



Tabba Tabba Project: Subterranean
Fauna Desktop Assessment and Baseline
Survey

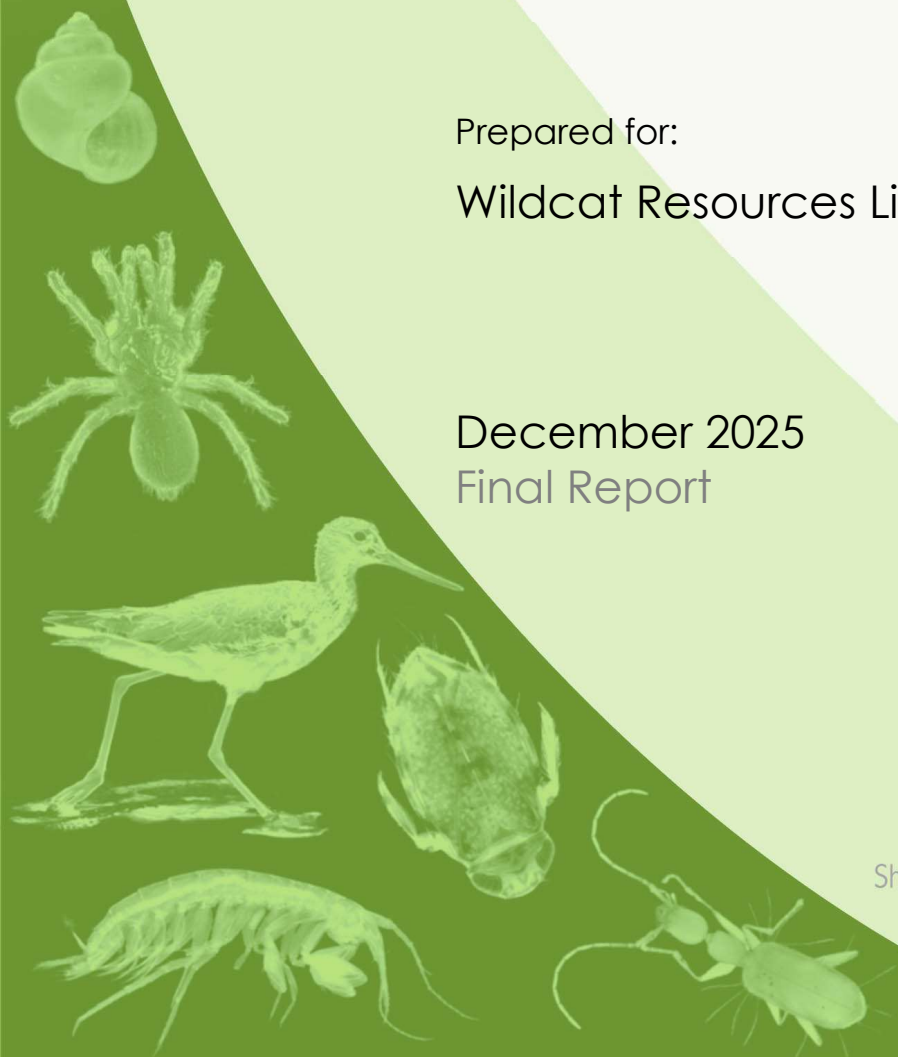
Prepared for:

Wildcat Resources Limited

December 2025
Final Report

Short-Range Endemics | Subterranean Fauna

Waterbirds | Wetlands



Tabba Tabba Project: Subterranean Fauna Desktop Assessment and Baseline Survey

Bennelongia Pty Ltd
5 Bishop Street
Jolimont WA 6014

P: (08) 9285 8722
F: (08) 9285 8811
E: info@bennelongia.com.au

ABN: 55 124 110 167

Report Number: 724

Report Version	Prepared by	Reviewed by	Submitted to Client	
			Method	Date
Draft	Ash Browse Jaxon Haines	Vitor C. Marques	email	07 October 2025
Final	Jaxon Haines			08 December 2025

K:\Projects\B_RPM_08\8_Report

This document has been prepared to the requirements of the Client and is for the use by the Client, its agents, and Bennelongia Environmental Consultants. Copyright and any other Intellectual Property associated with the document belongs to Bennelongia Environmental Consultants and may not be reproduced without written permission of the Client or Bennelongia. No liability or responsibility is accepted in respect of any use by a third party or for purposes other than for which the document was commissioned. Bennelongia has not attempted to verify the accuracy and completeness of information supplied by the Client. © Copyright 2020 Bennelongia Pty Ltd.

EXECUTIVE SUMMARY

Wildcat Resources Limited (Wildcat) is proposing to develop the Tabba Tabba Project (the Project) located in the central Pilbara, approximately 50 km southeast of Port Hedland. The Project is at an advanced stage of exploration, with a pre-feasibility study in progress. The Project includes a single open cut pit to be mined over 11 years, a water supply borefield, waste rock dump, tailings dam and other supporting infrastructure.

Bennelongia Environmental Consultants (Bennelongia) were engaged to conduct a desktop assessment and baseline survey to assess the occurrence of subterranean fauna species, habitat suitability and any conservation significant species within and near the Project. The Project was reviewed to determine the key potential threats to subterranean fauna and an assessment of whether any species are likely to be impacted by the Project was made according to relevant guidelines for subterranean fauna assessment.

The Project is located in the central Pilbara region, an arid landscape dominated by alluvial plains, rocky outcrops, and ephemeral watercourses feeding into regional drainage systems. It lies along the Tabba Tabba shear zone, featuring diverse and highly weathered geological formations, including chert, banded iron formations, serpentinite, and granites. Surface and subsurface geologies show varying degrees of consolidation, fracturing, and cementing, with depths of weathering reaching up to 80 mbgl. Suitable habitats for subterranean fauna include fractured and weathered bedrock, cavernous calcrete, and small patches of weakly metamorphosed banded iron formations, which may support highly restricted species. In contrast, shallow alluvial and colluvial soils (to ~2 mbgl) and heavily consolidated or cemented geologies are considered unsuitable due to limited depth and connectivity. Two geological formations along the Tabba Tabba shear zone — the Cleaverville banded iron-formation and the Kangaroo Caves formation — are likely to host groundwater, primarily within weathered and fractured lithological contact zones to depths of around 80 mbgl. Although fault zones typically support fractured rock aquifers, this area has limited interconnected water-bearing fractures.

Desktop survey results indicated a highly diverse regional troglofauna and stygofauna community within the broader search area. At least 72 unique troglofauna species have been recorded, with species-rich zones in both the northern and southern regions, though records near the Project area are sparse. Only one troglofauna species, **Dalodesmidae BDI085**, has been documented within the Project boundary, this species is known solely from two juvenile specimens collected within the proposed pit boundary by Rockwater in 2024. In contrast, stygofauna are more evenly distributed, with 218 unique species recorded across the search area. Within the Project Survey Area, 11 stygofauna species have been identified, including one potentially restricted isopod species, **Coxicerberus sp. B06**, found only within the proposed pit boundary. The remaining species are either widespread or identified to higher taxonomic levels.

The field survey collected 401 specimens across 17 sites, predominantly stygofauna, with only one troglofauna specimen recorded. Twelve subterranean fauna species were identified from six major groups: copepods (4 species), oligochaetes (2), syncarids (1), amphipods (2), ostracods (2), and pseudoscorpions (1). Most species are widespread in the Pilbara region, but **three species are known only from a limited range around the Survey Area:**

- Stygofauna:
 - **Billibathynella BSY418** (syncarid): Found only within 500 m of the proposed pit boundary from three records.
 - **Areacandona BOS365** (ostracod): Known from a single valve at one site, with a very limited range (<10 km) from only two records.
- Troglofauna:

-
- ***Tyrannochthonius* BPS619** (pseudoscorpion): The only troglifauna specimen, collected outside the proposed pit area, a singleton from Bore: TARC395D. This is the first known record of this species.

In the absence of a predicted groundwater drawdown model, it is difficult to quantify the potential impacts to the stygofauna assemblage. However, given that all the stygofauna specimens were collected within ~1.2 kms of the predicted pit boundaries, it is likely that groundwater drawdown will impact the locations in which they were collected. Based on the desktop results and the local geology, the connectivity of the habitats is high enough that the distributions of the species restricted to the survey will likely extend to less impacted areas. Due to current data limitations, exact species distributions cannot be determined.

Due to current data limitations, exact species distributions cannot be determined, however based on known records, an estimated linear distribution was calculated for each species collected. Any further survey that may be undertaken should be targeted towards building knowledge on the distributions of these species:

- *Areacandona* `BOS365` (<1 km distribution)
- *Billibathynella* `BSY418` (1.4 km distribution)
- *Coxicerberus* sp. B06 (<1 km distribution)
- *Tyrannochthonius* `BPS619` (One survey record, Bore: TARC395D)
- Dalodesmidae `BDI085` (One desktop record, Bore: TARC135)

It is also recommended that the groundwater impact is modelled to assist with future impact assessments.

CONTENTS

Executive Summary	ii
1. Introduction	1
1.1. Subterranean Fauna Framework	1
1.1.1. Subterranean Fauna	1
1.1.2. Habitat Requirements.....	1
1.2. Potential Impacts	2
1.3. Conservation Legislation.....	4
2. Desktop Assessment.....	4
2.1. Methods	4
2.2. Results	4
2.2.1. Geology.....	4
2.2.2. Hydrogeology	5
2.2.3. Threatened Species, TECs and PECs	9
2.2.4. Troglofauna Records	9
2.2.5. Stygofauna Records.....	9
3. Field Survey	10
3.1. Methods	10
3.2. Limitations.....	10
3.2.1. Laboratory Analysis.....	13
3.3. Personnel.....	13
3.4. Survey Results.....	14
3.4.1. Species Accounts	14
4. Conclusion.....	15
5. References.....	19
Appendices.....	21
Appendix 1. Troglofauna desktop records in the search area	21
Appendix 2. Stygofauna desktop records in the search area	24
Appendix 3. Troglofauna sites sampled	31
Appendix 4: Stygofauna sites sampled and water chemistry results.....	32
Appendix 5: Map of all sites sampled during May 2025 Survey	33

LIST OF FIGURES

Figure 1. Project location and desktop search area	3
Figure 2. Surface geology of the Project area	6
Figure 3. Bedrock geology of the Project area	8
Figure 4. Troglofauna Records in Desktop Search Area	11
Figure 5. Stygofauna Records in Desktop Search Area.....	12
Figure 6: Subterranean fauna species collected in the survey, and significant desktop records	18

LIST OF TABLES

Table 1. Description of surface geology codes presented in Figure 2.	7
---	---

Table 2. Description of bedrock geology presented in Figure 3.....	9
Table 3: Personnel involved in the Tabba Tabba subfauna survey	13
Table 4: Subterranean fauna records from the survey, and significant desktop records.....	16

1. INTRODUCTION

Wildcat Resources Limited (Wildcat) is proposing to develop the Tabba Tabba Project (the Project) located in the central Pilbara, approximately 50 km southeast of Port Hedland (Figure 1). The Project is at an advanced stage of exploration, with a pre-feasibility study in progress. The Project includes a single open cut pit to be mined over 11 years, a water supply borefield, waste rock dump, tailings dam and other supporting infrastructure. Wildcat plans to extract up to 1.87 GL/a of groundwater from a new and existing borefield, and pit dewatering.

Bennelongia Environmental Consultants (Bennelongia) were engaged to conduct a desktop assessment and baseline survey to assess the occurrence of subterranean fauna species, habitat suitability and any conservation significant species within and near the Project. Information on proposed developments was reviewed to determine the key potential threats to subterranean fauna and an assessment of whether any species are likely to be impacted by the proposed developments was made according to relevant guidelines for subterranean fauna assessment (EPA 2021). The likelihood of subterranean fauna occurrence, the survey outcome and the key threats were considered together to determine the significance of any potential impacts on subterranean fauna. This report documents the methods and results of the desktop review and subsequent field survey.

