Bennelongia
Environmental Consultants

Round Hill Iron Ore Project: Baseline Stygofauna Survey

Prepared for:

HanRoy

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Final Report

Short-Range Endemics | Subterranean Fauna

Waterbirds | Wetlands

Round Hill Iron Ore Project: Baseline Stygofauna Survey

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EXECUTIVE SUMMARY

HanRoy, on behalf of Hancock Prospecting Pty Ltd, is undertaking a concept study to determine options for the proposed development of the Round Hill Iron Ore Project (the Project). Round Hill is situated in the Hamersley subregion of the Pilbara IBRA region approximately 40 km west of Newman and 110 km south-west of HanRoy's Roy Hill Iron Ore Mine (Figure 1). It is proposed to mine iron ore at two open, above-water table mine pits, with the option of future below-water table mining. The proposal includes a bore field at a location yet to be determined north of the eastern pit to provide water for processing and supporting infrastructure.

Subterranean fauna can be a key factor in the assessment of projects by the Environmental Protection Authority (EPA). HanRoy has contracted Bennelongia Environmental Consultants to undertake an assessment of subterranean fauna in the Project and surrounding area to determine whether any species are likely to be impacted by the proposed development, following to the relevant EPA guidelines for subterranean fauna study.

A review of the geological and hydrogeological values showed that the prospectivity for stygofauna in the regional area around the Project is high, although the large depth (mostly >40 mbgl) to water might be expected to restrict stygofauna occurrence in the Project area itself. Applying accepted ideas about stygofauna occurrence, the stygofauna community in the alluvium and colluvium to the north of the Project, which contain a potential bore field location, would be expected to be relatively rich.

Two rounds of survey were conducted in the Project area from 24-25 July and 28-29 October 2024. During the survey, 23 stygofauna samples were collected from 14 bores or drillholes. Water physico-chemistry was measured at the time of sampling. Some troglofauna sampling was undertaken at the same time as stygofauna sampling and the stygofauna species collected from this program were included in the results section of this report.

Twenty species of stygofauna were collected during the sampling program, with four of the species currently known only from the Project area. Available information suggests that contrary to the documented occurrence of most stygofauna communities, the stygofauna community is likely to occur in mineralised Brockman Iron Formation, particularly in fractures that contain relatively large spaces in which stygofauna species can live. All four of the species known only from the Project area are predicted to have ranges extending beyond the Project area into local or regional areas surrounding the mine pits. It should be noted, however, that this report deals only with proposed above-water table mining.

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1. INTRODUCTION

HanRoy, on behalf of Hancock Prospecting Pty Ltd, is undertaking a concept study to determine options for the proposed development of the Round Hill Iron Ore Project (the Project). Round Hill is situated in the Hamersley subregion of the Pilbara IBRA region approximately 40 km west of Newman and 110 km south-west of HanRoy's Roy Hill Iron Ore Mine (Figure 1). It is proposed to mine iron ore at two open, above-water table mine pits. The proposal includes a bore field north of the eastern pit to provide water for processing and supporting infrastructure.

HanRoy has contracted Bennelongia Environmental Consultants to undertake an assessment of subterranean fauna in the Project and surrounding area to determine whether any species are likely to be impacted by the proposed development, according to the relevant Environmental Protection Authority guidelines for subterranean fauna (EPA 2016, 2018, 2021).

2. STYGOFAUNA FRAMEWORK

The term 'subterranean fauna' encompasses two distinct animal communities: the air-breathing troglofauna that exist in the vadose zone between the surface and the water table; and the aquatic stygofauna that live within groundwater habitats. Only stygofauna are considered in this report.

Due to relatively uniform selection pressures in underground habitats, stygofauna typically exhibit many convergent morphological and physiological characteristics, such as reduced or absent eyes, loss of pigmentation, a shift towards K-selected breeding strategies and decreased metabolism (Gibert and Deharveng 2002). The overwhelming majority of stygofauna species in Western Australia are invertebrates but at least two fishes have been found. Stygofauna species for which the entire lifecycle occurs below ground are classed as stygobites, while stygofauna species that either have some aboveground populations or for which individuals may visit the surface in some situations are classed as stygophiles. Surface occurrence of stygophile species gives them much greater opportunity for population dispersal and, therefore, larger expected ranges than stygobitic species.

Subterranean fauna species contribute markedly to the overall biodiversity of Australia. The Pilbara and Yilgarn regions of Western Australia in particular are recognised as places of globally significant stygofauna populations, with more than 1300 stygofauna species estimated to occur in the Pilbara (Halse 2018), the majority of which are undescribed. Many stygofauna species are short range endemics (SREs), with much smaller ranges than Harvey's (2002) SRE range criterion of 10,000 km^2. 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 stygofauna species are susceptible to anthropogenic threats, particularly groundwater abstraction.

