telemetry studies indicate that individuals usually occur in proximity to water and rock outcrops that attract suitable prey (Pearson 2003). The Pilbara Olive Python is often associated with ephemeral or permanent water but may also be recorded in rocky habitats some distance from these features in transitory or dispersal habitat.

No Pilbara Olive Pythons were recorded during the current survey, but the desktop study returned 68 regional records, including several that were very close to the Survey Area (within 75 – 500 m). The Major Drainage Line habitat in the East Survey Area and small Gorge/Gully habitats within the West Survey Area offer foraging and refuging habitat for this species. The Minor Drainage Line and Drainage Area/Floodplain habitats may also offer foraging areas when inundated, and larger rocky outcrops within the Hillcrest/Hillslope and Stony Plain habitats could offer some refuge areas. It is therefore considered that the Pilbara Olive Python has a high likelihood of occurrence within the Survey Area, particularly in the East polygon.

Ghost Bat (*Macroderma gigas*) – BC Act and EPBC Act Vulnerable

Ghost Bats previously occurred across most of inland and northern Australia, but are now restricted to the tropical and subtropical north of the continent (Churchill 2008). The current distribution of this species is fragmented, with each population showing some genetic differentiation (Armstrong and Wilmer 2004). In the Pilbara, Ghost Bats usually occur alone or in small colonies; however, there are some large colonies in abandoned mines (Bat Call WA 2021b). Ghost Bats occur in a broad range of habitats, with distribution influenced by the availability of suitable caves for roost sites and prey biomass; individuals are known to forage over areas of up to 60 ha (Churchill 2008). Roost sites include caves, rock crevices and disused mine adits (Bat Call WA 2021b).

There is limited knowledge of foraging habitat, but GPS data suggest that *"productive plains areas with thin mature woodland over patchy or clumped tussock or hummock grass (Triodia spp.) on sand or stony ground [with] isolated trees and trees on the edge of thin thickets on the plains, or trees along the edges of watercourse woodlands "* may be used (Bat Call WA 2021b). Similarly, Biologic (2022a, 2022b, 2023) found stony plains (where complexity in vegetation structure was present) to be suitable foraging habitat, but also identified drainage areas and floodplains as highly suitable.

This species was not detected in the survey area during the current study. The desktop study returned many records in the Study Area, including some within 3 km of the Survey Area. Additionally, previous surveys identified potential Ghost Bat diurnal roost and feeding caves in Ministers North (caves with Ghost Bat scat present), approximately 4 km away from suitable foraging habitat identified within the Survey Area (GHD 2021a).

Ground-truthing during the survey confirmed that habitats meeting the definition of critical habitat (Department of the Environment 2013, BHP 2023b) for the Ghost Bat were absent from the Survey Area, with no suitable roosting or breeding locations identified. However, the Major and Minor Drainage Line, Drainage Area/Floodplain, and Gorge/Gully habitats in the Survey Area likely have some foraging potential, particularly the drainages with eucalypts along the edge providing vantage points for locating prey; these would therefore comprise supporting habitat as defined by BHP (2023b). Given the proximity of previous records, including probable roost locations in Ministers North, and the presence of suitable foraging habitat, the Ghost Bat is considered likely to occur within the Survey Area as a foraging visitor, especially within the Major Drainage Line Habitat of the East polygon.

Peregrine Falcon (*Falco peregrinus*) – BC Act Other Specially Protected

The Peregrine Falcon is distributed widely throughout most of Australia, but is absent from most deserts and the Nullarbor Plain (Johnstone and Storr 1998). This species inhabits a wide range of habitats including forests, woodlands, wetlands and open country (Pizzey and Knight 2007). Individuals maintain large home ranges of up to 30 km^2, and nest in recesses of cliff faces, tree hollows and along rivers (Johnstone and Storr 1998).

The Peregrine Falcon was not recorded during the current survey, but the desktop study returned 53 regional records, the closest of which is 4 km west of the Survey Area. All habitat types within the Survey Area represent potentially suitable foraging habitat, and this species is highly mobile. It is therefore considered that the Peregrine Falcon has a high likelihood of occurrence in the Survey Area for sporadic foraging.

Fork-tailed Swift (*Apus pacificus*) – BC Act and EPBC Act Migratory

The Fork-tailed Swift (currently known as the Pacific Swift) occurs as a non-breeding migrant across much of Australia from September to April, particularly in the northern half of the continent. In general, the species is most common closer to the coast but occurs over much of the Pilbara and Kimberley. In Australia, the species is entirely aerial in habit, foraging for flying insects and even sleeping on the wing. It is highly mobile, often occurring in association with unsettled weather and low pressure systems (Johnstone and Storr 1998).

No Fork-tailed Swifts were recorded during the current survey. However, a total of 26 records of this species were identified in the desktop study, with the closest approximately 16 km from the Survey Area, and the Survey Area falls within the published distribution of the species (Menkhorst et al. 2017). Given the proximity of records, the mobile nature of this species, and presence of suitable habitat, it is considered to have a high likelihood of occurrence in the airspace over the Survey Area sporadically between September and April. Occurrence is most likely in association with the passage of low-pressure systems or other unsettled weather conditions, but would not be limited to these conditions. The species could potentially use airspace over all fauna habitats within the Survey Areas.