1.1. Subterranean Fauna Framework

1.1.1. Subterranean Fauna

Subterranean species occur underground across much of Western Australia. They include two distinct animal communities: aquatic stygofauna in groundwater and air-breathing troglifauna in the vadose zone between the surface and the water table. Springs and riverbeds with close surface connections are unlikely to contain such fauna. Due to relatively uniform selection pressures in underground habitats, true subterranean fauna typically exhibit many convergent morphological and physiological characteristics, such as reduced or absent eyes, loss of body pigmentation, loss of wings, elongate sensory structures, a shift towards K-selection breeding strategy meaning fewer offspring, and decreased rates of metabolism (Gibert and Deharveng 2002). The overwhelming majority of subterranean species in Western Australia are invertebrates, although a few species of stygofaunal fish and troglifaunal reptiles have been recorded (e.g. Aplin 1998; Whitley 1974). While some subterranean species are obligate inhabitants of groundwater (stygobites) or the deep unsaturated zone above the water table (troglobites), others may use the surface for a proportion of their life cycle (stygophiles and trogliphiles). Species that utilise surface habitats at some stage usually have larger distributions than fully subterranean species because of greater dispersal opportunities, whereas species ranges of true subterranean fauna are usually defined by subsurface geology or geomorphological barriers.

Although inconspicuous, subterranean fauna contributes markedly to the overall biodiversity of Australia. It is estimated that 4,500 or more subterranean species occur in the Pilbara and Yilgarn regions (Guzik *et al.* 2010; Halse 2018a), the majority of which remain undescribed. Many stygofauna species are short range endemics (SREs), with much smaller ranges than Harvey's SRE range criterion of 10,000 km² primarily set for surface fauna (Eberhard *et al.* 2009; Halse and Pearson 2014; Harvey 2002). Given that species with small ranges are more vulnerable to extinction following habitat degradation than wider ranging species (Ponder and Colgan 2002), it follows that subterranean taxa are highly susceptible to anthropogenic threats, particularly large-scale excavation and groundwater abstraction.

1.1.2. Habitat Requirements

The presence, richness and distribution of subterranean fauna within a region is closely related to lithology, geology and hydrogeology (Eberhard *et al.* 2005; Hose *et al.* 2015). Geologies with many subterranean spaces (e.g. interstices in alluvium and scree, and voids, vugs, cavities, and fissures in consolidated geologies) support richer and more abundant assemblages of subterranean fauna than 'fresh,' unmodified, or unweathered rock geologies. Both the vertical and lateral connectivity of

subterranean spaces are factors in determining the distribution of subterranean fauna. Vertical connectivity to the surface is important for supplying carbon and nutrients into the vadose zone and then into underlying aquifers, as well as the recharge of aquifers by rainfall (Korbel and Hose 2011). Lateral connectivity enables underground dispersal, allowing animals to move about and interact in viable-sized species populations. Geological features such as dykes may act as barriers to dispersal of subterranean fauna and lead to species having highly restricted ranges, while chemistry (especially dissolved calcium and carbonate) affects the occurrence of many species.

Troglofauna Habitat

Troglofauna species are outcompeted by surface soil species in the uppermost soil layers but become dominant at depth, provided relative humidity and oxygen levels are high, and nutrients are present (Halse 2018b; Howarth 1983). Important habitats for troglofauna communities include mineralised or weathered iron formations and areas of karstic calcrete (Halse 2018b; Mokany *et al.* 2017). Troglofauna species are also found in various detritals, including colluvium, although their importance as habitat is variable. Some other vuggy rock formations are also likely to support troglofauna but there have been insufficient survey efforts to estimate their importance. Areas with very shallow water tables, where the whole soil profile occasionally saturates from surface to water table, are unsuitable for troglofauna.

Stygofauna Habitat

The most productive known stygofauna habitats in Western Australia are aquifers in alluvium and calcrete associated with palaeochannel deposits. Aquifers in mafic rock can be productive and aquifers in some iron formations (especially channel iron formation) may contain abundant stygofauna (Halse *et al.* 2014). The aquifers in other fractured or vuggy rock formations also have the potential to support stygofauna. In general, stygofauna community richness declines with increasing depth to the water table, principally due to reduced supply of carbon and nutrients (Humphreys 2006), with highest densities occurring when the water table is less than 30 mbgl. However, animals have been occasionally recorded where depth to water table is nearly 90 mbgl (Halse *et al.* 2014). Stygofauna occur in varying salinities but are mostly found in fresh to moderately saline waters with conductivities of less than 50,000 $\mu\text{S}/\text{cm}$. While oxygen levels are difficult to measure accurately, stygofauna are uncommon in hypoxic groundwater with under 0.3 mg O₂/L (Halse 2018a; Hose *et al.* 2015).


1.2. Potential Impacts

The effects of developing mining infrastructure and subsequent mining operations on subterranean fauna conservation values can be broadly divided into two categories of impact:

1. **Primary impacts** – these are the impacts with potential to cause extinction, or removal of local populations, of subterranean fauna. Direct removal of habitat is the most common primary impact, usually in the form of mine pit excavation (troglofauna) or water abstraction for pit dewatering and processing water (stygofauna).
2. **Secondary impacts** – these are impacts that reduce population densities of subterranean fauna through factors other than direct habitat loss. Secondary impacts commonly affect habitat quality and include pollutants, blast vibration, increased turbidity and the shadowing effects of surface infrastructure that reduce recharge. In an extreme form, some secondary impacts, such as salinisation or pollution, can threaten species persistence through physiological stress.

This report does not consider the possible effects of secondary impacts because they are difficult to quantify and usually do not threaten species persistence.





 GDA2020 MGA Zone 50

 Author: abrowse

 Date: 28/05/2025



Legend	
●	Towns
■	Project
—	Main Roads
—	Minor Roads
—	Rivers
▭	Proposed Pit Boundaries
▭	Survey Area
▭	Desktop search area
▭	Palaeovalleys

Figure 1. Project Location and Desktop Search Area

1.3. Conservation Legislation

Native flora and fauna in Western Australia are protected at both State and Commonwealth levels. At the national level, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a legal framework to protect and manage nationally and internationally important flora, fauna and ecological communities.

At the state level, the *Biodiversity Conservation Act 2016* (BC Act) provides a legal framework for protection of species, particularly for species listed by the Minister for the Environment as threatened, and this list includes some subterranean species. In addition to the list of threatened species under the BC Act, the Department of Biodiversity, Conservation and Attractions (DBCA) maintains a list of priority species that are of conservation importance but, for various reasons including data deficiency, do not meet the criteria for listing as threatened.

Both the EPBC and BC Acts provide frameworks for the protection of threatened ecological communities (TECs). Within Western Australia, DBCA also recognises communities of potential conservation concern, but for which there is not enough information to support listing, as priority ecological communities (PECs). The list of TECs and PECs recognised under the BC Act and by DBCA is larger than the EPBC Act TEC list and has a much greater focus on subterranean communities. PECs for subterranean fauna usually refer to areas of calcrete in paleo-valleys and aquifers.

2. DESKTOP ASSESSMENT

2.1. Methods

The likelihood of subterranean fauna occurring in the Project area was assessed by compiling records of troglofauna and stygofauna in the Western Australian Museum (WAM) and Bennelongia databases within a 100 km x 100 km search area centred on the Project (decimal degree coordinates of desktop search area: top left -20.232°S:118.457°E, bottom right -21.148°S:119.452°E). Additionally, information from available published research papers, environmental reports and online resources such as the Atlas of Living Australia were also reviewed, along with lists of conservation-significant communities and species (BC Act and EPBC Act).

It is important to note that due to incomplete or inconsistent taxonomy for some records, often due to incorrect sex, poor condition, or life stage for species identification, it is not possible to determine the exact number of species recorded in the search area. Some recorded species may contain multiple taxa and, conversely, some specimens assigned to different taxa may represent the same species. As such, the taxonomic counts provide an estimate of subterranean species numbers and help determine the potential for diverse communities in a given area.

2.2. Results

2.2.1. Geology

The Project is situated in the central Pilbara, which is characterised by alluvial plains with occasional hill ranges and rocky outcrops. The climate is arid, with high evaporation and erratic rainfall. The landscape is drained by ephemeral watercourses with highly seasonal flows running to regional drainage systems, including Tabba Tabba Creek, Strelley River and De Grey River.

The Project lies on the Tabba tabba shear zone, which is a northeast-trending range up to 3 km wide. Outcropping geologies along the range include chert, banded iron-formation, serpentinite, ultramafic schist, gabbro, mafic schist, and granites. A vast sandplain of alluvial and colluvial soils and low-lying granite occurs to the north and south of the shear zone (Smithies *et al.* 2002).

Within the Survey Area there are areas of cavernous calcrete (Czrk and Czak) and dissected and consolidated colluvium, with some clay and silica cementing (Czc) (Smithies *et al.* 2002). Alluvial and

colluvial soils occurs in the drainage lines and flat plains to depths of approximately 2 metres below ground level (mbgl) (Rockwater 2024), which is too shallow for subterranean species. Surface geologies were assessed for the likelihood of habitable spaces supporting subterranean fauna occurring (Figure 2). The bedrock consists of metamorphosed and consolidated geologies and is highly weathered down to 46 mbgl. Some weakly metamorphosed banded iron formation occurs in the De Grey Supergroup within the bedrock (Figure 3). Many dikes intersect the area, and there is a high frequency of fracturing and weathering down to depths of 80 mbgl at the Project (Rockwater 2024; Smithies *et al.* 2002).

A high frequency of fracturing and weathering at the Project indicates the geology may be very prospective for subterranean fauna. Consolidation and cementing of the geology, along with a high frequency of dykes may limit the habitable spaces and connectivity of habitat occurring here, limiting the habitat suitability. However, the dykes and small patches of suitable habitat found at the Project have the potential to limit habitat connectivity and species' dispersal. Overall, there is a mix of suitable and unsuitable habitat, with a possibility of restricted subterranean species occurring here. With this finding, the baseline stygofauna and troglifauna survey will assist with determining the presence or absence of subterranean species within the proposed impact areas.

2.2.2. Hydrogeology

Two geologies occurring along the Tabba Tabba shear zone are likely to hold groundwater, these are the Cleaverville banded iron-formation, and the Kangaroo caves formation. Groundwater here primarily occurs in weathered and fractured lithological contact zones, typically to a maximum depth of approximately 80 mbgl. While fault zones generally provide optimal fracture rock aquifers, there are few interconnected water-bearing fractures occurring here (AquaGeo 2025; Rockwater 2024).

Field testing found water yield to be generally low, but high in locations where significant fractures occur. Water quality measurements from the Project show the groundwater is suitable for stygofauna habitation, with neutral pH and slightly brackish salinity being well within habitable ranges (Rockwater 2024). The presence of large but isolated fractured rock aquifers indicates some stygofauna species may occur here, and those that do occur may be highly restricted.