2.1. Prospective Habitat

Stygofauna communities occur frequently in palaeovalleys and tend to be richest in calcrete and alluvial aquifers (Humphreys 2001), while less transmissive geologies such as banded iron formation (BIF), saprolite, mafic and ultramafic usually contain relatively depauperate communities (ecologia 2009; GHD 2009). Channel iron deposit, detrital iron deposit and greenstone formations sometimes containing rich communities, as can some extensively fractured mafic and iron formations. It is unusual for silt and clay to support stygofauna because of the lack of interstitial spaces and the associated absence of an aquifer (Korbel and Hose 2011). Stygofauna occur in varying salinities, but are mostly found in fresh to moderately saline waters with conductivities of less than c. 17,000 mg/L in the Pilbara and 42,000 mg/L in the Yilgarn (Halse 2018). Vertical connectivity of habitat plays an important role in facilitating the transport of carbon and nutrients from the surface to maintain stygofauna populations, while lateral connectivity of habitat and the network of cracks, fissures and voids is crucial to underground dispersal

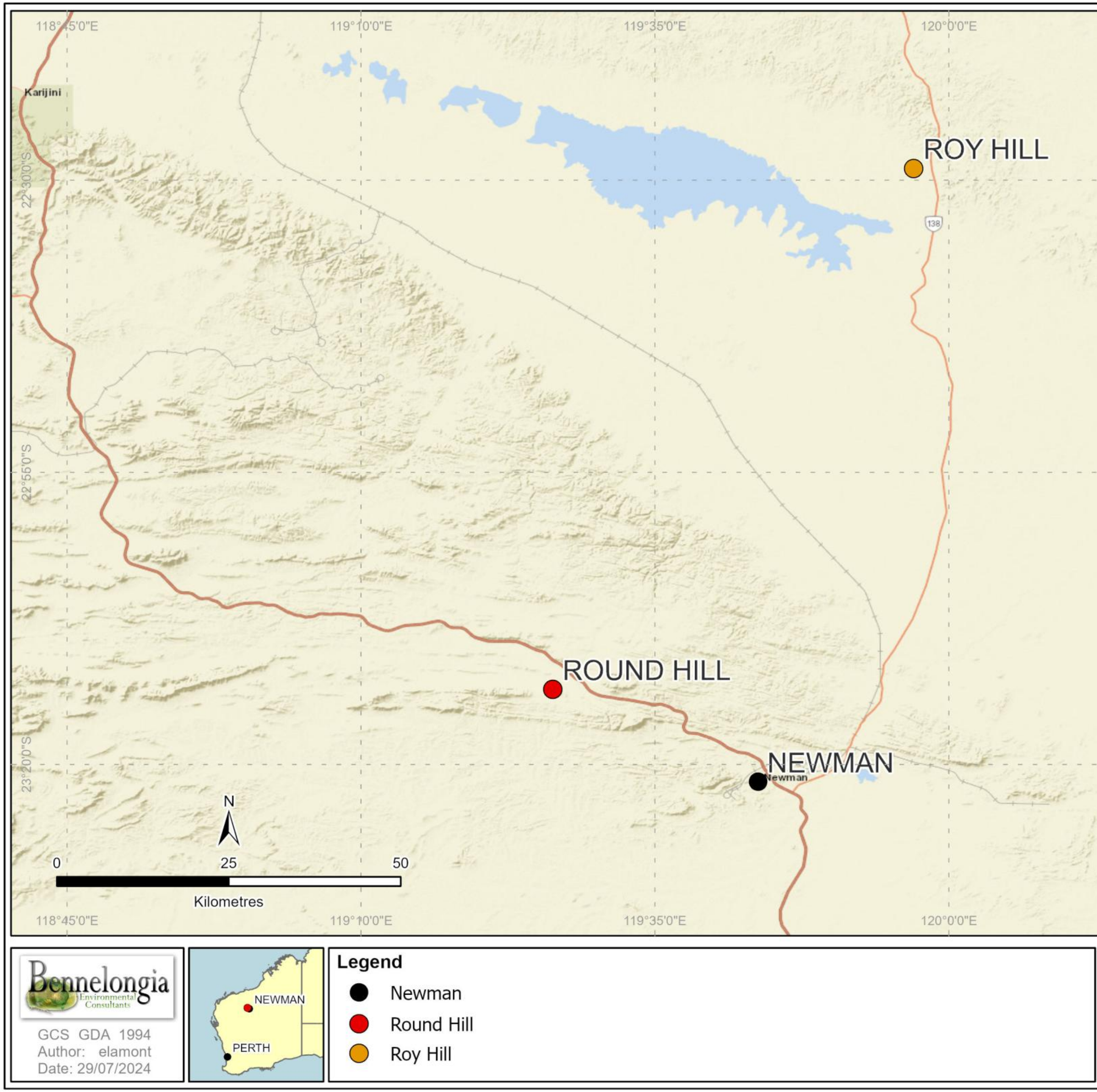


Figure 1. Location of the Round Hill Iron Ore Project

(Bennelongia 2015). Depth to the water table affects the occurrence of both stygofauna and troglofauna, with stygofauna usually most abundant where the water table is <30mbgl (Halse *et al*. 2014)..