4.2.5.2 Significant Fauna with a Moderate Likelihood of Occurrence

Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*) – BC Act and EPBC Act Vulnerable

The Pilbara form of *Rhinonicteris aurantia* occurs in the Pilbara, Ashburton and Little Sandy Desert bioregions (Bat Call WA 2021a). The species requires caves with stable warm and humid conditions for roosting (DCCEEW 2026b) and there are currently 17 known category 1 or 2 diurnal roost sites (Bat Call WA 2021a). The species usually forages up to 20 km from the roost site, in a relatively wide variety of habitats (Bat Call WA 2021a). Areas with complex vegetation and permanent or ephemeral water, such as drainage lines, have the highest foraging potential. The species will also use a range of other habitats and traverse through less suitable habitat to foraging sites (Bat Call WA 2021a).

This species was not detected by the ultrasonic sound recorders deployed during this study, however the desktop study returned many records from the Study Area. Most records were centred in the Hamersley Ranges approximately 25-35 km northwest of the Survey Area, however other records were scattered throughout the Study Area, with the nearest approximately 15 km to the north of the Survey Area.

Ground-truthing during the survey confirmed that habitat meeting the definition of critical habitat (Department of the Environment 2013) for the Pilbara Leaf-nosed Bat was absent, and no suitable roosting or breeding locations were identified within the Survey Area. However, the Major and Minor Drainage Line habitats, Gorge/Gully habitat, and Drainage Area/Floodplain habitat are considered suitable foraging habitat for the Pilbara Leaf-nosed Bat, particularly as some of the drainages connects to rocky hills outside of the survey area (BHP 2023a). Therefore, it is considered that the Pilbara Leaf-nosed Bat has a moderate likelihood of occurrence within the Survey Area as a foraging visitor.

Grey Falcon (*Falco hypoleucos*) – BC Act and EPBC Act Vulnerable

The Grey Falcon has a wide distribution across much of arid inland and northern Australia, occurring mainly on lightly wooded plains and along major watercourses (Johnstone et al. 2013). Breeding usually takes place in taller trees such as river red gums, or on isolated man-made structures such as communications towers (Johnstone and Storr 1998).

As categorised by BHP WAIO (BHP 2023b), critical habitat consists of "major drainage habitats with suitably sized Eucalypts (*Eucalyptus camaldulensis, E. coolabah*) as potential nesting habitat, often in the abandoned nest of a raptor or corvid in trees." Supporting habitat comprises "timbered lowland plains, particularly *Acacia* shrublands that are crossed by tree-lined water courses" and "hunting [habitat] in treeless areas, particularly tussock grassland and open woodland."

The Grey Falcon was not recorded during the current survey. Eight regional records were identified during the desktop study, the closest approximately 27 km north. However, the Survey Area falls within the published distribution of the species, the species is highly mobile, and there is suitable foraging habitat present. No critical habitat occurs in the Survey Area (Department of the Environment 2013, BHP 2023b). However, the Stony Plain, Hillcrest/Hillslope, Undulating Low Hills, Drainage Area/Floodplain, and Major and Minor Drainage Line habitats in the Survey Area are considered to be supporting habitat that would be suitable for foraging (BHP 2023b). It is therefore considered that the Grey Falcon has a moderate likelihood of occurrence in the Survey Area for sporadic foraging.

Australian Tern (*Gelochelidon [nilotica] macrotarsa*) – BC Act and EPBC Act Migratory

The Australian Tern is listed as Migratory under the BC Act and EPBC Act as the Gull-billed Tern. At the time of listing, this species was treated as conspecific with the migratory Common Gull-billed Tern. Most authorities now recognise the Australian Tern as a distinct species, based on differences in plumage, structure, ecology and genetics (Rogers et al. 2005). Australian Terns are nomadic and occur widely across Australia, including both coastal and inland areas, but generally remain within Australia. They breed colonially on inland wetlands, and forage over sheltered coasts, estuaries, inland wetlands, and over open grassland and bare ground (Johnstone and Storr 1998).

The Australian Tern was not recorded from the Survey Area during the current survey, and the desktop study identified only two previous records, both approximately 34 km north of the Survey Area. There is suitable foraging habitat in the Survey Area in parts of the Major and Minor Drainage Line and Floodplain/Drainage Area habitats, and the species has therefore been assessed as having a moderate likelihood of occurrence.

Pilbara Flat-headed Blind-snake (*Anilios ganei*) – DBCA Priority 1

The Pilbara Flat-headed Blind-snake is poorly collected, being represented by only 32 records from Western Australia. This species is distributed from Pannawonica in the west, to Millstream in the north, to Newman in the east and to the Nanutarra-Munjina Road in the south.

The records collected to date indicate that this blind snake may be associated with moist gorges and gullies (Wilson and Swan 2008) but they have also been recorded from mulga woodland and rocky scree slopes. The ecology of this species is poorly known, but it is likely that as with most blind snakes, they would mostly inhabit topsoil, termitaria and ant nests. Blind snake diet typically consists of the eggs, larvae and pupae of ants (Storr et al. 2002).

The Pilbara Flat-headed Blind-snake was not recorded during the survey; however, there are 15 records of the species from the Study Area, the most recent from 2011 approximately 15 km to the southwest of the Survey Area. The small Gorge/Gully habitats within the West polygon of the Survey Area and larger rocky outcrops within Hillcrest/Hillslope, Stony Plain, and Undulating Low Hills habitats throughout the Survey Area may offer some habitat for this poorly known species. This species is therefore considered to have a moderate likelihood of occurrence within the Survey Area.

Pilbara Barking Gecko (*Underwoodisaurus seorsus*) – DBCA Priority 2

This species is a Hamersley Range endemic that was discovered in 2006 but was not described until 2011 (Doughty and Oliver 2011). It was initially thought to be an isolated population of its more southerly relative, the Barking Gecko *Underwoodisaurus milii* (Menz and Cullen 2006) before morphological and molecular analysis showed it to be taxonomically distinct. To date, there are very few records of this species, which occurs in a band from north of Tom Price in the western Hamersleys to West Angelas mine in the southeast (Doughty and Oliver 2011). The habitats used by this species vary in their topography and vegetation but are usually associated with rocky ridges, slopes and gullies.