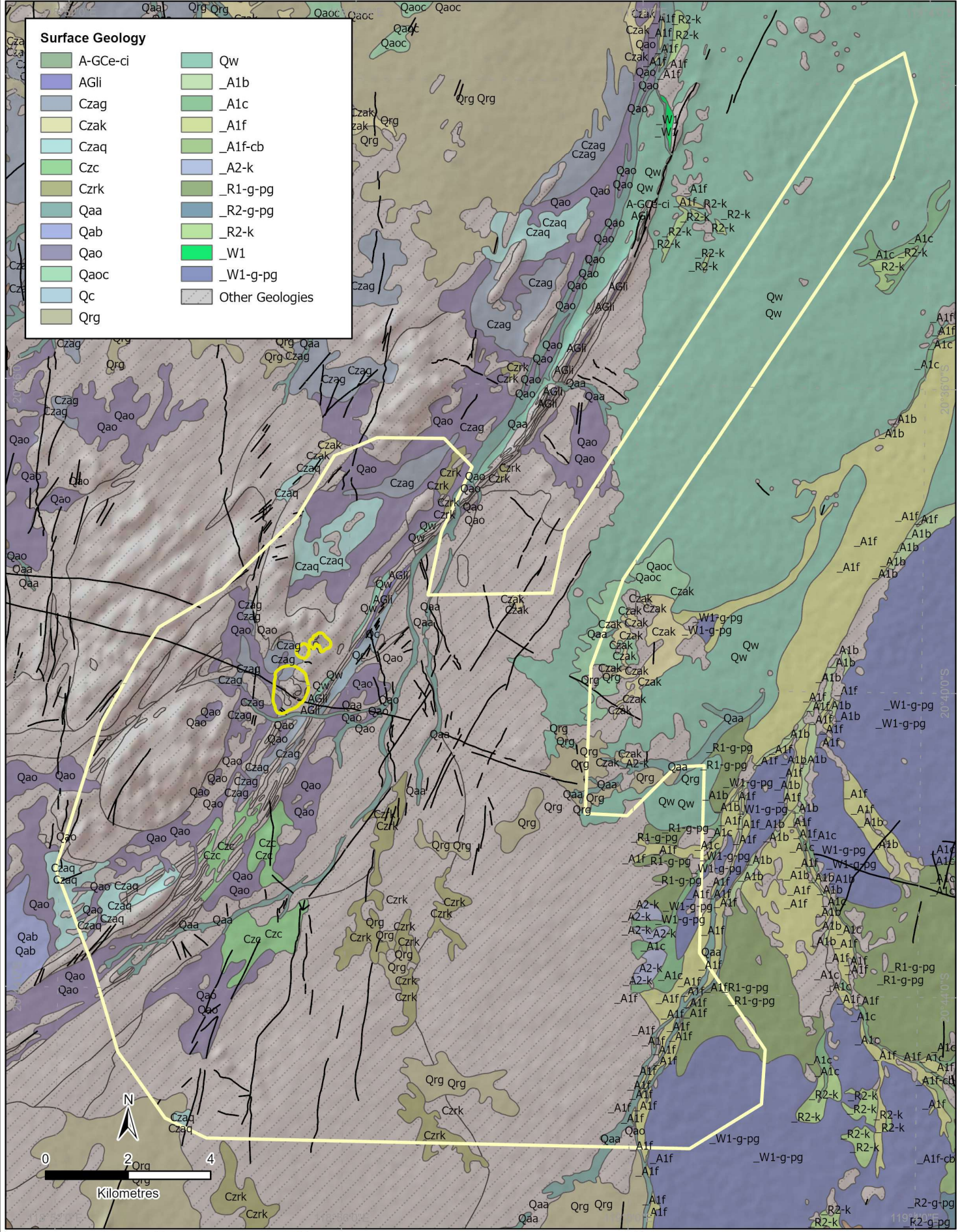


Figure 2. Surface Geology of the Tappa Tappa Project Area

Bennelongia Environmental Consultants

Project

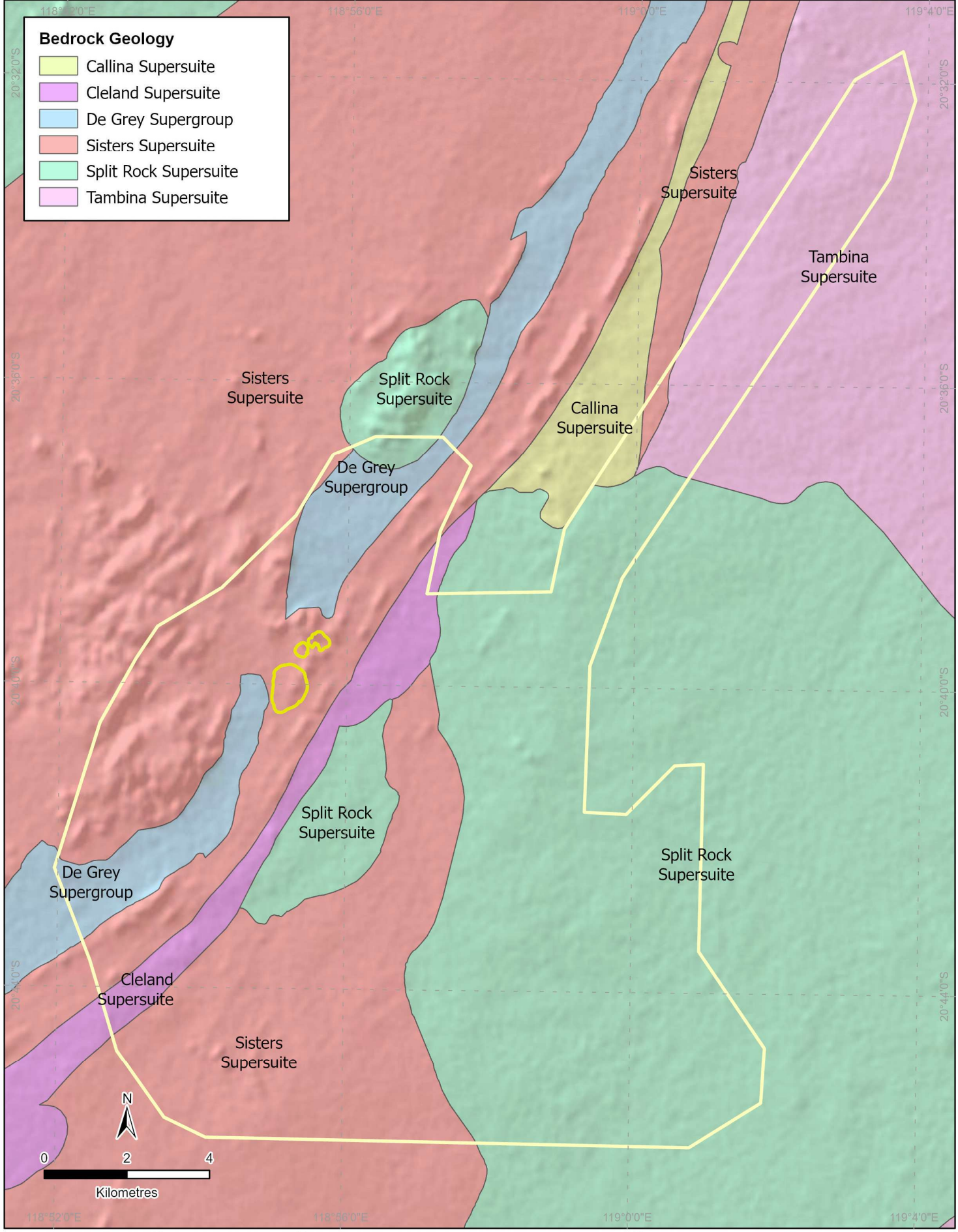
GDA2020 MGA Zone 50
 Author: abrowse
 Date: 30/05/2025

Legend

- Dykes
- ▭ Pit Outlines
- ▭ Survey Area

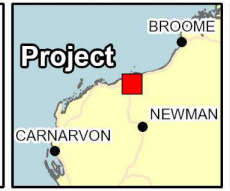
Table 1. Description of surface geology codes presented in Figure 2.

Code	Description
A-GCe-ci	Banded iron-formation and ferruginous chert; local banded quartz--magnetite--grunerite rock; metamorphosed
AGli	Banded iron-formation; locally includes banded quartz-magnetite-grunerite rock; metamorphosed
Czag	Alluvial gravel, unrelated to recent drainage; dissected by present-day drainage
Czak	Alluvial calcrete; massive, nodular, and cavernous limestone; variably silicified; dissected by present-day drainage
Czaq	Alluvial gravel deposits, dominated by vein-quartz debris, unrelated to recent drainage; dissected
Czc	Colluvium - dissected consolidated clay, silt, and sand deposits; derived from adjacent rock outcrops
Czrk	Residual calcrete; massive, nodular, and cavernous limestone; mainly silicified
Qaa	Alluvial sand and gravel in rivers and creeks; clay, silt, and sand in channels on floodplains
Qab	Alluvial sand, silt, and clay in floodplains, with gilgai surface in areas of expansive clay
Qao	Alluvial sand, silt, and clay on floodplains
Qaoc	Mixed floodplain deposits with numerous small claypans
Qc	Colluvium - sand, silt, and gravel in outwash fans; scree and talus; proximal mass-wasting deposits
Qrg	Quartzofeldspathic eluvial sand with quartz and rock fragments; overlying and derived from granitoid rock
Qw	Sheetwash deposits - silt, sand, and pebbles on distal outwash fans; no defined drainage
_A1b	Sand, silt, and gravel in the beds of major active drainage channels; unconsolidated
_A1c	Sand, silt, and gravel in active drainage channels; includes clay, silt, and sand in poorly defined drainage courses on floodplains; unconsolidated
_A1f	Floodplain deposits; sand, silt, clay, and gravel adjacent to main drainage channels; unconsolidated
_A1f-cb	Sand, silt, and clay on floodplains, with gilgai surface in areas of expansive clay; unconsolidated
_A2-k	Alluvial or lacustrine calcrete; massive, nodular, and cavernous limestone; variably silicified; dissected by present-day drainage
_R1-g-pg	Residual quartzofeldspathic sand, with quartz and rock fragments; overlying and derived from mass-wasting of granitic rocks; unconsolidated
_R2-g-pg	Variably consolidated eluvial and colluvial sand, gravel, and silt overlying and derived from granitic rocks; dissected by present-day drainage
_R2-k	Residual calcrete: massive, nodular, and cavernous limestone; variably silicified; dissected by present-day drainage
_W1	Silt, sand, and pebbles in distal sheetwash fans; no defined drainage; unconsolidated
_W1-g-pg	Quartzofeldspathic sand and quartz pebbles in sheetwash fans; derived from mass-wasting of granitic rocks; unconsolidated



Bennelongia
Environmental Consultants

GDA2020 MGA Zone 50
Author: abrowse
Date: 30/05/2025



Legend

- Dykes
- Pit Outlines
- Survey Area

Figure 3. Bedrock Geology of the Tappa Tappa Project Area

Table 2. Description of bedrock geology presented in Figure 3.

Bedrock Geology	Description
Callina Supersuite	Metadiorite to metasyenogranite; massive to gneissic
Cleland Supersuite	Monzogranite, granodiorite, and tonalite; local gabbro and dolerite; variably metamorphosed
De Grey Supergroup	Clastic sedimentary rocks, banded iron-formation and chert, and subordinate mafic and felsic volcanic rocks; weakly metamorphosed
Sisters Supersuite	Granitic and ultramafic to mafic intrusive rocks; metamorphosed
Split Rock Supersuite	Undivided granitic rocks including monzogranite, syenogranite, and pegmatite
Tambina Supersuite	Metatonalite and metagranodiorite; gneissic to massive; local leucocratic monzogranite

2.2.3. Threatened Species, TECs and PECs

There are no listed threatened subterranean species, and no TECs or PECs concerning subterranean fauna, occurring within the desktop search area. The nearest PEC is known as the “Invertebrate assemblages (Errawallana Spring type) Coolawanya Station”, which is approximately 150 km from the Project. The vast majority of DBCA listed subterranean species in the Pilbara are concentrated around Cape Range, Barrow Island, and the Robe Valley.

2.2.4. Troglifauna Records

Troglifauna records within the search area indicate a diverse regional assemblage, with species-rich zones identified in both the northern and southern portions. However, records near the Project area are limited (Figure 4). At least 72 species of troglifauna have been recorded within the search area from 219 records. Taxonomic groups recorded include beetles (Coleoptera; 11 species), millipedes (Diplopoda; nine species), diplurans (nine species), centipedes (Chilopoda; eight species), pauropods (eight species), arachnids (eight species), silverfish (*Zygentoma*; six species), isopods (five species), symphylans (two species), cockroaches (*Nocticola*; two species), and one species each of a segmented worm (Annelida), a fly (Diptera), an ant (Formicidae), and a true bug (Hemiptera).

Within the Project Survey Area, only a single troglifauna record has been documented a diplopod species from the family Dalodesmidae (*Dalodesmidae* `BDI085`). This species is known solely from two juvenile specimens collected within the proposed pit boundary by Rockwater in 2024 (Rockwater 2024).

2.2.5. Stygofauna Records

The stygofauna community within the search area is highly diverse, with at least 218 species identified from 1,969 records (Figure 5). Many of these records are concentrated in highly productive stygofauna hotspots likely correlating with areas of more porous geology such as calcretes; however, unlike troglifauna, stygofauna records are more evenly distributed across the entire search area. The taxonomic composition reflects a well-structured and ecologically robust stygofauna community. Taxonomic groups recorded include copepods (61 species), ostracods (59 species), annelids (31 species), amphipods (29 species), syncarids (14 species), isopods (12 species), arachnids (four species), three species each of nematodes and rotifers, and one species each of diplura and flatworm (Platyhelminthes).

Within the Project Survey Area, 11 stygofauna species have been recorded, 10 of which are either known widespread taxa or identified to higher taxonomic levels.

The ten widespread species are *Areacandona iuno*, *Cypretta seurati*, *Diacyclops* `BCY109`, *Diacyclops cockingi*, *Diacyclops scanloni*, *Elaphoidella humphreysi*, *Megastygonitocrella trispinosa*, Paramelitidae Genus 2 sp. B14, *Penthesilenula brasiliensis* and *Pristina longiseta*.