2.2. Conservation Legislation

Native flora and fauna in Western Australia are protected at both State and Commonwealth levels. At the state level, the *Biodiversity Conservation Act 2016* (BC Act) provides a legal framework for protection of species, particularly for species listed as threatened by the Minister for the Environment. At a national level, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) also protects species listed as threatened. However, the threatened fauna list of the EPBC Act currently does not include inland stygofauna. In addition to the formal list of threatened species, under the BC Act in in Western Australia the Department of Biodiversity, Conservation and Attractions (DBCA) maintains a list of priority fauna species that are of conservation importance but, for various reasons, 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 informally recognises communities of potential conservation concern, but for which there is little information, as priority ecological communities (PECs). The list of stygofauna-based PECs is relatively large.

3. PROJECT SETTING

The Round Hill Project is located in the Hamersley Basin, within the archaean Pilbara Craton, which characteristically has surface geology dominated by banded iron formation (BIF) sedimentary rocks interlaced with intrusions of chert, dolomite, siltstone shales, and a mixture of colluvial and alluvium Cainozoic deposits (McKenzie *et al*. 2009).

3.1. Desktop Review

A desktop review by Bennlongia (2024) showed that 311 species or morphospecies of stygofauna have been collected within a 100km x 100km search area encompassing the Project. No species of stygofauna has been collected historically from the Project area but this is likely due to a lack of survey effort in the Project area rather than an absence of subterranean fauna. The investigation showed that the sub-region around the Project supports rich stygofauna and troglofauna communities. No Threatened or Priority stygofauna species are known from the search area but one TEC (at Ethel Gore) and one PEC (at Weeli Wolli Spring) occur. Both communities are about 40 km from the Project, however.

3.2. Geology and Hydrogeology

The local stratigraphy of the Project area and direct surrounds is dominated by the Dales Gorge Member of the Brockman Iron Formation, with predominant macro-banding of BIF and shale and additional meso-and micro-banding of iron-rich and chert rich layers (Trendal 1965; Martin 2021). All bedrock geology of the Project area belongs to the Brockman Iron Formation, which consists of metamorphosed BIF, chert, mudstone and siltstone combinations (Figure 2). Bedrock surrounding the Project area includes the older Mount McRae Shale Formation and Wittenoom Formation directly to the north and the younger Weeli Wolli Formation to the south and east (Figure 2). Overlaying the Brockman Formation (Hb) at the Project is a valley-fill deposit of partly consolidated colluvium (Czc), and extensive areas of sheetwash plain consisting of combinations of colluvium and alluvium (Qw) (Tyler 1994; Figure 3).

Hydrogeological mapping undertaken by HanRoy suggests significant aquifers in the Project and its vicinity occur in in the tertiary and quaternary alluvium and colluvium mostly to the north of the Project and in mineralised Brockman unit that contains pisolites, BIF and clay. Transmissivity in Whaleback Shale and unmineralized Brockman surrounding the Project is low (Figure 4). The Mt Sylvia and Mt McRae Shale to the north of the Project form an aquitard. Depth to groundwater in the Project area is 35 to 45 m below ground level (mbgl).