The Pilbara Barking Gecko was not recorded during the current survey, however a concentration of 20 records is known from approximately 24 km southwest of the Survey Area, and there is some suitable habitat (small gullies) present within the West polygon of the Survey Area. Therefore, this species was assigned a moderate likelihood of occurrence in the West polygon of the Survey Area, but is unlikely to occur in the Central or East polygons.

5.0 Discussion

Within the desktop Study Area, 37 significant fauna species were identified, comprising 21 birds, eight mammals and eight reptiles. Of these, one species, the Western Pebble-mound Mouse (DBCA Priority 4), had previous records within the Survey Area and was recorded during the field survey. This species is common in the Hamersley subregion of the Pilbara, with over 2,500 records returned from the desktop searches conducted for this study.

Eight fauna habitats were identified within the survey area, comprising Hillcrest/Hillslope, Drainage Area/Floodplain, Stony Plain, Major Drainage Line, Undulating Low Hills, Minor Drainage Line, Gorge/Gully, and Cleared/Disturbed. The Meajor Drainage Line habitat in the East Survey Area and the Gorge/Gully habitats in the West Survey Area, alongside the Minor Drainage Line habitats, provide particularly suitable foraging and transiting habitats for several species, including Northern Quoll and Pilbara Olive Python. The Major and Minor Drainage Line habitats also provide suitable foraging habitats for Ghost Bats, which are known to roost nearby (within 5 km). Rocky habitats including Hillcrest/Hillslope, Stony Plain, Undulating Low Hills, and Gorge/Gully habitats provide important denning and refuging habitat for species including the Northern Quoll, Pilbara Olive Python, Western Pebble-mound Mouse, Pilbara Barking Gecko, and Pilbara Flat-headed Blind-snake. Open habitats including Drainage Area/Floodplain, Hillcrest/Hillslope, Stony Plain, and Undulating Low Hills provide potential foraging habitats for several significant bird species including the Peregrine Falcon, Australian Tern, Fork-tailed Swift and Grey Falcon.

Based on the presence of suitable habitat, combined with previous records collated by the desktop study, five significant species have a high likelihood of occurrence within the Survey Area (in addition to the recorded Western Pebble-mound Mouse), and a further five significant species have a moderate likelihood of occurrence:

Recorded:

- Western Pebble-mound Mouse (*Pseudomys chapmani*) – DBCA Priority 4.

High Likelihood of Occurrence:

- Northern Quoll (*Dasyurus hallucatus*) – BC Act and EPBC Act Endangered;
- Pilbara Olive Python (*Liasis olivaceus* subsp. *barroni*) – BC Act and EPBC Act Vulnerable;
- Ghost Bat (*Macroderma gigas*) – BC Act and EPBC Act Vulnerable;
- Fork-tailed Swift (*Apus pacificus*) – BC Act and EPBC Act Migratory; and
- Peregrine Falcon (*Falco peregrinus*) – BC Act Other Specially Protected.

Moderate Likelihood of Occurrence:

- Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*) – BC Act and EPBC Act Vulnerable;
- Grey Falcon (*Falco hypoleucos*) – BC Act and EPBC Act Vulnerable;
- Australian Tern (*Gelochelidon macrotarsa*) – BC Act and EPBC Act Migratory;
- Pilbara Flat-headed Blind-snake (*Anilios ganei*) – DBCA Priority 1; and
- Pilbara Barking Gecko (*Underwoodisaurus seorsus*) – DBCA Priority 2.

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Appendix 1 Framework for Significance Rankings of Species in WA

CONSERVATION CATEGORY DEFINITIONS

For Western Australian Fauna and Flora

Threatened, Extinct and Specially Protected fauna or flora[1] are species[2] which have been adequately searched for and are deemed to be, in the wild, threatened, extinct or in need of special protection, and have been gazetted as such.

Categories of Threatened, Extinct and Specially Protected fauna and flora are:

T Threatened species

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

Threatened fauna is the species of fauna that are listed as critically endangered, endangered or vulnerable threatened species.

Threatened flora is the species of flora that are listed as critically endangered, endangered or vulnerable threatened species.

The assessment of the conservation status of threatened species is in accordance with the BC Act listing criteria and the requirements of Ministerial Guideline Number 1 and Ministerial Guideline Number 2 that adopts the use of the International Union for Conservation of Nature (IUCN) Red List of Threatened Species Categories and Criteria[3], and is based on the national distribution of the species.

CR Critically endangered species

Threatened species considered to be "*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines.

Examples of use:

- The western ringtail possum (*Pseudocheirus occidentalis*) is listed as a critically endangered threatened species under the *Biodiversity Conservation Act 2016.*
- Western ringtail possum is listed as critically endangered under the *Biodiversity Conservation Act 2016.*
- Listing reference in a table: column heading: BC Act, row text: CR.

EN Endangered species

Threatened species considered to be "*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines.

Examples of use:

- *Caladenia hopperiana* is listed as an endangered threatened species under the *Biodiversity Conservation Act 2016.*
- *Caladenia hopperiana* is listed as endangered under the *Biodiversity Conservation Act 2016.*
- Listing reference in a table: column heading: BC Act, row text: EN.

VU Vulnerable species

Threatened species considered to be "*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines.