The remaining species, the isopod *Coxicerberus* sp. B06, has been recorded at only two locations approximately 300 metres apart. Both records fall within the proposed pit boundary.

3. FIELD SURVEY

3.1. Methods

All subterranean fauna sampling was undertaken with a fauna taking (scientific or other purposes) licence (Formerly 'Regulation 17 – License to take fauna for scientific purposes').

Sampling for troglofauna typically uses two complementary techniques: scraping and trapping. When calculating troglofauna sample effort, scraping and trapping each represent 0.5 samples irrespective of the number of traps used. The reason for treating scraping and trapping as sub-samples is that troglofauna generally occur at low abundance and sampling yields are very low; therefore the use of two techniques contributes significantly to obtaining representative samples of the troglofauna community in a particular area (Halse *et al.* 2018; Halse and Pearson 2014).

Scraping is an active sampling technique undertaken prior to setting traps. In each scraping event, a troglofauna net was prepared with a weighted ring net of 150 µm mesh, and a diameter closely matched to 60% of the bore diameter. This net was lowered to the bottom of a bore or to the water table and subsequently scraped back to the surface at least four times. In each of these scrapes a different section of the wall of the hole was targeted (e.g., north, south) to maximize the number of organisms retrieved. The contents of each scrape were immediately stored in 100% ethanol for preservation of the sample and its DNA.

Troglofauna trapping is a passive sampling technique used after the drill hole has been scraped. Traps of cylindrical PVC (approx. 270 x 70 mm) with holes drilled on the side and top to function as entrances are baited with microwaved leaf litter. Traps were lowered on nylon cord to the end of the bore, or to a few metres above the water table. At one-quarter of holes, a second trap was set approximately halfway between the surface and the first trap to control for any trap depth effect on troglofauna yield (Halse *et al.* 2018; Halse and Pearson 2014). Traps were then left inside bores for at least 8 weeks to allow troglofauna enough time to colonise them. During that period, the bores were sealed to minimise movement of surface animals into the troglofauna traps. When traps were retrieved, their contents were transferred to a zip-lock bag and transported alive to the laboratory in Perth.


Stygofauna were collected using an active sampling technique. At each hole, a small, weighted plankton net was lowered to the bottom of the hole and then agitated vigorously to stir benthic and epibenthic fauna into the water column, where animals were then captured as the net was slowly retrieved. Six separate net hauls were conducted per hole (three with a 50 µm mesh net and three with a 150 µm mesh net). The contents of the net were transferred to 100% ethanol for preservation after each haul. Contamination between sites was avoided by washing the nets with a low concentration of bleach (Decon 30) between the sampling of different drill holes.

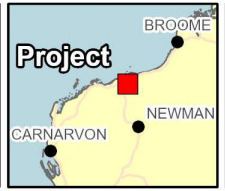
The baseline field survey was undertaken from 12th-15th May 2025, where 39 troglofauna scrapes were collected and 48 troglofauna traps were deployed at 40 sites. Stygofauna nets were collected from 17 sites. A complete list of holes sampled for troglofauna is provided in Appendix 3, while holes sampled for stygofauna, along with water chemistry results, are shown in Appendix 4. All site locations are included in Appendix 5.

3.2. Limitations

Without groundwater drawdowns available, the field survey targeted all available sites provided by the client and primarily used the proposed pit locations as an impact/reference boundary for troglofauna, however this does not identify impact/reference boundaries for stygofauna. Limited historical survey has been undertaken at Tabba Tabba, so the distributions of newly collected species are mostly unknown, and rely on the broad geological data. Some historical records in the collated databased were missing coordinates, so only a general location could be used to help determine distributions on relevant species, where necessary.




 GDA2020 MGA Zone 50
 Author: jhaines
 Date: 8/12/2025



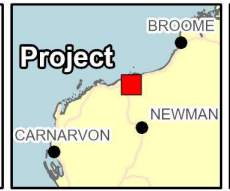
Legend	
■	Project
●	Towns
—	Main Roads
—	Rivers
▭	Proposed Pit Boundaries
▭	Survey Area
- - -	Desktop search area
▭	Palaeovalleys
●	Troglofauna

Figure 4. Troglofauna Records in Desktop Search Area



Bennelongia
Environmental Consultants

GDA2020 MGA Zone 50
Author: abrowse
Date: 3/06/2025



Legend	
●	Stygofauna
●	Towns
■	Project
	Main Roads
	Rivers
	Proposed Pit Boundaries
	Survey Area
	Desktop search area
	Palaeovalleys

Figure 5. Stygofauna Records in the Desktop Search Area

3.2.1. Laboratory Analysis

All samples were elutriated to separate animals from sediment. They were put through sieves to fractionate the contents according to size (53, 90, and 250 μm) to improve searching efficiency before screening under a dissection microscope. All potential subterranean animals were collected from these samples for species identification, either using morphology and DNA barcoding approaches.

For smaller animals, whole animals were used in tissue extractions. For larger animals, sections of the abdomen were used for tissue extraction. DNA of all samples was extracted using a Qiagen DNeasy Blood & Tissue kit (Qiagen 2006) using manufacturer's protocols, except for the incubation period in Lysis Buffer ATL and Proteinase K, which was increased to 24 h. Elute volumes were set to 2 x 100 μL .

Primer combinations used for PCR amplifications were jgLCO1490: jgHCO2198 targeting the COI region of the mitochondrial genome (Geller *et al.* 2013) and 12SCRF:12SCRR (Wetzer 2001) targeting mitochondrial rRNA 12S gene. PCR products were sequenced using dual-direction Sanger sequencing carried out by the Australian Genome Research Facility (AGRF). The returned sequences were edited manually in Geneious Prime v2025.1.2 (<https://www.geneious.com>).

Pairwise genetic distances to related sequences in the Bennelongia database were calculated as uncorrected p-distances (total percentage of nucleotide differences between sequences). Similarity to all sequences in the non-redundant nucleotide database at GenBank was determined using the Basic Local Alignment Search Tool nucleotide (BLAST) suite of applications (<https://blast.ncbi.nlm.nih.gov/Blast.cgi>) (Altschul *et al.* 1990). To visualise genetic distances and phylogenetic relationships between taxa, distance based phylogenetic trees were generated, using the maximum likelihood (RAxML) phylogenetic tree in Geneious (Stamatakis 2014), with GTR+G+I as best fitting model (Nei and Kumar 2000), and with 1000 bootstrap replicates. Publicly available sequences on GenBank were included in phylogenetic analysis to provide a framework for assessing intra- versus interspecific variation and determining species boundaries.

3.3. Personnel

Bennelongia personnel involved with this project are listed in Table 3

Table 3: Personnel involved in the Tabba Tabba subfauna survey

Name	Qualifications/Experience	Task
Ana Vasconcelos	B.Sc. (Hons.), M.Sc., Ph.D, Senior Biologist	Species Identifications (Amphipods, Pseudoscorpiones)
Ashley Browse	B.Sc, Biologist	Fieldwork
		Sample Sorting
		Reporting
Daniel White	B.Sc. (Hons.), M.Sc., Ph.D., Principal Biologist	DNA sequencing and analysis
Ella Carstens	B.Sc. (Hons.), Biologist	Fieldwork
Emily Stout	B.Sc (Hons), M.Sc, Biologist	Sample Sorting
Heather McLetchie	B.Sc. (Hons.) , Senior Biologist	DNA sequencing and analysis
Jane McRae	Over 25 years taxonomic experience, Senior Taxonomist	Species identifications
Jaxon Haines	B.Sc., Biologist	Mapping
		Reporting
Kiara Harris	B.Sc., Biologist	Fieldwork

Name	Qualifications/Experience	Task
		Sample Sorting
Melita Pennifold	Over 25 years of taxonomic experience, Senior Scientist	Sample Sorting
Oscar Garswood	B.Sc., Biologist	Sample Sorting
		Fieldwork
Veera Haslam	B.Sc. (Hons.), Ph.D. , Biologist	DNA sequencing and analysis
Will Baxter	B.Sc., Biologist	Fieldwork
		Sample Sorting

3.4. Survey Results

Water chemistry analyses from stygofauna sampling sites indicate that the groundwater conditions are suitable to support stygofaunal communities. Electrical conductivity indicated relatively fresh water (738.2 – 7,990 $\mu\text{S}/\text{cm}$), pH was approximately neutral (6.84 – 7.33) and the temperature ranged between 24.2 – 31.4 degree Celsius (Appendix 4).

A total of 463 specimens were collected from the field survey, with 24 sites yielding predominantly stygofauna (Table 4, Figure 6) with only a single troglifauna specimen collected. Twelve species of subterranean fauna were identified from six broader groups. The most abundant group were copepods (338 specimens from 4 species), then oligochaetes (93 specimens from 3 species), followed by syncarids (21 specimens from 1 species), amphipods (6 specimens from 2 species), ostracods (5 specimens from 2 species) and pseudoscorpions (1 specimen). The species *Coxicerberus* sp. B06 and Dalodesmidae `BDI085` were not collected in the field survey, the species records from the desktop have been collated with the survey data in Table 4 however distributions have not been extended out of the pit area.

3.4.1. Species Accounts

Copepods

Copepods were the most abundant group of subterranean fauna collected in the survey. Four species of copepods were collected, *Diacyclops* `BCY109`, *Diacyclops scanloni*, *Megastygonitocrella trispinosa* and *Elaphoidella humphreysi*. *Diacyclops* `BCY109` has a small known linear distribution of 11 km, but 141 specimens were collected from 11 sites all around the project. The remaining copepods collected are widespread across the northern Pilbara region.

Oligochaetes

Three species of oligochaetes were collected in the survey, Enchytraeidae `3 bundle` s.l. (short sclero) (not in figure or table), Phreodrilidae sp. AP DVC s.l. and *Monopylephorus* sp. nov. WA29 (ex Pristina WA3) (PSS). All three species are commonly recorded in the Pilbara region.

Syncarids

The species *Billibathynella* `BSY418` was recorded from three locations within the Survey Area. Current data indicates that this species is restricted to the survey area, and its true distribution is unknown. All collections of this species are within 500 m of the proposed pit boundary.

Amphipods

Two species of amphipods were collected; *Pilbarana* sp. B06 and Paramelitidae Genus 2 sp. B14. Both species are commonly collected in the Pilbara region, although Paramelitidae Genus 2 sp. B14 is known only from a linear range of 100 km.

Ostracods

Two species of ostracods were collected in the survey; *Areacandona* `BOS365` and *Areacandona iuno*. *Areacandona* `BOS365` was recorded from one site (TAWB007), identified from only a single valve. Current data suggests that *Areacandona* `BOS365` has a very small linear range, less than 10 km, although is only known from two records. *Areacandona iuno* is widespread across the Pilbara region.

Pseudoscorpions

The only troglofauna specimen collected from the survey was identified as *Tyrannochthonius* `BPS619`. It was retrieved from a trap set at site TARC395D, outside of the proposed pit excavation area. This is the first known record of *Tyrannochthonius* `BPS619`.

4. CONCLUSION

The desktop assessment area encompasses highly prospective habitats for both troglofauna and stygofauna, with a broad diversity of taxa represented. Within the defined Survey Area, only a single troglofauna record from the desktop study was recorded; Dalodesmidae `BDI085`. In contrast, several widespread stygofauna species have been recorded across the Survey Area, suggesting strong connectivity within the locally prospective geologies. Notably, one stygofauna species, *Coxicerberus* sp. B06, is currently known only from within the proposed pit boundary; however, the apparent habitat connectivity suggests this species may have a broader distribution.

The subsequent field survey supported the desktop assessment findings, revealing a relatively rich assemblage dominated by stygofauna, particularly copepods. *Coxicerberus* sp. B06 and was not collected during the field survey and remains known only from the proposed pit location. Two additional stygofauna species not considered widespread were recorded: the ostracod *Areacandona* `BOS365`, and the syncarid *Billibathynella* `BSY418`.