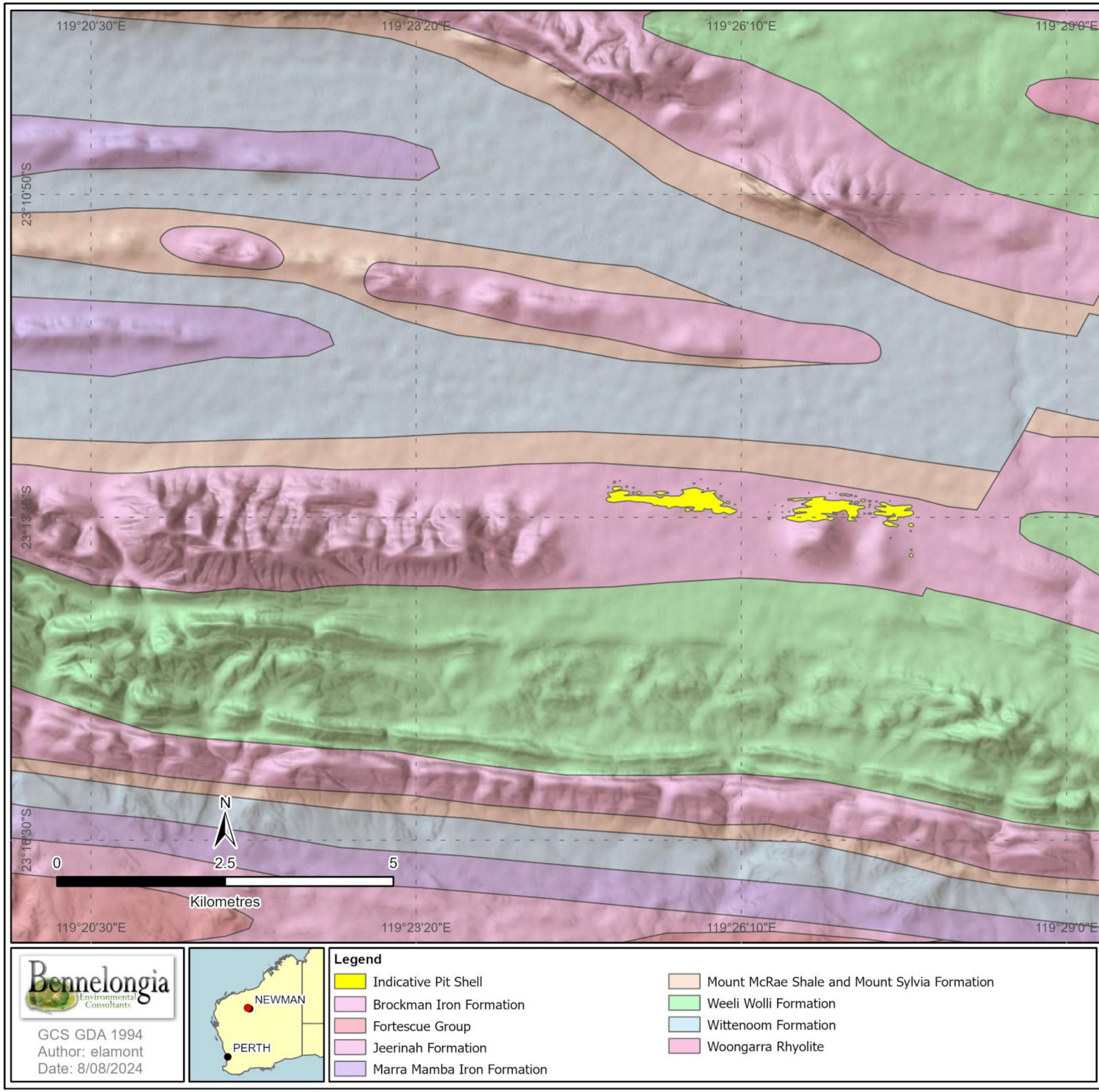
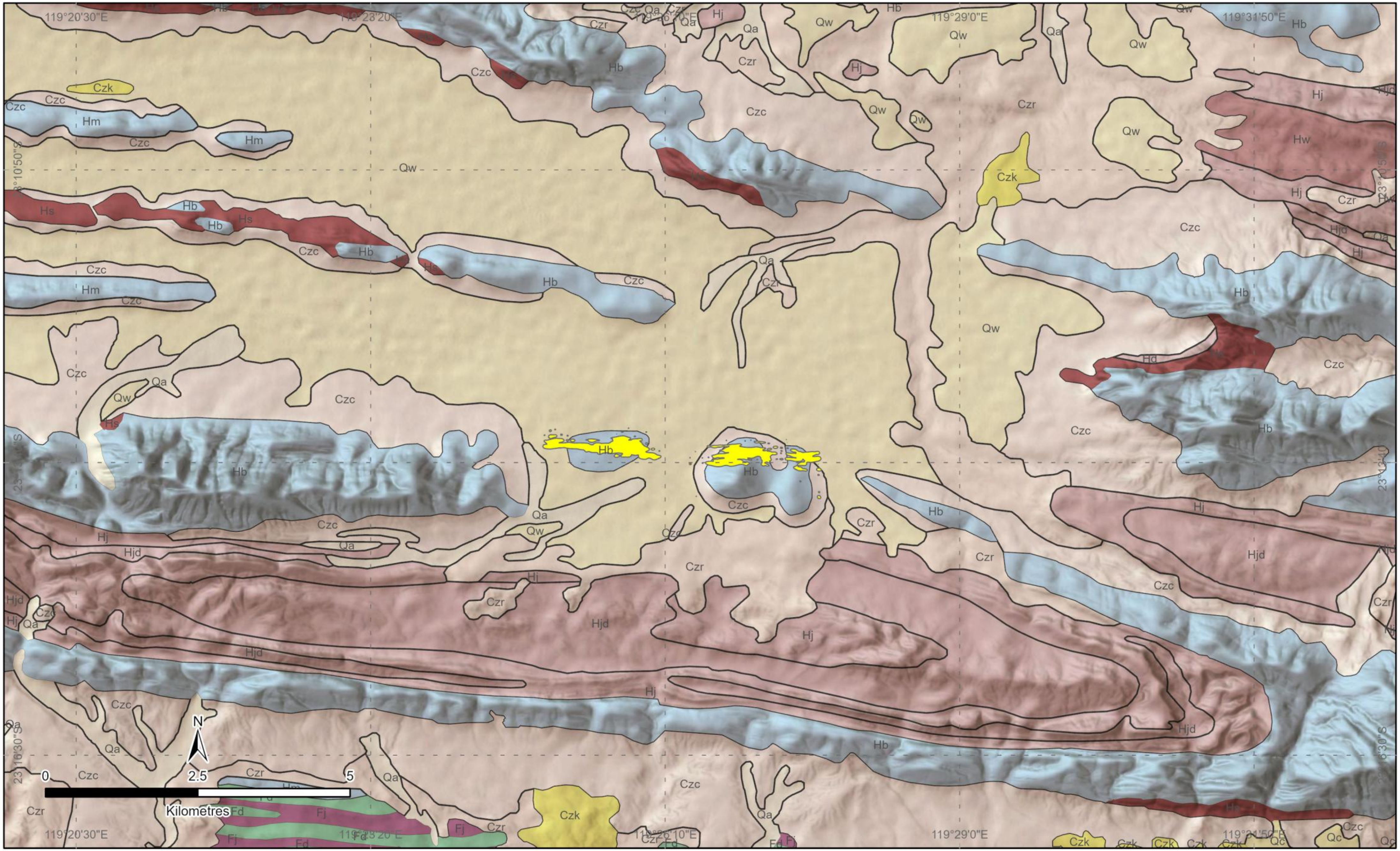