Examples of use:

- The forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) is listed as a vulnerable threatened species under the *Biodiversity Conservation Act 2016.*
- Forest red-tailed black cockatoo is listed as vulnerable under the *Biodiversity Conservation Act 2016.*
- Listing reference in a table: column heading: BC Act, row text: VU.

Extinct species

Listed by order of the Minister as extinct under section 23(1) of the BC Act as extinct or extinct in the wild.

EX Extinct species

Species where "*there is no reasonable doubt that the last member of the species has died*", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Examples of use:

- *Acacia kingiana* is listed as an extinct species under the *Biodiversity Conservation Act 2016.*
- *Acacia kingiana* is listed as extinct under the *Biodiversity Conservation Act 2016.*
- Listing reference in a table: column heading: BC Act, row text: EX.

EW Extinct in the wild species

Species that *"is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no fauna or flora species listed as extinct in the wild.

SP Specially protected species

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered, or vulnerable) or extinct species under the BC Act cannot also be listed as specially protected species.

MI Migratory species

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Migratory species include birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA)[4], China (CAMBA)[5] or The Republic of Korea (ROKAMBA)[6], and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention)[7], an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Examples of use:

- The wedge-tailed shearwater (*Ardenna pacifica*) is listed as a specially protected migratory species under the *Biodiversity Conservation Act 2016.*
- Wedge-tailed shearwater is listed as migratory under the *Biodiversity Conservation Act 2016.*
- Listing reference in a table: column heading: BC Act, row text: MI.

CD **Species of special conservation interest (conservation dependent)**

Species of special conservation need that are dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Currently only fauna are listed as species of special conservation interest.

Examples of use:

- The wambenger, south-western brush-tailed phascogale (*Phascogale tapoatafa wambenger*) is listed as a specially protected species of special conservation interest under the *Biodiversity Conservation Act 2016.*
- Wambenger, south-western brush-tailed phascogale, is listed as conservation dependent under the *Biodiversity Conservation Act 2016.*
- Listing reference in a table: column heading: BC Act, row text: CD.

OS **Species otherwise in need of special protection (other specially protected)**

Species otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Currently only fauna are listed as species otherwise in need of special protection.

Examples of use:

- The dugong (*Dugong dugon*) is listed as a specially protected species otherwise in need of special protection under the *Biodiversity Conservation Act 2016.*
- Dugon is listed as other specially protected fauna under the *Biodiversity Conservation Act 2016.*
- Listing reference in a table: column heading: BC Act, row text: OS.

P **Priority species**

Priority is not a listing category under the BC Act. The Priority Flora and Fauna lists are maintained by the department and are published on the department's website.

All fauna and flora are protected in WA following the provisions in Part 10 of the BC Act. The protection applies even when a species is not listed as threatened or specially protected, and regardless of land tenure (State managed land (Crown land), private land, or Commonwealth land).

Species that may possibly be threatened species that do not meet the criteria for listing under the BC Act because of insufficient survey or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of prioritisation for survey and evaluation of conservation status so that consideration can be given to potential listing as threatened.

Species that are adequately known, meet criteria for near threatened, or are rare but not threatened, or that have been recently removed from the threatened species list or conservation dependent or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of priority status is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

1 **Priority 1: Poorly-known species - known from few locations, none on conservation lands**

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, for example, agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation.

Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements for threatened listing and appear to be under immediate threat from known threatening processes. These species are in urgent need of further survey.

Examples of use:

- *Borya stenophylla* is listed as a Priority 1 species by the Department of Biodiversity, Conservation and Attractions.
- *Borya stenophylla* is listed as Priority 1 on the DBCA Priority Flora List.
- Listing reference in a table: column heading: DBCA, row text: P1.

2 Priority 2: Poorly-known species - known from few locations, some on conservation lands

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, for example, national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation.

Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements for threatened listing and appear to be under threat from known threatening processes. These species are in urgent need of further survey.

Examples of use:

- *Caladenia nivalis* is listed as a Priority 2 species by the Department of Biodiversity, Conservation and Attractions.
- *Caladenia nivalis* is listed as Priority 2 on the DBCA Priority Flora List.
- Listing reference in a table: column heading: DBCA, row text: P2.

3 Priority 3: Poorly-known species - known from several locations

Species that are known from several locations and the species does not appear to be under imminent threat or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat.

Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. These species need further survey.

Examples of use:

- *Acacia nitidula* is listed as a Priority 3 species by the Department of Biodiversity, Conservation and Attractions.
- *Acacia nitidula* is listed as Priority 3 on the DBCA Priority Flora List.
- Listing reference in a table: column heading: DBCA, row text: P3.

4 Priority 4: Rare, Near Threatened and other species in need of monitoring

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as a conservation dependent specially protected species.

(c) Species that have been removed from the list of threatened species or lists of conservation dependent or other specially protected species, during the past five years for reasons other than taxonomy.

(d) Other species in need of monitoring.

Examples of use:

- *Banksia aculeata* is listed as a Priority 4 species by the Department of Biodiversity, Conservation and Attractions.
- *Banksia aculeata* is listed as Priority 4 on the DBCA Priority Flora List.
- Listing reference in a table: column heading: DBCA, row text: P4.

[1] The definition of flora includes algae, fungi, and lichens.

[2] Species includes all taxa (plural of taxon - a classificatory group of any taxonomic rank, e.g. a family, genus, species or any infraspecific category i.e. subspecies or variety, or a distinct population).

[3] Western Australia has assigned species to threat categories using the *IUCN Red List of Threatened Species Categories and Criteria* since 1996 (referencing all criteria).

[4] JAMBA - first included in the WA migratory species list in 1980.

[5] CAMBA - first included in the WA migratory species list in 2010.