The record of one troglofauna species from the desktop assessment and another single species from the survey (*Tyrannochthonius* `BPS619`) suggests that the troglofauna assemblage is very depauperate. Given that the single specimen of *Tyrannochthonius* `BPS619` was collected outside of the troglofauna impact area, this species is unlikely to be significantly impacted by Project-related mining activities. Not enough is known about this species to make any conclusions about its true distribution. Dalodesmidae `BDI085` is known only from the troglofauna impact area (the proposed pit area). The surface geology of the collection location extends southwards away from the proposed pit boundary, and stygofauna species collected nearby (eg. *Diacyclops* `BCY109`) have locally or regionally widespread distributions. Although the connectivity of stygofauna habitats may differ to that of troglofauna, the size of the proposed pit area is relatively small, and it is unlikely that removal of this area of habitat will significantly impact the species.

In the absence of a predicted groundwater drawdown model, it is difficult to quantify the potential impacts to the stygofauna assemblage. However, it is likely that sites that yield stygofauna will be impacted by dewatering activities given that all the stygofauna specimens were collected within ~1.2 km from proposed pit boundaries. Based on the desktop results and the local geology, the high likelihood of habitat connectivity suggests that the distributions of the species restricted to the Survey Area are expected to extend to less impacted areas.

Due to current data limitations, exact species distributions cannot be determined, however based on known records, an estimated linear distribution was calculated for each species collected. Any further survey that may be undertaken should be targeted towards building knowledge on the distributions of these species:

- *Areacandona* `BOS365` (<1 km distribution)
- *Billibathynella* `BSY418` (1.4 km distribution)
- *Coxicerberus* sp. B06 (<1 km distribution)
- *Tyrannochthonius* `BPS619` (One survey record, Bore: TARC395D)

- Dalodesmidae `BDI085` (One desktop record, Bore: TARC135)

It is also recommended that the groundwater impact is modelled to assist with future impact assessments.

Table 4: Subterranean fauna records from the survey, and significant desktop records.

*Records from desktop assessment

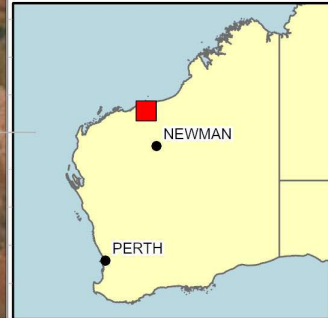
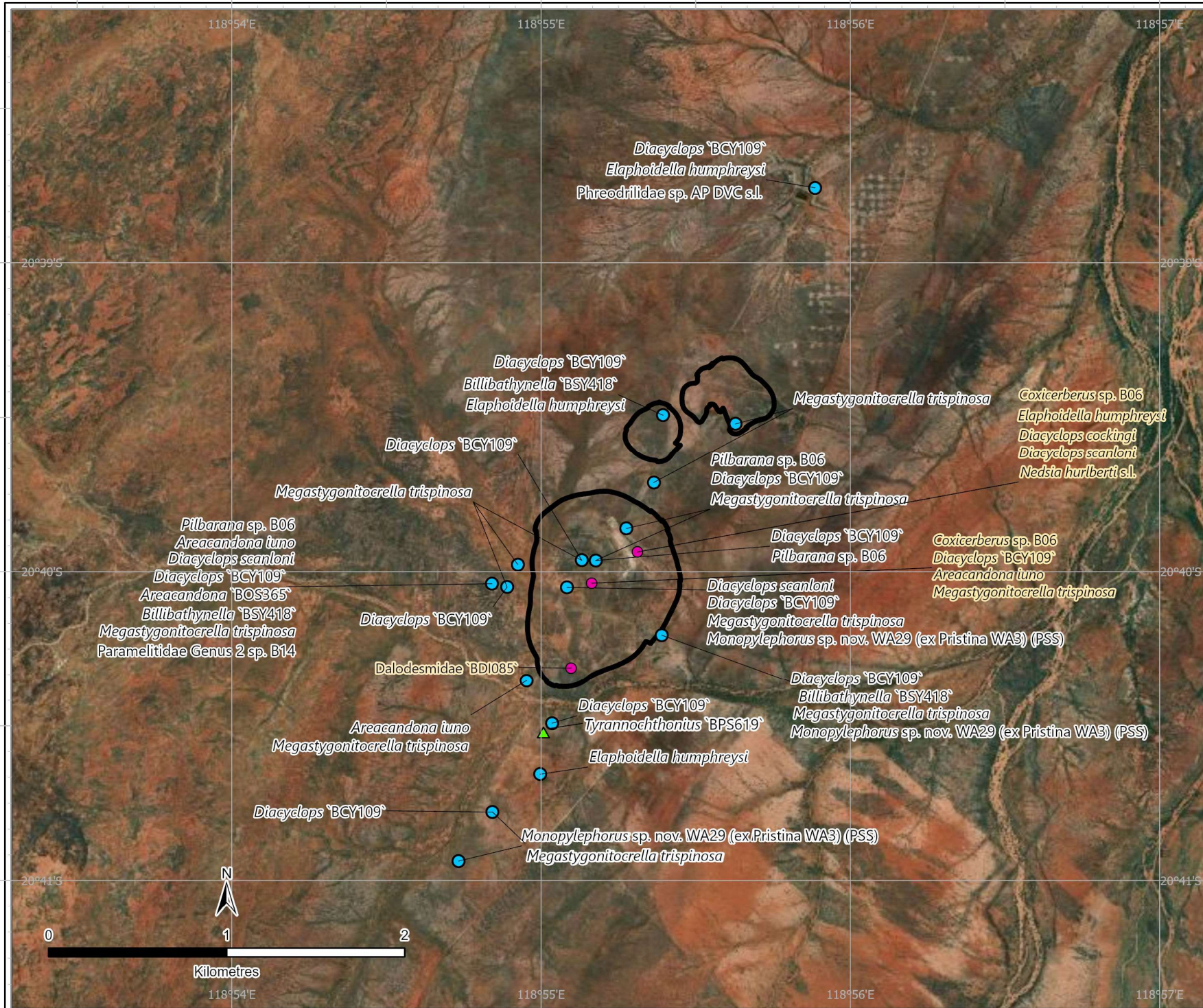
Higher order ID	Lowest Identification	Sites	No. Specimens (Sites)	Project only	Known Distribution
Annelida					
Clitellata					
Haplotaxida					
Phreodrilidae	Phreodrilidae sp. AP DVC s.l.	Bore C TARC149	1 (1)	No	Widespread
Tubificida					
Naididae	<i>Monopylephorus</i> sp. nov. WA29 (ex Pristina WA3) (PSS)	TAMB004 TARC129 TARC149 TARC344D TARC381	18 (4)	No	Widespread
Arthropoda					
Arachnida					
Pseudoscorpiones					
Chthoniidae	<i>Tyrannochthonius</i> `BPS619`	TARC395D	1 (1)	Yes	Singleton
Ostracoda					
Podocopida					
Candonidae	<i>Areacandona</i> `BOS365`	TAWB007	1 (1)	Yes	<1 km
	<i>Areacandona iuno</i>	TAMB001 TARC241 TAWB007	5 (3)	No	Widespread
Maxillopoda					
Cyclopoida					
Cyclopidae		Bore C TAMB004 TAMB005 TARC129 TARC149 TARC158 TARC241 TARC344D TARC395D TARC421 TAWB004 TAWB007	142 (12)	No	~11 km
	<i>Diacyclops cockingi</i>	TARC1307	153 (1)	No	Widespread
	<i>Diacyclops scanloni</i>	TARC129 TAWB007	8 (3)	No	Widespread

Higher order ID	Lowest Identification	Sites	No. Specimens (Sites)	Project only	Known Distribution
		TTRC1307			
Harpacticoida					
Ameiridae	<i>Megastygonitocrella trispinosa</i>	TAMB001 TAMB003 TAMB004 TAMB005 TARC034 TARC129 TARC149 TARC158 TARC241 TARC262D TARC344D TARC381 TAWB004 TAWB007	170 (14)	No	Widespread
Canthocamptidae	<i>Elaphoidella humphreysi</i>	Bore C TARC358D TARC421 TTRC1307	332 (4)	No	Widespread
Malacostraca					
Syncarida					
Parabathynellidae	<i>Billibathynella</i> `BSY418`	TAMB004 TARC421 TAWB007	21 (3)	Yes	1.4 km
Amphipoda					
Eriopisidae	<i>Nedsia hurlberti</i> s.l.	TTRC1307	1 (1)	No	Widespread
	<i>Pilbarana</i> sp. B06	TAMB005 TARC149 TAWB007	3 (3)	No	Widespread
Paramelitidae	Paramelitidae Genus 2 sp. B14	TAWB007	3 (1)	No	Widespread
Isopoda					
Microcerberidae	<i>Coxicerberus</i> sp. B06*	TARC241 TTRC1307	3 (2)	Yes	<1 km
Diptopoda					
Polydesmida					
Dalodesmidae	Dalodesmidae `BDI085` *	TARC135	2 (1)*	Yes	<1 km

Figure 6. Subterranean fauna species collected in the survey, and significant desktop records

Legend

-  Proposed Pit Boundaries
-  Stygofauna
-  Trogllofauna
-  Desktop Species



5. REFERENCES

- Aplin, K.P. (1998) Three new blindsnakes (Squamata, Typhlopidae) from north western Australia. *Records of the Western Australian Museum* **19**: 1-12.
- AquaGeo (2025) Groundwater Exploration -Tabba Tabba. [Unpublished Report], 18 pp.
- Eberhard, S.M., Halse, S.A., and Humphreys, W.F. (2005) Stygofauna in the Pilbara region, north-west Western Australia: a review. *Journal of the Royal Society of Western Australia* **88**: 167-176.
- Eberhard, S.M., Halse, S.A., Williams, M.R., Scanlon, M.D., Cocking, J., and Barron, H.J. (2009) Exploring the relationship between sampling efficiency and short-range endemism for groundwater fauna in the Pilbara region, Western Australia. *Freshwater Biology* **54**: 885-901.
- EPA (2021) Technical guidance - Subterranean fauna surveys for environmental impact assessment. Environmental Protection Authority, Perth, WA, 35 pp.
- Gibert, J., and Deharveng, L. (2002) Subterranean Ecosystems: A Truncated Functional Biodiversity: This article emphasizes the truncated nature of subterranean biodiversity at both the bottom (no primary producers) and the top (very few strict predators) of food webs and discusses the implications of this truncation both from functional and evolutionary perspectives. *BioScience* **52**(6): 473-481.
- Guzik, M.T., Austin, A.D., Cooper, S.J.B., *et al.* (2010) Is the Australian subterranean fauna uniquely diverse? *Invertebrate Systematics* **24**(5): 407-418.
- Halse, S.A., 2018a. Conservation and Impact Assessment of Subterranean Fauna in Australia. In: OT Moldovan, L Kovac and S Halse (Eds.), *Cave Ecology*. Springer Nature Switzerland, Cham, Switzerland, pp. 479-494.
- Halse, S.A., 2018b. Subterranean fauna of the arid zone. In: H Lambers (Ed.), *On the ecology of Australia's arid zone*. Springer Nature, Cham, Switzerland, pp. 388.
- Halse, S.A., Curran, M.K., Carroll, T., and Barnett, B. (2018) What does sampling tell us about the ecology of troglofauna? *ARPHA Conference Abstracts* **1**.
- Halse, S.A., and Pearson, G.B. (2014) Troglofauna in the vadose zone: comparison of scraping and trapping results and sampling adequacy. *Subterranean Biology* **13**: 17-34.
- Halse, S.A., Scanlon, M.D., Cocking, J.S., Barron, H.J., Richardson, J.B., and Eberhard, S.M. (2014) Pilbara stygofauna: deep groundwater of an arid landscape contains globally significant radiation of biodiversity. *Records of the Western Australian Museum Supplement* **78**: 443-483.
- Harvey, M.S. (2002) Short-range endemism amongst the Australian fauna: some examples from non-marine environments. *Invertebrate Systematics* **16**(4): 555-570.
- Hose, G.C., Sreekanth, J., Barron, O., and Pollino, C. (2015) Stygofauna in Australian Groundwater Systems: Extent of knowledge. CSIRO, Australia, 71 pp.
- Howarth, F.G. (1983) Ecology of cave arthropods. *Annual Review of Entomology* **28**(1): 365-389.
- Humphreys, W.F. (2006) Aquifers: the ultimate groundwater dependent ecosystem. *Australian Journal of Botany* **54**: 115-132.
- Korbel, K., and Hose, G. (2011) A tiered framework for assessing groundwater ecosystem health. *Hydrobiologia* **661**(1): 329-349.
- Mokany, K., Harwood, T.D., Halse, S.A., and Ferrier, S. (2017) Riddles in the dark: assessing diversity patterns for cryptic subterranean fauna of the Pilbara. *Diversity & Distributions*: 34.
- Ponder, W.F., and Colgan, D.J. (2002) What makes a narrow-range taxon? Insights from Australian freshwater snails. *Invertebrate Systematics* **16**: 571-582.