Figure 2. Bedrock geology in and around the project area



GCS GDA 1994
Author: elamont
Date: 8/08/2024

Legend

- Indicative Pit Shell
- Qa (Alluvium)
- Qw (Alluvium and colluvium)
- Qc (Colluvium)
- Czc (Colluvium)
- Czr (Laterite)
- Czk (Calcrete)
- Hw (Woongarra Volcanics)
- Hj (Weeli Wolli Formation)
- Hjd (Weeli Wolli Formation - Medium)
- Hb (Brockman Iron Formation)
- Hs (Mount McRae Shale)
- Hd (Wittendom Dolomite)
- Hm (Marra Mamba Iron Formation)
- Fd (Fortescue Group)
- Fj (Jeerinah Formation)

Figure 3. Surface geology in and around the project area

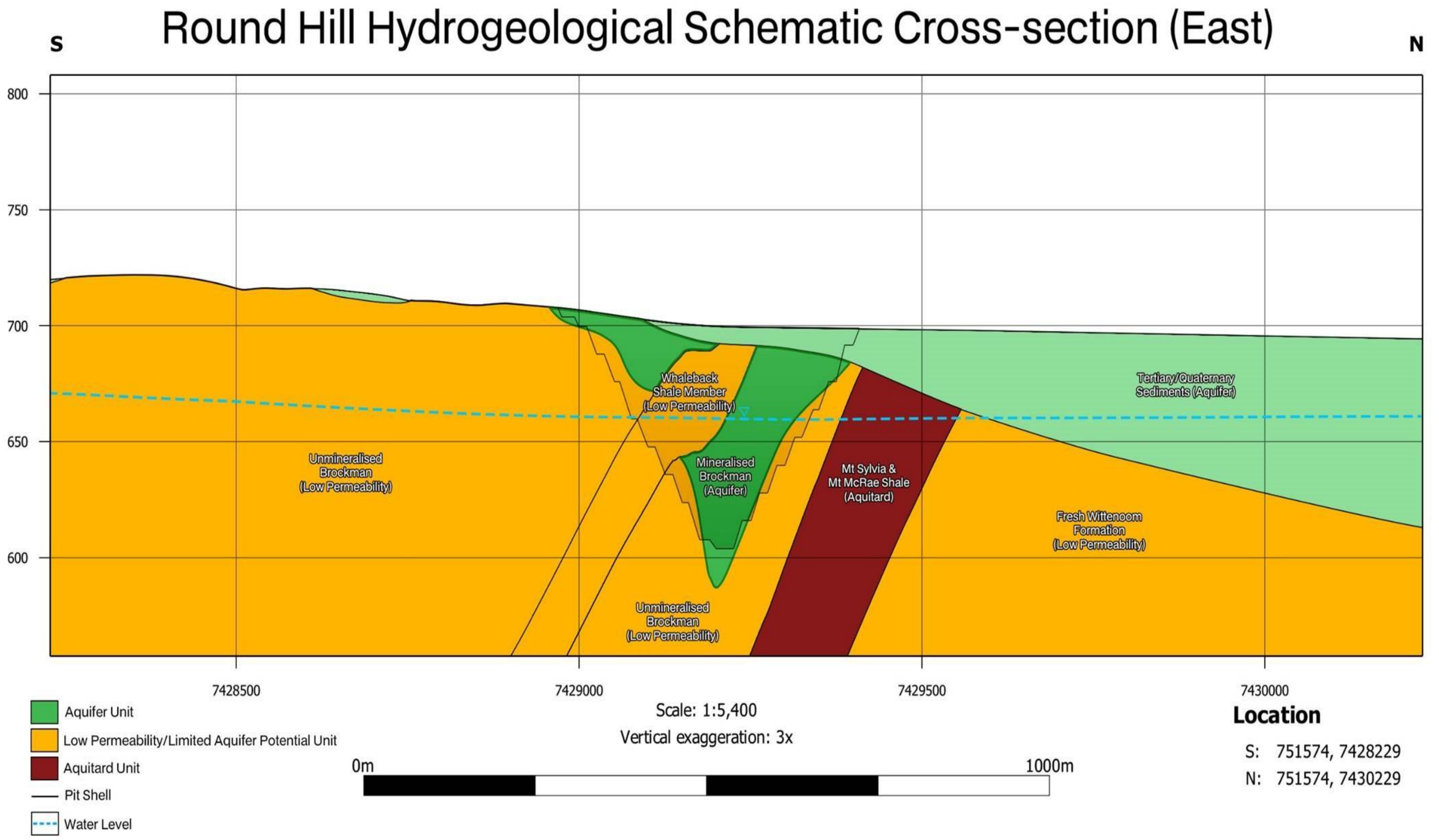


Figure 4. Round Hill Proposed Pit Hydrogeological Schematic Cross-section

3.3. Suitability for Stygofauna

The potentially prospective aquifer habitats for stygofauna in the Project area are considered to be:

- Mineralised BIF –May be **moderately prospective** for stygofauna if fracturing is extensive.
- Colluvium below water table – Considered **potentially prospective** for stygofauna depending on connectivity with alluvium and local transmissivity.
- Alluvium– Considered **highly prospective** for stygofauna due to porous nature, leaving numerous spaces for animals to live in and move through.

Geologies in the Project area that could act as barriers and confine stygofauna distributions, depending on position in landscape, are considered to be:

- Unmineralised BIF – Considered **not prospective** for stygofauna owing to impervious nature, without subterranean spaces.
- Whaleback Shale Member – Considered **not prospective** for stygofauna.
- Mt Sylvia and Mt Mcrae Shale - Considered **not prospective.** These formations may form an aquitard and limit the occurrence of stygofauna in aquifers below or downstream of them.

Bennelongia (2024) concluded that while the prospectivity for stygofauna in the regional area around the Project is high, based on the extensive occurrence of BIF geology, the groundwater under the Project mine pits probably supports, at most, a relatively depauperate stygofauna assemblage. The aquitard formed by Mt Sylvia and Mt McRae Shale to the north of the mine pits and unmineralized BIF to the south (Figure 4) may have created barriers to movement of stygofauna into the Project area. Additionally, the large depth to groundwater in the pit area is likely to limit the richness and diversity of any stygofauna community present (see Halse 2018). However, the stygofauna community in the alluvium and colluvium aquifer surrounding the pits, especially to the north, which is a potential bore field location, is likely to have greater prospectivity for stygofauna than in the mine pit area (Figure 3).

Following the desktop review, field survey was undertaken to establish the extent of the stygofauna community present at the Project

4. SURVEY METHODS

4.1. Survey Timing and Effort

Two rounds of stygofauna survey were conducted in the Project area on 24-25 July and 28-29 October 2024. Twenty-three samples were collected from 14 bores or drillholes. Water physico-chemistry was measured at the time of sampling. During the same sampling periods some of the holes were scraped for troglofauna and occasionally this process collected additional stygofauna species, which are included in the results shown in section 5.