[6] ROKAMBA - first included in the WA migratory species list in 2010.

[7] Bonn Convention (Birds) - first included in the WA migratory species list in 2015.

Appendix 2 Database Search Results

Family	Species Name	Common Name	State Listing[1]	Federal Listing[1]	Database Searches							Previous Surveys							
					ALA	DBCA Significant Species Database	EPBC PMST	Dandjoo	eBIRD	Previous BHP Records	Previous Biota Records	Spectrum 2026	Spectrum 2024	Astron 2025	Astron 2023	GHD 2021a	GHD 2021b	Biologic 2018	Biologic 2017
Birds																			
Apodidae	*Apus pacificus*	Fork-tailed Swift	MI	MI	•	•		•		•									
Charadriidae	*Anarhynchus veredus*	Oriental Plover	MI	MI		•		•											
Rostratulidae	*Rostratula australis*	Australian Painted-snipe	EN	EN			•												
Scolopacidae	*Actitis hypoleucos*	Common Sandpiper	MI	MI	•	•			•						•				
Scolopacidae	*Tringa glareola*	Wood Sandpiper	MI	MI	•			•	•	•									
Scolopacidae	*Tringa nebularia*	Common Greenshank	MI	EN; MI		•		•		•									
Scolopacidae	*Calidris acuminata*	Sharp-tailed Sandpiper	MI	VU; MI			•												
Scolopacidae	*Calidris ferruginea*	Curlew Sandpiper	CR	CR; MI[2]			•												
Scolopacidae	*Calidris ruficollis*	Red-necked Stint	MI	MI	•														
Laridae	*Onychoprion anaethetus*	Bridled Tern	MI	MI	•				•										
Laridae	*Gelochelidon* [*nilotica*] *macrotarsa*	Australian [Gull-billed] Tern[3]	MI	MI		•		•		•									
Laridae	*Hydroprogne caspia*	Caspian Tern	MI	MI		•		•											
Procellariidae	*Macronectes giganteus*	Southern Giant Petrel	MI	EN; MI		•		•											
Pandionidae	*Pandion haliaetus*	Eastern Osprey	MI	MI		•		•		•									
Accipitridae	*Elanus scriptus*	Letter-winged Kite	P4			•													
Accipitridae	*Erythrotriorchis radiatus*	Red Goshawk	CR	EN			•												
Falconidae	*Falco hypoleucos*	Grey Falcon	VU	VU		•	•	•		•									
Falconidae	*Falco peregrinus*	Peregrine Falcon	OS		•	•		•	•	•								•	
Psittaculidae	*Polytelis alexandrae*	Princess Parrot	P4	VU			•												
Psittaculidae	*Pezoporus occidentalis*	Night Parrot	CR	CR		•	•												
Acanthizidae	*Aphelocephala leucopsis*	Southern Whiteface	VU	VU	•		•	•											
Mammals																			
Dasyuridae	*Dasycercus blythi*	Brush-tailed Mulgara, Ampurta[4]	P4			•		•		•									
Dasyuridae	*Dasyurus hallucatus*	Northern Quoll	EN	EN		•	•	•		•				•					
Thylacomyidae	*Macrotis lagotis*	Greater Bilby	VU	VU		•	•	•		•									
Phalangeridae	*Trichosurus vulpecula* subsp. *arnhemensis*	Northern Brushtail Possum	VU	VU						•									
Macropodidae	*Petrogale lateralis* subsp. *lateralis*	Black-footed Rock-wallaby	EN	EN				•											
Muridae	*Pseudomys chapmani*	Western Pebble-mound Mouse	P4			•		•		•	•	•	•	•	•	•	•	•	•
Rhinonycteridae	*Rhinonicteris aurantia*	Pilbara Leaf-nosed Bat	VU	VU	•	•	•	•		•									
Megadermatidae	*Macroderma gigas*	Ghost Bat	VU	VU	•	•	•	•		•				•		•	•		

Family	Species Name	Common Name	State Listing[1]	Federal Listing[1]	Database Searches							Previous Surveys							
					ALA	DBCA Significant Species Database	EPBC PMST	Dandjoo	eBIRD	Previous BHP Records	Previous Biota Records	Spectrum 2026	Spectrum 2024	Astron 2025	Astron 2023	GHD 2021a	GHD 2021b	Biologic 2018	Biologic 2017
Reptiles																			
Carphodactylidae	*Underwoodisaurus seorsus*	Pilbara Barking Gecko[5]	P2			•		•		•									
Diplodactylidae	*Diplodactylus fulleri*		P1					•											
Agamidae	*Pogona minor minima*	Dwarf Bearded Dragon	VU					•											
Scincidae	*Ctenotus uber* subsp. *johnstonei*		P2					•											
Scincidae	*Lerista macropisthopus* subsp. *remota*		P2			•		•											
Scincidae	*Liopholis kintorei*	Great Desert Skink	VU	VU			•												
Typhlopidae	*Anilios ganei*[6]	Pilbara Flat-headed Blind-snake	P1			•		•		•						•			
Pythonidae	*Liasis olivaceus* subsp. *barroni*	Pilbara Olive Python	VU	VU		•	•	•		•	•			•		•			

[1] Significant listing categories: CR: Critically Endangered; EN: Endangered; VU: Vulnerable; MI: Migratory; OS: Other Specially Protected; P1: DBCA Priority 1; P2: DBCA Priority 2; P4: DBCA Priority 4

[2] BC Act Migratory listing repealed in 2022 as also listed as threatened, but still satisfies all other criteria for Migratory listing