Rockwater (2024) Detailed Hydrogeological Assessment Report For Mining Proposal. [Unpublished Report], 25 pp.

Smithies, R.H., Champion, D.C., and Blewett, R.S. (2002) Geology of the Wallaringa 1:100 000 Sheet. Geological Survey of Western Australia, Perth, 34 pp.

Whitley, G.P. (1974) From first fleet to El Torito. *Australian Natural History* **18**(2): 38-43.

APPENDICES

Appendix 1. Troglifauna desktop records in the search area

Higher Order	Lowest Identification	Distribution Range
Annelida		
Clitellata		
Enchytraeida		
Enchytraeidae		
(unknown genus)	Enchytraeidae `3 bundle` s.l. (short sclero)	Species complex widespread
Arthropoda		
Arachnida		
Araneae		
Linyphiidae		
(unknown genus)	Linyphiidae sp.	Higher order identification
Oonopidae		
Prethopalpus	<i>Prethopalpus</i> sp.	Higher order identification
(unknown genus)	Oonopidae `BAR143`	Only one specimen known
Symphytognathidae		
<i>Anapistula</i>	<i>Anapistula</i> sp.	Higher order identification
(unknown family)	Araneomorphae sp.	Higher order identification
Palpigradi		
(unknown family)	Palpigradi sp.	Higher order identification
Pseudoscorpiones		
Chthoniidae		
<i>Lagynochthonius</i>	<i>Lagynochthonius</i> `BPS554`	Only known from a single record
<i>Tyrannochthonius</i>	<i>Tyrannochthonius</i> `abydos`	Only known from a single record
	<i>Tyrannochthonius</i> `BPS228`	Only one specimen known
	<i>Tyrannochthonius</i> sp.	Higher order identification
(unknown genus)	Chthoniidae sp.	Higher order identification
Chilopoda		
Geophilomorpha		
Geophilidae		
(unknown genus)	Geophilidae sp.	Higher order identification
Schendylidae		
<i>Australoschendyla</i>	<i>Australoschendyla</i> sp. B01	Known from 3 locations 280 km apart
Scolopendromorpha		
Cryptopidae		
<i>Cryptops</i>	<i>Cryptops</i> `BSCOL095`	Known from 5 locations 3 km apart
	<i>Cryptops</i> `BSCOL097`	Only one specimen known
	<i>Cryptops</i> `BSCOL137`	Known from 2 locations 2 km apart
	<i>Cryptops</i> `BSCOL143`	Only one specimen known
	<i>Cryptops australis</i>	Species widespread
	<i>Cryptops</i> sp.	Higher order identification
Scolopendridae		
<i>Arthrorhabdus</i>	<i>Arthrorhabdus</i> sp.	Higher order identification
Diplopoda		
Polydesmida		
Dalodesmidae		
(unknown genus)	Dalodesmidae `BDI077`	Known from 5 locations 3 km apart
	Dalodesmidae `BDI085`	In proposed pit area; only known from a single record
Haplodesmidae		
<i>Prosopodesmus</i>	<i>Prosopodesmus</i> nr `OES8`	Known from 2 locations 30 km apart
(unknown genus)	Haplodesmidae `BDI084`	Known from 2 locations 2 km apart

Higher Order	Lowest Identification	Distribution Range
(unknown family)	Polydesmida sp. B01 (<i>polaris</i>)	Known from 2 bores 80 m apart
	Polydesmida sp. B02 (<i>polaris</i>)	Known from 2 bores 500 m apart
Polyxenida		
Lophoproctidae		
<i>Lophoturus</i>	<i>Lophoturus madecassus</i>	Species widespread
Polyxenidae		
(unknown genus)	Polyxenidae sp.	Higher order identification
Spirostreptida		
Iulomorphidae		
(unknown genus)	Iulomorphidae sp.	Higher order identification
Entognatha		
Diplura		
Campodeidae		
(unknown genus)	Campodeidae `BDP235`	Only one specimen known
	Campodeidae sp.	Higher order identification
Japygidae		
(unknown genus)	Japygidae `BDP236`	Known from 2 bores 300 m apart
	Japygidae `DPL003`	Known from 2 bores 2 km apart
	Japygidae sp.	Higher order identification
Parajapygidae		
(unknown genus)	Parajapygidae `DPL018`	Known from 3 locaitons 17 km apart
	Parajapygidae sp. B40	Only one specimen known
	<i>Parajapyx (Grassjapyx)</i> `BDP224`	Only one specimen known
	<i>Parajapyx (Grassjapyx)</i> `BDP247`	Only one specimen known
	<i>Parajapyx (Parajapyx)</i> `BDP234`	Known from 2 locations 4 km apart
Projapygidae		
(unknown genus)	Projapygidae sp.	Higher order identification
(unknown family)	Diplura sp.	Higher order identification
Insecta		
Blattodea		
Nocticolidae		
<i>Nocticola</i>	<i>Nocticola currani</i> s.l.	Common within known linear range of 54 km
	<i>Nocticola quartermainei</i> s.l.	Species complex widespread
	<i>Nocticola</i> sp.	Higher order identification
(unknown family)	Blattodea sp.	Higher order identification
Coleoptera		
Carabidae		
<i>Bylibaraphanus</i>	<i>Bylibaraphanus</i> `BCO270`	Known from 2 bores 1 km apart
(unknown genus)	Bembidiinae `BCO258`	Only one specimen known
	Carabidae sp.	Higher order identification
Curculionidae		
(unknown genus)	Cryptorhynchinae `BCO192`	Only known from a single record
	Cryptorhynchinae `BCO242`	Only known from a single record
	Cryptorhynchinae `BCO271`	Only known from a single record
	Cryptorhynchinae sp.	Higher order identification
Endomychidae		
<i>Holoparamecus</i>	<i>Holoparamecus</i> `BCO224`	Known from 5 locations 5 km apart
Ptiliidae		
<i>Ptinella</i>	<i>Ptinella</i> sp. B01 (=MC)	Species widespread
	<i>Ptinella</i> sp.	Higher order identification
<i>Rodwayia</i>	<i>Rodwayia</i> `BCO257`	Only one specimen known
Staphylinidae		
(unknown genus)	Pselaphinae sp.	Higher order identification
(unknown family)		

Higher Order	Lowest Identification	Distribution Range
Coleoptera gen 1	Coleoptera gen 1 sp. B08	Known from 6 locations 32 km apart
(unknown genus)	Coleoptera `BCO171` (nr Ptinella)	known from 3 locaitons 236 km apart
Diptera		
Sciaridae		
<i>Allopnixia</i>	<i>Allopnixia</i> sp. B01	Species widespread
(unknown family)	Diptera sp.	Higher order identification
Hemiptera		
Meenoplidae		
<i>Phaconeura</i>	<i>Phaconeura</i> sp.	Higher order identification
(unknown family)	Hemiptera sp.	Higher order identification
Hymenoptera		
Formicidae		
(unknown genus)	Formicidae sp.	Higher order identification
Zygentoma		
Nicoletiidae		
<i>Dodecastyla</i>	<i>Dodecastyla</i> sp.	Higher order identification
<i>Hemitrinemura</i>	<i>Hemitrinemura</i> sp.	Higher order identification
<i>Lepidospora</i>	<i>Lepidospora</i> sp.	Higher order identification
<i>Subtrinemura</i>	<i>Subtrinemura</i> sp.	Higher order identification
<i>Trinemura</i>	<i>Trinemura</i> `BZY088`	Only known from a single location
	<i>Trinemura</i> `BZY103`	Known from 4 locations 10 km apart
	<i>Trinemura</i> sp.	Higher order identification
(unknown family)	Zygentoma sp.	Higher order identification
Malacostraca		
Isopoda		
Armadillidae		
Armadillidae gen. indet.	Armadillidae `BIS499`	Known from 2 bores 1 km apart
	Armadillidae `BIS500`	Common within known linear range of 5 km
<i>Troglarmadillo</i>	<i>Troglarmadillo</i> `BIS601`	Only one specimen known
	<i>Troglarmadillo</i> sp.	Higher order identification
(unknown genus)	Armadillidae `BIS525`	Known from 3 locations 2 km apart
Philosciidae		
nr <i>Andricophiloscia</i>	nr <i>Andricophiloscia</i> `BIS526`	Known from 2 locations 10 km apart
(unknown family)	Isopoda sp.	Higher order identification
Pauropoda		
Tetramerocerata		
Pauropodidae		
(unknown genus)	Pauropodidae `BPU083`	Known from 2 locations 44 km apart
	Pauropodidae `BPU084`	Only one specimen known
	Pauropodidae `BPU085`	Only one specimen known
	Pauropodidae `BPU086`	Only one specimen known
	Pauropodidae `BPU111`	Known from 3 locations 7 km apart
	Pauropodidae `BPU122`	Only one specimen known
	Pauropodidae sp. B02 (polaris)	Known from 2 locations 6 km apart
	Pauropodidae sp. B38 (B04 group)	Only known from a single record
(unknown order)	Pauropoda sp.	Higher order identification
Symphyla		
Cephalostigmata		
Scolopendrellidae		
<i>Symphylella</i>	<i>Symphylella</i> sp. B01 (<i>polaris</i>)	Known from 3 bores 1 km apart
	<i>Symphylella</i> sp. B22	Only known from a single record
	<i>Symphylella</i> sp.	Higher order identification
(unknown order)	Symphyla sp.	Higher order identification

Appendix 2. Stygofauna desktop records in the search area

Higher Order	Lowest Identification	Distribution Range
Annelida		
Clitellata		
Enchytraeida		
Enchytraeidae		
<i>Achaeta</i>	<i>Achaeta</i> sp.	Higher order identification
<i>Enchytraeus</i>	<i>Enchytraeus</i> sp. AP PSS1 s.l.	Widespread group
(unknown genus)	Enchytraeidae `2 bundle` s.l. (long thin 2 per seg)	Widespread group
	Enchytraeidae `2 bundle` s.l. (long thin 4 per seg)	Widespread group
	Enchytraeidae `2 bundle` s.l. (short sclero 4 per seg)	Widespread group
	Enchytraeidae `3 bundle` s.l. (long thin)	Widespread group
	Enchytraeidae `3 bundle` s.l. (short sclero)	Widespread group
	Enchytraeidae `PST1` s.l. (E06)	Widespread group
	Enchytraeidae sp. E06-05	Group known only from Port Hedland and Newman
	Enchytraeidae sp. E06-10	Only one specimen known
Haplotaxida		
Haplotaxidae		
<i>Haplotaxis</i>	<i>Haplotaxis</i> sp.	Higher order identification
Phreodrilidae		
<i>Insulodrilus</i>	<i>Insulodrilus lacustris</i> s.l. Pilbara type 2/3 (PSS)	Species widespread
(unknown genus)	Phreodrilidae `BOL076` (AP DVC 1H)	Common within known linear range of 30 km
	Phreodrilidae sp. AP DVC s.l.	Widespread group
	Phreodrilidae sp. AP SVC s.l.	Widespread group
	Phreodrilidae sp. P05	Only one specimen known
	Phreodrilidae sp. P06	Only one specimen known
	Phreodrilidae sp. WA36 (PSS)	Species known from 3 locations, known linear range of 385 km
	Phreodrilidae sp.	Higher order identification
Tubificida		
Naididae		
<i>Dero</i>	<i>Dero furcata</i>	Species widespread
<i>Monopylephorus</i>	<i>Monopylephorus</i> sp. nov. WA29 (ex <i>Pristina</i> WA3) (PSS)	Species widespread
<i>Pristina</i>	<i>Pristina aequiseta</i>	Species widespread
	<i>Pristina longiseta</i>	Species widespread; occurs within project Survey Area
(unknown genus)	Tubificinae `BOL049`	Species known from 3 locations, known linear range of 32 km
	Tubificinae `BOL050`	Only known from a single record
	Tubificinae `BOL075`	Common within known linear range of 27 km
	Tubificinae `BOL093`	Common within known linear range of 10 km
	Tubificinae sp.	Higher order identification
	Naididae `BOL097`	Only known from a single record
	Naididae sp. N04-1	Only known from a single location
	Naididae sp. N04-2	Only one specimen known