4.2. Field Sampling

Sampling methods followed those recommended by EPA (2016, 2021). Stygofauna were sampled at each hole using weighted plankton nets. At every hole, six hauls were taken, three using a 50-µm mesh net and three with a 150-µm mesh net, with the net being lowered to the bottom of the hole and oscillated briefly to agitate benthos (increasing the likelihood of collecting benthic species) before being slowly retrieved. Contents of the net were transferred to a 125-ml polycarbonate vial after each haul, flushed with bore water to reduce fine sediment content, preserved in 100% ethanol and refrigerated at a constant 4 °C. Nets were washed between holes to minimise between-hole contamination.

At each hole, depth to the water table was measured using a Solinst water level meter and a bailer was used to retrieve a water sample from the top metre of groundwater. Temperature, electrical conductivity, and pH were measured using a WP 81 field meter. Depth to the end of the hole was also measured.

4.3. Laboratory Procedures

In the laboratory, stygofauna samples were elutriated to separate out heavy sediment particles and sieved into size fractions using 250-, 90- and 53-µm screens. All samples were sorted under a dissecting microscope and specimens were identified to species level where possible using available keys, species descriptions and, for undescribed species, characters in those keys and descriptions. Identification often required animals to be dissected and examined under a differential interference contrast compound microscope. Undescribed species were assigned species codes (suffixed `B…`) to enable them to be tracked when compiling information on distributions in this and other surveys.

4.3.1. DNA Sequencing

During the identification process, unidentifiable specimens (e.g. juvenile or damaged specimens) were flagged for DNA sequencing. Five specimens from the Project area were successfully identified and sequenced. Depending on the size of the specimens, legs or whole animals were used and micro-pestled for DNA extractions using a Qiagen DNeasy Blood and Tissue kit (Qiagen 2006), with final elute volumes of 100 µL. The mitochondrial cytochrome oxidase I (COI) gene was targeted for polymerase chain reaction (PCR) amplifications using primer combination jgLCO1490:jgHCO2198 (Geller et al. 2013). Next, dual-direction, Sanger sequencing was undertaken for PCR products by the Australian Genome Research Facility (AGRF). Sequences returned were edited and aligned in Geneious Prime v2022.2.2 (https://www.geneious.com). 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, also in Geneious v2022.2.2. Publicly available sequences on GenBank were included in phylogenetic analysis to provide a framework for assessing intra- versus interspecific variation and determining species boundaries. A full summary table of the genetic sequencing results can be found in Appendix 3.