[3] Australian Tern not migratory, but due to taxonomic situation, still should be treated as Migratory, listed as *G. nilotica*

[4] Split from Crest-tailed Mulgara (*Dasycercus cristicauda*), historical records may be listed as *cristicauda*

[5] Previously included within *Underwoodisaurus milii*

[6] Previously included in genus *Ramphotyphlops*

Appendix 3 Fauna Likelihood Assessment

Family	Species Name	Common Name	State Listing[1]	Federal Listing[1]	Preferred Habitat	Habitat Available?			Desktop Records	Likelihood of Occurrence		
						West	Central	East		West	Central	East
Birds												
Apodidae	*Apus pacificus*	Fork-tailed Swift	MI	MI	Exclusively aerial in Australia, over most habitats. Largest numbers usually over coastal and near coastal plains.	Yes	Yes	Yes	26 records in dataset scattered across the locality from 2006-2014. Closest record is approximately 16 km away.	High (foraging)	High (foraging)	High (foraging)
Charadriidae	*Anarhynchus veredus*	Oriental Plover	MI	MI	Open plains, bare, rolling country, muddy or sandy wastes near inland swamps or intertidal mudflats; bare claypans, margins of coastal marshes; grassy airfields, sportsfields, lawns and coastal dune areas.	No	No	No	One record in dataset from 2019, approximately 40 km southwest of Survey Area.	Low	Low	Low
Rostratulidae	*Rostratula australis*	Australian Painted-snipe	EN	EN	Shallow vegetated ephemeral wetlands. Less commonly saltmarsh, claypans, sewage farms, dams, bores and irrigation channels.	No	No	Limited	EPBC MNES tool states this species MAY occur in the locality. No records within Study Area.	Would not occur	Would not occur	Low
Scolopacidae	*Actitis hypoleucos*	Common Sandpiper	MI	MI	Margins of coastal and inland wetlands, including mangroves/mangrove creeks, rocky shorelines, river banks, sewage ponds, but less often intertidal flats.	No	No	No	10 records in the locality from 2022, from a single location approximately 15 km west of the Survey Area.	Low	Low	Low
Scolopacidae	*Tringa glareola*	Wood Sandpiper	MI	MI	Shallow freshwater wetlands and wetland margins, particularly ones with taller fringing vegetation, including sewage ponds.	No	No	Limited	3 records in the locality from 2009-2011, closest is 35 km from the Survey Area.	Would not occur	Would not occur	Low
Scolopacidae	*Tringa nebularia*	Common Greenshank	MI	EN; MI	Inhabits a variety of coastal and freshwater habitats, intertidal flats and adjacent sandy beaches, mangrove fringes, shallow freshwater wetlands and wetland margins, salt ponds, less commonly on sandy beaches.	No	No	Limited	Four records in the locality from 2009-2011 from approximately 18 km west of the Survey Area.	Would not occur	Would not occur	Low
Scolopacidae	*Calidris acuminata*	Sharp-tailed Sandpiper	MI	VU; MI	Shallows and margins of coastal and inland wetlands, preferring freshwater, less commonly coastal and estuarine intertidal mudflats.	No	No	Limited	EPBC MNES tool states this species MAY occur in the locality. No records within Study Area.	Would not occur	Would not occur	Low
Scolopacidae	*Calidris ferruginea*	Curlew Sandpiper	CR	CR; MI	Coastal and estuarine intertidal flats and adjacent sandy beaches and rocky shorelines, shallow fresh and saline wetlands including sewage ponds and salt ponds.	No	No	Limited	EPBC MNES tool states this species MAY occur in the locality. No records within Study Area.	Would not occur	Would not occur	Low
Scolopacidae	*Calidris ruficollis*	Red-necked Stint	MI	MI	Variety of wetland habitats including coastal and estuarine intertidal flats, adjacent sandy beaches and rocky coasts, muddy fringes of freshwater wetlands, sewage ponds, salt ponds.	No	No	Limited	1 record returned from Atlas of Living Australia without spatial information.	Would not occur	Would not occur	Low
Laridae	*Onychoprion anaethetus*	Bridled Tern	MI	MI	Warm coastal and offshore waters, breeding on offshore and near-coastal islands and rock stacks.	No	No	No	1 previous record within the Study Area - a cyclone-blown individual observed in 2011.	Would not occur	Would not occur	Would not occur