Higher Order	Lowest Identification	Distribution Range
	Naididae sp. N05	Only one specimen known
Polychaeta		
(order not assigned)		
Aeolosomatidae		
<i>Aeolosoma</i>	<i>Aeolosoma</i> sp. 1 (PSS)	Species widespread
	<i>Aeolosoma</i> sp.	Higher order identification
(unknown order)	Oligochaeta sp.	Higher order identification
Arthropoda		
Arachnida		
Trombidiformes		
Arrenuridae		
<i>Arrenurus</i>	<i>Arrenurus</i> sp. nov. 2 (PSS)	Known from 2 locations 365 km apart
	<i>Arrenurus</i> sp. S03 (PSS)	Known from 1 bore near DeGrey and 2 bores near Paraburdoo, 322 km apart
Hydryphantidae		
<i>Wandesia</i>	<i>Wandesia</i> sp.	Higher order identification
Mideopsidae		
<i>Tiramideopsis</i>	<i>Tiramideopsis</i> `BAC012`	Only known from a single record
Entognatha		
Diplura		
Parajapygidae		
(unknown genus)	Parajapygidae `BDP181`	Only one specimen known
Malacostraca		
Amphipoda		
Bogidiellidae		
<i>Bogidiella</i>	<i>Bogidiella</i> `BAM218`	Common within known linear range of 6 km
	<i>Bogidiella</i> `BAM239`	Known from 2 locations 15 km apart
	<i>Bogidiella</i> `BAM241`	Only one specimen known
(unknown genus)	Bogidiellidae sp.	Higher order identification
Eriopisidae		
<i>Nedsia</i>	<i>Nedsia</i> `hurlberti` group` sp. 1 spine	Species widespread
	<i>Nedsia douglasi</i> s.l.	Only known from a single record
	<i>Nedsia hurlberti</i> s.l.	Species widespread; occurs within project Survey Area
	<i>Nedsia shawensis</i>	Species widespread
	<i>Nedsia</i> sp.	Higher order identification
<i>Pilbarana</i>	<i>Pilbarana</i> `BAM149`	Common within known linear range of 35 km
	<i>Pilbarana</i> `BAM219`	Common within known linear range of 105 km
	<i>Pilbarana</i> sp. B06	Only one specimen known
	<i>Pilbarana</i> group (PSS) s.l.	Widespread group
(unknown genus)	Eriopisidae `BAM149` (sp. 1 group)	Known from 2 locations 4 km apart
	Eriopisidae sp.	Higher order identification
Melitidae	Melitidae `BAM160` (sp. 1 group)	Known from 3 locations 23 km apart
(unknown genus)	Melitidae sp.	Higher order identification
Paramelitidae		
Paramelitidae Genus 2	Paramelitidae Genus 2 `BAM163`	Known from 2 locations 10 km apart
	Paramelitidae Genus 2 `BAM164`	Only one specimen known
	Paramelitidae Genus 2 `BAM209`	Common within known linear range of 27 km
	Paramelitidae Genus 2 `BAM234`	Only known from a single record
	Paramelitidae Genus 2 sp.	Higher order identification

Higher Order	Lowest Identification	Distribution Range
	Paramelitidae Genus 2 sp. B14	Known from 3 locations 100 km apart; one location in project Survey Area
	Paramelitidae Genus 2 sp. B15	Common within known linear range of 33 km
<i>Pilbarus</i>	<i>Pilbarus</i> `BAM145`	Common within known linear range of 26 km
	<i>Pilbarus</i> sp. S02 (PSS)	Known from 3 locations 35 km apart
(unknown genus)	Paramelitidae `BAM144`	Common within known linear range of 17 km
	Paramelitidae `BAM161`	Common within known linear range of 45 km
	Paramelitidae `BAM162`	Known from 3 locations 6 km apart
	Paramelitidae `BAM224`	Common within known linear range of 12 km
	Paramelitidae `BAM238`	Known from 4 locations 13 km apart
	Paramelitidae `BAM248`	Common within known linear range of 18 km
	Paramelitidae `BAM250`	Only one specimen known
	Paramelitidae sp. 2 s.l. (PSS)	Widespread group
	Paramelitidae sp. 7 s.l. (PSS)	Common within known linear range of 198 km
	Paramelitidae sp.	Higher order identification
(unknown family)	Amphipoda sp.	Higher order identification
Isopoda		
Microcerberidae		
<i>Coxicerberus</i>	<i>Coxicerberus</i> sp. B06	Known from 2 bores 300 m apart; known only from project Survey Area
(unknown genus)	Microcerberidae `BIS346-DNA`	Only one specimen known
	Microcerberidae `BIS356` (B01 gp)	Known from 3 bores 30 km apart
	Microcerberidae `BIS357`	Known from 2 bores 26 km apart
	Microcerberidae `BIS545`	Only one specimen known
	Microcerberidae `BIS555`	Only one specimen known
	Microcerberidae `BIS556`	Known from 3 bores 3 km apart
	Microcerberidae `BIS557`	Only one specimen known
	Microcerberidae `BIS579`	Only known from a single location
	Microcerberidae sp. B11	Common within known linear range of 12 km
	Microcerberidae sp. B12	Known from 3 bores 4 km apart
	Microcerberidae sp.	Higher order identification
Tainisopidae		
<i>Pygolabis</i>	<i>Pygolabis</i> sp.	Higher order identification
(unknown family)	Isopoda sp.	Higher order identification
Syncarida		
Bathynellidae		
<i>Bathynella</i>	<i>Bathynella</i> sp. B25	Known from 3 bores, 24 km apart
(unknown genus)	Bathynellidae `BSY200`	Only known from a single record
	Bathynellidae sp.	Higher order identification
Parabathynellidae		
<i>Atopobathynella</i>	<i>Atopobathynella</i> `BSY225`	Common within known linear range of 22 km
	<i>Atopobathynella</i> `BSY236`	Only known from a single location
	<i>Atopobathynella</i> sp.	Higher order identification
<i>Billibathynella</i>	<i>Billibathynella</i> `BSY379`	Only known from a single record
<i>Brevisomabathynella</i>	<i>Brevisomabathynella</i> sp.	Higher order identification
<i>Chilibathynella</i>	<i>Chilibathynella</i> sp.	Higher order identification

Higher Order	Lowest Identification	Distribution Range
<i>Hexabathynella</i>	<i>Hexabathynella</i> `BSY237`	Known from 2 bores 10 km apart
	<i>Hexabathynella</i> `BSY384`	Only one specimen known
	<i>Hexabathynella</i> sp. B10	Known from 3 bores 3 km apart
	<i>Hexabathynella</i> sp. B13	Known from 2 bores 22 km apart
<i>Notobathynella</i>	<i>Notobathynella</i> sp.	Higher order identification
nr <i>Brevisomabathynella</i>	nr <i>Brevisomabathynella</i> sp. B12	Known from 4 bores 10 km apart
1 Parabathynellidae gen. nov.	Parabathynellidae gen. nov. 1 sp. B10	Known from 2 bores 600 m apart
(unknown genus)	Parabathynellidae sp.	Higher order identification
(unknown family)	Bathynellaceae sp.	Higher order identification
	Syncarida sp.	Higher order identification
Maxillopoda		
Calanoida	Calanoida sp.	Higher order identification
Cyclopoida		
Cyclopidae		
<i>Anzyclops</i>	<i>Anzyclops</i> `BCY122`	Known from 2 bores 400 m apart
<i>Diacyclops</i>	<i>Diacyclops</i> `BCY062` (<i>humphreysi</i> s.l.)	Species widespread
	<i>Diacyclops</i> `BCY087`	Species widespread
	<i>Diacyclops</i> `BCY108`	Known from 2 bores 400 m apart
	<i>Diacyclops</i> `BCY109`	Known from 2 bores 9 km apart; one record in project Survey Area
	<i>Diacyclops cockingi</i>	Species widespread; occurs within project Survey Area
	<i>Diacyclops einslei</i>	Species widespread
	<i>Diacyclops humphreysi</i>	Species widespread
	<i>Diacyclops humphreysi</i> s.l.	Widespread group
	<i>Diacyclops scanloni</i>	Species widespread; occurs within project Survey Area
	<i>Diacyclops scanloni</i> s.s.	Only known from a single record
	<i>Diacyclops sobeprolatus</i>	Species widespread
	<i>Diacyclops sobeprolatus</i> s.s.	Only one specimen known
	<i>Diacyclops</i> sp. B01 = <i>Diacyclops</i> sp. 4 (PSS)	Widespread group
	<i>Diacyclops</i> sp.	Higher order identification
<i>Dussartyclops</i>	<i>Dussartyclops</i> (<i>Dussartyclops</i>) <i>mortoni</i>	Known from 4 locations 276 km apart
	<i>Dussartyclops</i> nr <i>uniarticulatus</i>	Higher order identification
<i>Dussartyclops</i> 2222	<i>Dussartyclops</i> 2222 `BCY093`	Known from 2 locations 17 km apart
<i>Halicyclops</i>	<i>Halicyclops calm</i>	Species widespread
	<i>Halicyclops rochai</i>	Species widespread
<i>Meridiacyclops</i>	<i>Meridiacyclops baylyi</i>	Species widespread
<i>Mesocyclops</i>	<i>Mesocyclops brooksi</i>	Species widespread
	<i>Mesocyclops holinskae</i>	Common within known linear range of 9 km
	<i>Mesocyclops notius</i>	Species widespread
	<i>Mesocyclops</i> nr <i>brooksi</i>	Only known from a single record
	<i>Mesocyclops</i> sp.	Higher order identification
<i>Metacyclops</i>	<i>Metacyclops mortoni</i>	Species widespread
	<i>Metacyclops</i> sp.	Higher order identification
<i>Microcyclops</i>	<i>Microcyclops varicans</i>	Species widespread
nr <i>Goniocyclops</i> (1222)	nr <i>Goniocyclops</i> (1222) `BCY061`	Known from 2 bores 17 km apart
<i>Orbuscyclops</i>	<i>Orbuscyclops westaustraliensis</i>	Species widespread
<i>Pescecyclops</i>	<i>Pescecyclops</i> `BCY065`	Known from 2 bores 20 km apart
	<i>Pescecyclops</i> `BCY066`	Only known from a single record

Higher Order	Lowest Identification	Distribution Range
	<i>Pescecyclops</i> `BCY114`	Known from 2 bores 14 km apart
<i>Thermocyclops</i>	<i>Thermocyclops</i> `BCY103`	Only one specimen known
	<i>Thermocyclops aberrans</i>	Species widespread
	<i>Thermocyclops decipiens</i>	Species widespread
(unknown genus)	Cyclopidae Unk Gen `BCY110`	Species widespread
	Cyclopidae sp.	Higher order identification
(unknown family)	Cyclopoida sp.	Higher order identification
Harpacticoida		
Ameiridae		
<i>Megastygonoicrella</i>	<i>Megastygonoicrella</i> `BHA349`	Common within known linear range of 11 km
	<i>Megastygonoicrella bispinosa</i>	Species widespread
	<i>Megastygonoicrella ecowisei</i>	Species widespread
	<i>Megastygonoicrella</i> sp. B05	Common within known linear range of 43 km
	<i>Megastygonoicrella trispinosa</i>	Species widespread; occurs within project Survey Area
	<i>Megastygonoicrella trispinosa</i> s.s.	Only known from a single record
	<i>Megastygonoicrella unispinosa</i>	Species widespread
	<i>Megastygonoicrella</i> sp.	Higher order identification
<i>Parapseudoleptomesochra</i>	<i>Parapseudoleptomesochra</i> `BHA443`	Only one specimen known
<i>Stygonoicrella</i>	<i>Stygonoicrella</i> sp.	Higher order identification
Canthocamptidae		
<i>Elaphoidella</i>	<i>Elaphoidella humphreysi</i>	Species widespread; occurs within project Survey Area
	<i>Elaphoidella humphreysi</i> s.l.	Species widespread
	<i>Elaphoidella humphreysi</i> s.s.	Only one specimen known
	<i>Elaphoidella</i> sp. B09	Common within known linear range of 21 km
(unknown genus)	Canthocamptidae `BHA267`	Only one specimen known
	Canthocamptidae sp.	Higher order identification
Harpacticidae		
(unknown genus)	Harpacticidae sp.	Higher order identification
Miraciidae		
<i>Schizopera</i>	<i>Schizopera</i> sp.	Higher order identification
Parastenocarididae		
Parastenocarididae n. gen.	Parastenocarididae n. gen. `BHA259`	Only one specimen known
	Parastenocarididae n. gen. `BHA265`	Known from 2 bores 48 km apart
<i>Parastenocaris</i>	<i>Parastenocaris</i> `BHA266`	Known from 2 bores 200 m apart
	<i>Parastenocaris</i> `BHA268`	Only known from a single record
	<i>Parastenocaris</i> `BHA393`	Only one specimen known
	<i>Parastenocaris</i> `BHA397`	Only one specimen known
	<i>Parastenocaris</i> `BHA444`	Only known from a single record
	<i>Parastenocaris jane</i>	Species widespread
	<i>Parastenocaris</i> sp.	Higher order identification
(unknown genus)	Parastenocarididae sp.	Higher order identification
(unknown family)	Harpacticoida sp.	Higher order identification
(unknown order)	Copepoda sp.	Higher order identification
Ostracoda		
Podocopida		
Candonidae		
? <i>Areacandona</i>	? <i>Areacandona</i> iuno	Species widespread