5. RESULTS

5.1. Water Chemistry and Depth

The water table in holes surveyed from 33.3 to 48.9 mbgl, with a median of 40.9 mbgl. Salinity was fresh, ranging from 590 to 798 µS/cm, with a median of 689 µS/cm. Groundwater was neutral, with pH ranging from 6.52 to 6.72 and having a median of 6.67.

5.2. Stygofauna

The Project area was found to contain a moderately rich stygofauna community, with 23 species or morphospecies of stygofauna being collected within the surveyed area (Appendix 2, Table 1). Stygofauna groups collected include roundworms (Nematoda), earthworms (Oligochaeta), ostracods (Ostracoda), copepods (Copepoda), syncarids (Syncarida), amphipods (Amphipoda), and slaters (Isopoda). Nematodes were collected in the survey but are not considered in environmental impact assessments (EPA 2016); all records of nematodes collected here are counted as a single species.

The species list is collated from the specimens collected in stygofauna net hauls, as well as the bycatch from troglofauna scrapes that entered the water table.

Table 1. Stygofauna species collected during field survey.
Occasionally identification is at higher level than species level but nevertheless all records represent occurrence of separate species.

Higher Classification	Lowest Identification	No of Animals
Nematoda	Nematoda spp.	7
Annelida		

Higher Classification	Lowest Identification	No of Animals
Clitella		
Oligochaeta		
Enchytraeida		
Enchytraeidae	Enchytraeidae sp. Biologic-OLIGO20	1
	Enchytraeidae `2 bundle` s.l. (long thin 2 per seg)	2
	Enchytraeidae `2 bundle` s.l. (short sclero 2 per seg)	4
	Enchytraeidae `2 bundle` s.l. (short sclero 4 per seg)	1
	Enchytraeidae `3 bundle` s.l. (short sclero)	10
Haplotaxida		
Phreodrilidae	Phreodrilidae sp. AP DVC s.l.	10
	Phreodrilidae sp. AP SVC s.l.	2
Crustacea		
Ostracoda		
Podocopida		
Areacandona	*Areacandona mulgae*	5
Maxillopoda		
Cyclopoida		
Cyclopidae		
Diacyclops	*Diacyclops humphreysi* s.l.	12
	Diacyclops sobeprolatus	1
Fierscyclops	*Fierscyclops (Fierscyclops) frustratio*	2
Pescecyclops	*Pescecyclops* `BCY117`	2
Harpacticoida		
Parastenocarididae		
Parastenocaris	*Parastenocaris* `COP001`	1
Malacostraca		
Syncarida		
Parabathynellidae		
Billibathynella	*Billibathynella* `BSY404`	1
	Billibathynella cassidis	8
Amphipoda		
Paramelitidae	Paramelitidae `BAM226`	22
	Paramelitidae `BAM242`	6
	Paramelitidae gen. nov. 1 `AMP001`	1
	Paramelitidae Genus 2 sp.	1
	Paramelitidae sp. Biologic-AMPH020	1
Kruptus	*Kruptus* sp. Biologic-AMPH022	1
Isopoda		
Tainisopidae		
Pygolabis	*Pygolabis weeliwolli*	1

5.2.1. Species Ranges

Four of the 23 species collected are known only from the survey area. All four are likely to have ranges that extend more widely than the project area into the local or regional geologies. It should also be noted that proposed above-water table pits will not be intercepting their groundwater habitat.

Further detail about the four species is provided below.

***Pescecyclops* `BCY117`:** Copepods are among the most abundant and diverse groups in groundwater ecosystems (Iannella et al., 2020). However, in the context of linear ranges, while some stygobitic copepod species are widely distributed (Karanovic and Krajicek 2012; Halse et al. 2014), others appear to have linear ranges of only a few kilometres (e.g. Karanovic and Cooper 2011). This morphospecies is known from two records within the same bore, HR0096, as bycatch from two troglofauna scrapes which made contact with the groundwater. Linear ranges of described and undescribed *Pescecyclops* species with records from >3 sites range from 0.02 to 1496 km with a median of 290 km. Thus, if *Pescecyclops* `BCY117` has biology typical of *Pescecyclops* as a genus, it is expected to have a linear range that extends well beyond the Project area.