Family	Species Name	Common Name	State Listing[1]	Federal Listing[1]	Preferred Habitat	Habitat Available?			Desktop Records	Likelihood of Occurrence		
						West	Central	East		West	Central	East
Laridae	*Gelochelidon* [*nilotica*] *macrotarsa*	Australian [Gull-billed] Tern[3]	MI	MI	Coasts and estuaries, particularly in vicinity of intertidal flats, inland wetlands, grasslands and open country (sometimes far from water). Breeding primarily on large ephemeral wetlands inland.	Yes	Yes	Yes	2 records in locality from 2012, 34 km north of the Survey Area.	Moderate	Moderate	Moderate
Laridae	*Hydroprogne caspia*	Caspian Tern	MI	MI	Sheltered coastal waters, estuaries, and larger inland water bodies (including larger rivers, reservoirs, fresh and salt lakes, salt ponds).	No	No	No	2 records in locality from 2022, 38 km southeast of the Survey Area.	Would not occur	Would not occur	Would not occur
Procellariidae	*Macronectes giganteus*	Southern Giant Petrel	MI	EN; MI	Pelagic seas over continental shelf, shelf-edge and further offshore.	No	No	No	3 records in the locality from 2011, from 13 km southeast of the Survey Area. Cyclone-blown.	Would not occur	Would not occur	Would not occur
Pandionidae	*Pandion haliaetus*	Eastern Osprey	MI	MI	Estuaries, coasts and offshore islands, less commonly large inland wetlands.	No	No	Limited	10 records in the locality from 2008-2012, the closest approximately 13 km southeast of the Survey Area, and most confined to large gorges and river systems.	Would not occur	Would not occur	Low
Accipitridae	*Elanus scriptus*	Letter-winged Kite	P4		Arid and semi-arid grasslands, open country and timbered watercourses, roosting and breeding in trees. Irruptive, and after good seasons wandering individuals may appear far from their core range in a wider range of habitats.	No	No	No	1 record in the locality from 2018, from 40 km southwest of the Survey Area.	Would not occur	Would not occur	Would not occur
Accipitridae	*Erythrotriorchis radiatus*	Red Goshawk	VU	EN	Tall open forest and woodland, especially along watercourses with tall eucalypts and melaleucas, potentially occupying wider range of habitats post-breeding.	No	No	No	EPBC MNES tool states this species MAY occur in the locality. No records within Study Area.	Would not occur	Would not occur	Would not occur
Falconidae	*Falco hypoleucos*	Grey Falcon	VU	VU	Lightly wooded or un-timbered arid plains, especially those that are crossed by major watercourses lined with taller trees, or isolated man-made structures such as communications towers.	Yes	Yes	Yes	8 records from the locality, from 2008-2025. The closest is approximately 27 km north of the Survey Area.	Moderate (foraging)	Moderate (foraging)	Moderate (foraging)
Falconidae	*Falco peregrinus*	Peregrine Falcon	OS		Most habitats, favouring areas with concentrations of bird prey (e.g. wetlands, coastal cliffs with seabird colonies, cities with large numbers of feral pigeons). Cliffs faces preferred for breeding, but also in trees (using old stick nests of other species or tree hollows) where cliffs are in short supply.	Limited	Limited	Limited	53 records scattered throughout the locality, from 2003 - 2025. The closest is 4 km west of the Survey Area.	High (foraging)	High (foraging)	High (foraging)
Psittaculidae	*Polytelis alexandrae*	Princess Parrot	P4	VU	Desert sand dune country with scattered trees (particularly marble gums and desert oak) and good ground cover of shrubs and spinifex (*Triodia*).	No	No	No	EPBC MNES tool states this species LIKELY occurs in the locality. However, this species typically occurs in sand dune deserts of central Australia and there are no records within Study Area.	Would not occur	Would not occur	Would not occur

Family	Species Name	Common Name	State Listing[1]	Federal Listing[1]	Preferred Habitat	Habitat Available?			Desktop Records	Likelihood of Occurrence		
						West	Central	East		West	Central	East
Psittaculidae	*Pezoporus occidentalis*	Night Parrot	CR	EN	Arid or semi-arid spinifex grasslands with patches of large, established and unburnt hummocks, usually in association with palaeodrainage/drainage areas, salt lakes or rocky breakaways. Foraging habitat includes high productivity grassland areas, and shrublands of samphire, bluebush and saltbush.	No	No	No	1 record from the locality from 2003, from approximately 26 km northeast of the Survey Area.	Low	Low	Low
Acanthizidae	*Aphelocephala leucopsis*	Southern Whiteface	VU	VU	Arid shrublands, open woodlands with a shrubby or grassy understory, grass plains.	No	No	No	1 record returned from Atlas of Living Australia without spatial information. The species is not expected to occur in the Pilbara.	Would not occur	Would not occur	Would not occur
Mammals												
Dasyuridae	*Dasycercus blythi*	Brush-tailed Mulgara, Ampurta[4]	P4		Spinifex (*Triodia* spp.) grasslands on sandplains and sandy swales	No	No	No	74 records in the locality from 2014 to 2024. Nearest group of records approximately 14 km east of the Survey Area.	Low	Low	Low
Dasyuridae	*Dasyurus hallucatus*	Northern Quoll	EN	EN	Pilbara: Rocky habitats, commonly utilising gorges, breakaways, outcrops and hills. Also occurs near creek lines and drainage lines.	Yes	Yes	Yes	534 records returned within the locality, from 2010 to 2024. Most records are grouped approximately 25 km north of the Survey Area, but there is a record within 350 m of the Survey Area and a further 6 records within 20 km of the Survey Area.	High	High	High
Thylacomyidae	*Macrotis lagotis*	Greater Bilby	VU	VU	In WA, primarily Acacia shrubland and spinifex (*Triodia* spp.) grassland on sand plains, dunes and along drainage lines. Formerly occupied wider range of habitats.	No	No	Limited	8 records in the locality from 2013-2024; nearest is 25 km east of the Survey Area.	Low	Low	Low
Phalangeridae	*Trichosurus vulpecula* subsp. *arnhemensis*	Northern Brushtail Possum	VU	VU	Tall eucalypt forests, mangroves and rainforests, esp. where there are large eucalypts and a well-developed understorey.	No	No	No	1 record in the locality from the BHP database, located approximately 39 km southwest of the Survey Area.	Would not occur	Would not occur	Would not occur
Macropodidae	*Petrogale lateralis* subsp. *lateralis*	Black-footed Rock-wallaby	EN	EN	Rocky hills, outcrops and breakaways with caves and crevices for shelter, foraging on surrounding flats vegetation that includes grasses & herbs.	Limited	Limited	Limited	The Dandjoo search returned presence within the locality, no spatial information available. This species is considered unlikely to occur in the area.	Low	Low	Low
Muridae	*Pseudomys chapmani*	Western Pebble-mound Mouse	P4		Stony hillslopes and plateaux vegetated with spinifex (*Triodia* spp.).	Yes	Yes	Yes	2647 records returned in the locality from 1980 to 2025, including several within or directly surrounding the Survey Area.	Recorded (this survey)	Recorded (this survey)	Recorded (historical record)