Higher Order	Lowest Identification	Distribution Range
<i>Areacandona</i>	<i>Areacandona</i> `BOS1625`	Common within known linear range of 19 km
	<i>Areacandona</i> `BOS1653`	Common within known linear range of 18 km
	<i>Areacandona</i> `BOS579`	Common within known linear range of 27 km
	<i>Areacandona akatallele</i>	Species widespread
	<i>Areacandona fortescueiensis</i>	Species widespread
	<i>Areacandona incogitata</i>	Species widespread
	<i>Areacandona iuno</i>	Species widespread; occurs within project Survey Area
	<i>Areacandona jessicae</i>	Species widespread
	<i>Areacandona mulgae</i>	Species widespread
	<i>Areacandona</i> nr <i>iuno</i>	Higher order identification
	<i>Areacandona</i> nr <i>korallion</i>	Higher order identification
	<i>Areacandona quasilepte</i>	Species widespread
	<i>Areacandona yuleae</i>	Common within known linear range of 120 km
	<i>Areacandona</i> sp.	Higher order identification
<i>Candonopsis</i>	<i>Candonopsis kimberleyi</i>	Common within known linear range of 48 km
	<i>Candonopsis pilbarae</i>	Known from 4 locations 290 km apart
	<i>Candonopsis tenuis</i>	Species widespread
<i>Deminutiocandona</i>	<i>Deminutiocandona</i> nr <i>halsei</i>	Higher order identification
<i>Humphreyscandona</i>	<i>Humphreyscandona fovea</i>	Species widespread
	<i>Humphreyscandona waldockae</i>	Species widespread
	<i>Humphreyscandona</i> sp.	Higher order identification
<i>Leicacandona</i>	<i>Leicacandona</i> `BOS1343`	Species widespread
	<i>Leicacandona</i> `BOS1354`	Only known from a single record
	<i>Leicacandona</i> `BOS1356`	Only known from a single location
	<i>Leicacandona</i> `BOS1357`	Only known from a single record
	<i>Leicacandona gyralea</i>	Only known from a single record
	<i>Leicacandona halsei</i>	Known from 2 locations 55 km apart
	<i>Leicacandona lite</i>	Known from 2 locations 15 km apart
	<i>Leicacandona mookae</i>	Known from 2 locations 65 km apart
<i>Meridiescandona</i>	<i>Meridiescandona lucerna</i>	Species widespread
(unknown genus)	<i>Candoninae</i> sp.	Higher order identification
	<i>Candonidae</i> `BOS1292`	Known from 3 locations 20 km apart
	<i>Candonidae</i> `BOS1657`	Only known from a single record
	<i>Candonidae</i> `BOS1332`	Common within known linear range of 80 km
	<i>Candonidae</i> `BOS1333`	Only known from a single record
<i>Candonidae</i> sp.	Higher order identification	
Cyprididae		
<i>?Ampullacypris</i>	<i>?Ampullacypris</i> `BOS1341`	Common within known linear range of 12 km
<i>Bennelongia</i>	<i>Bennelongia strellyensis</i>	Only known from a single record
<i>Cyprretta</i>	<i>Cyprretta</i> `BOS1353`	Only known from a single record
	<i>Cyprretta seurati</i>	Species widespread; occurs within project Survey Area
	<i>Cyprretta seurati</i> sensu karanovic	Known from 4 locations 23 km apart
	<i>Cyprretta</i> sp.	Higher order identification
<i>Cypridopsis</i>	<i>Cypridopsis</i> `BOS1337`	Only known from a single record
	<i>Cypridopsis</i> sp.	Higher order identification
<i>Cyprinotus</i>	<i>Cyprinotus kimberleyensis</i> s.l.	Species widespread

Higher Order	Lowest Identification	Distribution Range
	<i>Cyprinotus</i> sp.	Higher order identification
<i>Heterocypris</i>	<i>Heterocypris</i> sp.	Higher order identification
<i>Ilyodromus</i>	<i>Ilyodromus</i> sp.	Higher order identification
<i>Riocypris</i>	<i>Riocypris fitzroyi</i>	Species widespread
<i>Sarscypridopsis</i>	<i>Sarscypridopsis aculeata</i>	Species widespread
	<i>Sarscypridopsis</i> sp.	Higher order identification
<i>Stenocypris</i>	<i>Stenocypris major</i>	Species widespread
	<i>Stenocypris malcolmsoni</i>	Species widespread
<i>Strandesia</i>	<i>Strandesia</i> sp.	Higher order identification
(unknown genus)	Cyprididae sp.	Higher order identification
Darwinulidae		
<i>Darwinula</i>	<i>Darwinula</i> sp.	Higher order identification
<i>Penthesilenula</i>	<i>Penthesilenula brasiliensis</i>	Species widespread; occurs within project Survey Area
<i>Vestalenula</i>	<i>Vestalenula marmonieri</i>	Species widespread
	<i>Vestalenula matildae</i>	Species widespread
(unknown genus)	Darwinulidae sp.	Higher order identification
Ilyocyprididae		
<i>Ilyocypris</i>	<i>Ilyocypris</i> sp.	Higher order identification
Limnocytheridae		
<i>Gomphodella</i>	<i>Gomphodella</i> `2` (PSS)	Only known from a single record
	<i>Gomphodella pilbarensis</i>	Species widespread
	<i>Gomphodella</i> sp.	Higher order identification
<i>Limnocythere</i>	<i>Limnocythere dorsosicula</i>	Species widespread
	<i>Limnocythere stationis</i>	Species widespread
(unknown order)	Ostracoda `BOS1293`	Only known from a single record
	Ostracoda `BOS645`	Only one specimen known
	Ostracoda sp. unident.	Higher order identification; within project Survey Area
Nematoda		
(unknown class)	Nematoda sp. 01 (rat-tailed gp) (PSS)	Species widespread
	Nematoda sp. 04 (PSS)	Known from 2 locations 250 km apart
	Nematoda sp. 17 (PSS)	Only one specimen known
	Nematoda spp.	Higher order identification
Platyhelminthes		
Turbellaria		
(unknown order)	Turbellaria sp.	Higher order identification
Rotifera		
Bdelloidea		
(unknown order)	Bdelloidea sp. 2:2	Species widespread
	Bdelloidea sp. 3:2	Species widespread
	Bdelloidea sp. 3:3	Species widespread

Appendix 3. Troglifauna sites sampled

Bore ID	Sample Date	Latitude, Longitude	Water Level (mbgl)	End of Hole (mbgl)
TARC007	13/05/2025	-20.657524, 118.927597	DRY	6
TARC014	13/05/2025	-20.655803, 118.927764	11	288
TARC017	13/05/2025	-20.660294, 118.923575	8	156
TARC034	13/05/2025	-20.658681, 118.927147	DRY	5
TARC040	13/05/2025	-20.659292, 118.924361	15	198
TARC056	13/05/2025	-20.657638, 118.926711	8	216
TARC060	13/05/2025	-20.65633, 118.926434	11	225
TARC065	13/05/2025	-20.657522, 118.924959	13	150
TARC066	13/05/2025	-20.656949, 118.925674	11	192
TARC114	13/05/2025	-20.681465, 118.91486	8	102
TARC344D	13/05/2025	-20.679642, 118.914052	11	162
TARC416	13/05/2025	-20.659199, 118.927352	12	60
TARC429	13/05/2025	-20.658967, 118.921626	18	150
TARC430	13/05/2025	-20.658889, 118.921924	11	20
TARC018	14/05/2025	-20.665682, 118.924223	12	150
TARC129	14/05/2025	-20.667516, 118.918072	14	150
TARC130	14/05/2025	-20.667501, 118.918843	11	288
TARC132	14/05/2025	-20.668898, 118.920417	21	336
TARC137	14/05/2025	-20.670396, 118.918906	40	294
TARC138	14/05/2025	-20.671823, 118.917207	10	120
TARC147	14/05/2025	-20.667496, 118.920227	13	366
TARC149	14/05/2025	-20.666067, 118.919608	13	300
TARC158	14/05/2025	-20.666055, 118.918859	16	150
TARC220D	14/05/2025	-20.671152, 118.920131	15	126
TARC236	14/05/2025	-20.668629, 118.91894	40	270
TARC247	14/05/2025	-20.666283, 118.920095	13	348
TARC251	14/05/2025	-20.664779, 118.920649	16	402
TARC260	14/05/2025	-20.672149, 118.92002	15	342
TARC262D	14/05/2025	-20.661866, 118.922739	15	150
TARC318D	14/05/2025	-20.673119, 118.918262	10	102
TARC349D	14/05/2025	-20.678274, 118.916047	1	180
TARC358D	14/05/2025	-20.677606, 118.916629	15	180
TARC381	14/05/2025	-20.682279, 118.912224	11	72
TARC384	14/05/2025	-20.665306, 118.924971	23	402
TARC391D	14/05/2025	-20.675595, 118.917676	12.5	156
TARC395D	14/05/2025	-20.674859, 118.917255	11	150
TARC398	14/05/2025	-20.661351, 118.926322	13	342
TARC405	14/05/2025	-20.664152, 118.924425	19	378
TARC408	14/05/2025	-20.664916, 118.924209	22	288
TARC410	14/05/2025	-20.664659, 118.925097	DRY	6

Appendix 4: Stygofauna sites sampled and water chemistry results

Bore ID	Sample Date	Latitude, Longitude	Water Level (mbgl)	End of Hole (mbgl)	EC (µs/cm)	pH	Temp (°C)
Bore B	12/05/2025	-20.646589, 118.931711	18.46	36	738.2	7.32	27.2
Bore C	12/05/2025	-20.645932, 118.931434	9.87	38	895.1	7.29	31.4
Solar Mill	12/05/2025	-20.670935, 118.922393	11.32	37	3370	7.03	26.2
TAMB001	12/05/2025	-20.672552, 118.915887	11.98	36	3320	7.29	27.5
TAMB002	12/05/2025	-20.673078, 118.918926	13.88	36	3280	7.33	27.4
TAMB003	12/05/2025	-20.666289, 118.915415	11.28	36	7990	6.94	28.5
TAMB004	12/05/2025	-20.670086, 118.923169	21.22	42	2850	7.16	24.3
TAMB006	12/05/2025	-20.669215, 118.914636	11.88	36	2960	6.91	26.6
TAWB004	12/05/2025	-20.667499, 118.914836	8	60	3330	6.91	26
TAWB006	12/05/2025	-20.679115, 118.916142	14.91	102	2720	7.24	30.2
TAWB007	12/05/2025	-20.667316, 118.914017	13.03	48	3540	6.84	28
TAMB005	13/05/2025	-20.664345, 118.921254	20.53	44	1336	6.95	25.2
TARC058	13/05/2025	-20.656094, 118.92794	30	210	855.8	7.13	26.7
TARC351	13/05/2025	-20.679611, 118.914061	10	288	3230	6.85	24.7
TAWB003	13/05/2025	-20.66383, 118.91698	8.98	204	4040	7.27	24.2
TARC387	14/05/2025	-20.658584, 118.923025	27	210	1315	6.85	29.9
TARC421	14/05/2025	-20.658212, 118.923236	18	240	1094	6.85	29.9

Appendix 5: Map of all sites sampled during May 2025 Survey