Family	Species Name	Common Name	State Listing[1]	Federal Listing[1]	Preferred Habitat	Habitat Available?			Desktop Records	Likelihood of Occurrence		
						West	Central	East		West	Central	East
Rhinonycteridae	*Rhinonicteris aurantia*	Pilbara Leaf-nosed Bat	VU	VU	Occurrence influenced by the availability of suitable roost caves that offer high humidity and a stable temperature. Restricted to caves with semi-permanent or permanent water nearby, usually in rocky habitat. Foraging typically occurs over open grasslands in gorges, low hills and plains.	Roosting: No Foraging: Limited	Roosting: No Foraging: Limited	Roosting: No Foraging: Yes	1440 records returned from the locality from 2006 to 2024. Most records are approximately 25-35 km northeast of the Survey Area within the Hamersley Ranges, with scattered records throughout the rest of the locality. The nearest record is 15 km north of the Survey Area.	Moderate	Moderate	Moderate
Megadermatidae	*Macroderma gigas*	Ghost Bat	VU	VU	Roost in caves, rock crevices and old mines, foraging in wide variety of habitats with distribution influenced by the availability of suitable caves for roost sites.	Roosting: No Foraging: Limited	Roosting: No Foraging: Limited	Roosting: No Foraging: Yes	536 records returned from throughout the locality, from 2001 to 2025. The nearest record is approximately 3 km southwest of the Survey Area, with several groups of records within 20 km of the Survey Area.	Moderate	Moderate	High (foraging)
Reptiles												
Carphodactylidae	*Underwoodisaurus seorsus*	Pilbara Barking Gecko[5]	P2		Rocky hills and gorges with spinifex (*Triodia* spp.) and sparse tree cover.	Yes	Limited	Limited	20 records returned from the locality, from 2004 to 2013. The nearest record is 24 km south of the Survey Area.	Moderate	Low	Low
Diplodactylidae	*Diplodactylus fulleri*		P1		Low samphire and open sandplains surrounding Kumpupintil Lake (Lake Disappointment).	No	No	No	Presence was returned from the Dandjoo search. However, this species is not known to exist in the Pilbara.	Would not occur	Would not occur	Would not occur
Agamidae	*Pogona minor minima*	Dwarf Bearded Dragon	VU		Low shrublands on offshore islands.	No	No	No	Presence was returned from the Dandjoo search. However, this subspecies is not known to exist in the Pilbara.	Would not occur	Would not occur	Would not occur
Scincidae	*Ctenotus uber* subsp. *johnstonei*		P2		Chenopod shrubland at base of sandstone hill. Morphologically similar animals from Pilbara occur in primarily acacia shrubland (esp. *A. xiphophylla*).	No	No	No	Presence was returned from the Dandjoo search. However, this subspecies is not known to exist in the Pilbara.	Would not occur	Would not occur	Would not occur
Scincidae	*Lerista macropisthopus* subsp. *remota*		P2		Arid and semi-arid acacia woodland and shrubland.	No	No	No	5 records returned in the locality, from 2012 to 2019. The nearest record is 32 km southwest of the Survey Area.	Low	Low	Low
Scincidae	*Liopholis kintorei*	Great Desert Skink	VU	VU	Spinifex (*Triodia* spp.) on arid sandy, clay or loamy flats.	No	No	No	EPBC MNES tool states this species MAY occur in the locality. However, this species typically occurs in the sandy deserts of central Australia and there are no records within Study Area.	Would not occur	Would not occur	Would not occur
Typhlopidae	*Anilios ganei*[6]	Pilbara Flat-headed Blind-snake	P1		Poorly known but records from moist gorges/gullies, mulga woodland and rocky screes.	Limited	Limited	Limited	15 records returned from throughout the locality, from 1999 to 2011. The closest record is approximately 15 km southwest of the Survey Area.	Moderate	Moderate	Moderate

Family	Species Name	Common Name	State Listing[1]	Federal Listing[1]	Preferred Habitat	Habitat Available?			Desktop Records	Likelihood of Occurrence		
						West	Central	East		West	Central	East
Pythonidae	*Liasis olivaceus* subsp. *barroni*	Pilbara Olive Python	VU	VU	Most commonly encountered in habitats with ready access to shelter and freshwater, such as gorges, rockpiles, springs and vegetated watercourses - but will travel long distances and use a variety of other habitats in passing, both natural and artificial. Regularly shelters beneath boulders on dry escarpments, hills and creeklines.	Limited	Limited	Yes	68 records returned from the locality, from 1962 to 2026 (most after 2010). Three records are very near (75 to 500 m) to the Survey Area, with several others within 10 km.	Moderate	Moderate	High

[1] Significant listing categories: CR: Critically Endangered; EN: Endangered; VU: Vulnerable; MI: Migratory; OS: Other Specially Protected; P1: DBCA Priority 1; P2: DBCA Priority 2; P4: DBCA Priority 4

[2] BC Act Migratory listing repealed in 2022 as also listed as threatened, but still satisfies all other criteria for Migratory listing

[3] Australian Tern not migratory, but due to taxonomic situation, still should be treated as Migratory, listed as *G. nilotica*

[4] Split from Crest-tailed Mulgara (*Dasycercus cristicauda*), historical records may be listed as *cristicauda*

[5] Previously included within *Underwoodisaurus milii*

[6] Previously included in genus *Ramphotyphlops*