Paramelitidae `BAM226` and `BAM242`: Amphipod crustaceans comprise one of the more abundant and diverse components of Australian groundwater ecosystems. Halse *et al*. (2014) suggested that amphipod species in the Pilbara typically occupy about three sub-catchments (i.e. three creek catchments within a river basin such as the Fortescue or De Grey. More recent genetic work has shown some, but not all, species have smaller ranges (King *et al*. 2021). This applies to the family Paramelitidae, which consist of both widespread and restricted species (Biologic, 2020) and the Bennelongia database shows that paramelitid species with records from >3 sites have known linear ranges varying from 1.9 to 594 km with a median of 19 km. Paramelitidae `BAM226` is known from 23 records at 12 bores, with a linear range of 4.2km, while Paramelitidae `BAM242` was collected six times at four bores with a linear range of approximately 4.5km. These ranges are smaller than typically recorded for paramelitids, perhaps as a result sampling being limited to the Project area. The recorded occurrences of both species across the whole Project area – from east to west – are suggestive of wider ranges than the Project area.

***Billibathynella* `BSY404`**: This species is known from the single specimen collected in the survey area for the mine site during sampling. Syncarids are common in Australian groundwaters and mostly have small ranges, although occasionally species with linear ranges of tens of kilometres are collected (Little et al. 2016; Perina et al. 2019a). Based on records from Bennelongia sampling and the papers of Guilia Perina (2018, 2019a,b), the linear ranges of bathynellid species in Western Australia with records from >3 sites vary from 0.1-39 km, with a mean of 2 km and median of 6 km. Thus, if *Billibathynella* `BSY404` has biology typical of *Billibathynella* as a genus, it is expected to have a linear range that extends beyond the Project area.

6. DISCUSSION & CONCLUSIONS

The prospectivity for stygofauna in the regional area around the Project is high and groundwater under the Project mine pits supports a moderately rich stygofauna assemblage. The aquitard formed by Mt Sylvia and Mt McRae Shale to the north of the mine pits may create vertical and horizontal barriers, limiting distributions, as may the occurrence of unmineralized BIF to the south. However, the distributions of the species collected suggest a high level of east-west connectivity.

The richness of the stygofauna community and the large depth to water at the holes sampled (usually >40 mbgl) conflicts with the 30mbgl threshold for rich stygofauna communities suggested by Halse *et al.* (2014). However, the depth threshold seems not to apply to some fractured rock aquifers and suggests the stygofauna community in the Project area is using the mineralised Brockman Iron Formation aquifer.

Four species of stygofauna collected are known known only from the field survey, all of which represent new undescribed species collected from within this assessment. Investigation of ecological characteristics and the hydro-geological profile of the area has resulted in all species being anticipated to have ranges extending beyond the project boundaries.

After investigation of the subterranean fauna values in and around the project area, it is expected that the stygofauna community characterised by field survey will extend outside the project's boundaries and into the surrounding habitats in the regional area. This is illustrated by the only moderately rich stygofauna community collected, the connectivity of habitats east west across the project area, extending beyond the development boundaries, and the ranges, or predicted ranges, of the species collected, as theorised using all available knowledge of ecological characteristics and hydro-geological profiles. No species of conservation significance were identified to be restricted, or being expected to be restricted, to the project area within this field survey.

When viewing the above stygofauna sampling results, it should be remembered that this report deals only with proposed above-water table mining.

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Appendix 1. Boreholes Sampled for Stygofauna

Fieldcode	Latitude	Longitude	Notes	Sampled	Drilled	Temp ºC	EC µS/cm	pH	SWL mbgl	EOH mbgl
HR0191	-23.228185	119.451858		29 Oct 24		28.7	590	6.53	48.89	50
HR0008	-23.227258	119.454802		25 Jul 24 29 Oct 24		28.4	654	6.67	40.33	54
HR0156	-23.227236	119.456723		25 Jul 24 29 Oct 24		28.7	646	6.62	40.07	55
HR0146	-23.227179	119.459665		25 Jul 24 29 Oct 24		27.3	623	6.72	39.28	51
HR0243	-23.226732	119.429367		24 Jul 24 29 Oct 24		24.3	617	6.61	43.33	59
HR0262	-23.226693	119.430237		29 Oct 24		27.6	595	6.54	42.85	67
HR0018	-23.225956	119.442973		24 Jul 24 29 Oct 24		25.3	695	6.66	33.25	49
HR0124	-23.225349	119.417715		28 Oct 24		26.1	663	6.61	46.57	66
HR0010	-23.225306	119.45084		24 Jul 24 29 Oct 24		28	678	6.69	40.94	45
HR0249	-23.225109	119.415676		28 Oct 24		28.3	798	6.6	47.65	96
HR0259	-23.224567	119.427455		24 Jul 24 28 Oct 24		27.6	682	6.52	48.61	67
HR0248	-23.224298	119.415642		25 Jul 24 28 Oct 24		27	739	6.59	46.79	65
HR0265	-23.223287	119.428212		25 Jul 24 29 Oct 24		25.9	705	6.63	37.79	42
HR0261	-23.224117	119.426303		24 Jul 24		25.9	713	6.71	43.56	62

Appendix 2. Maps showing distributions of stygofauna species in the Project area

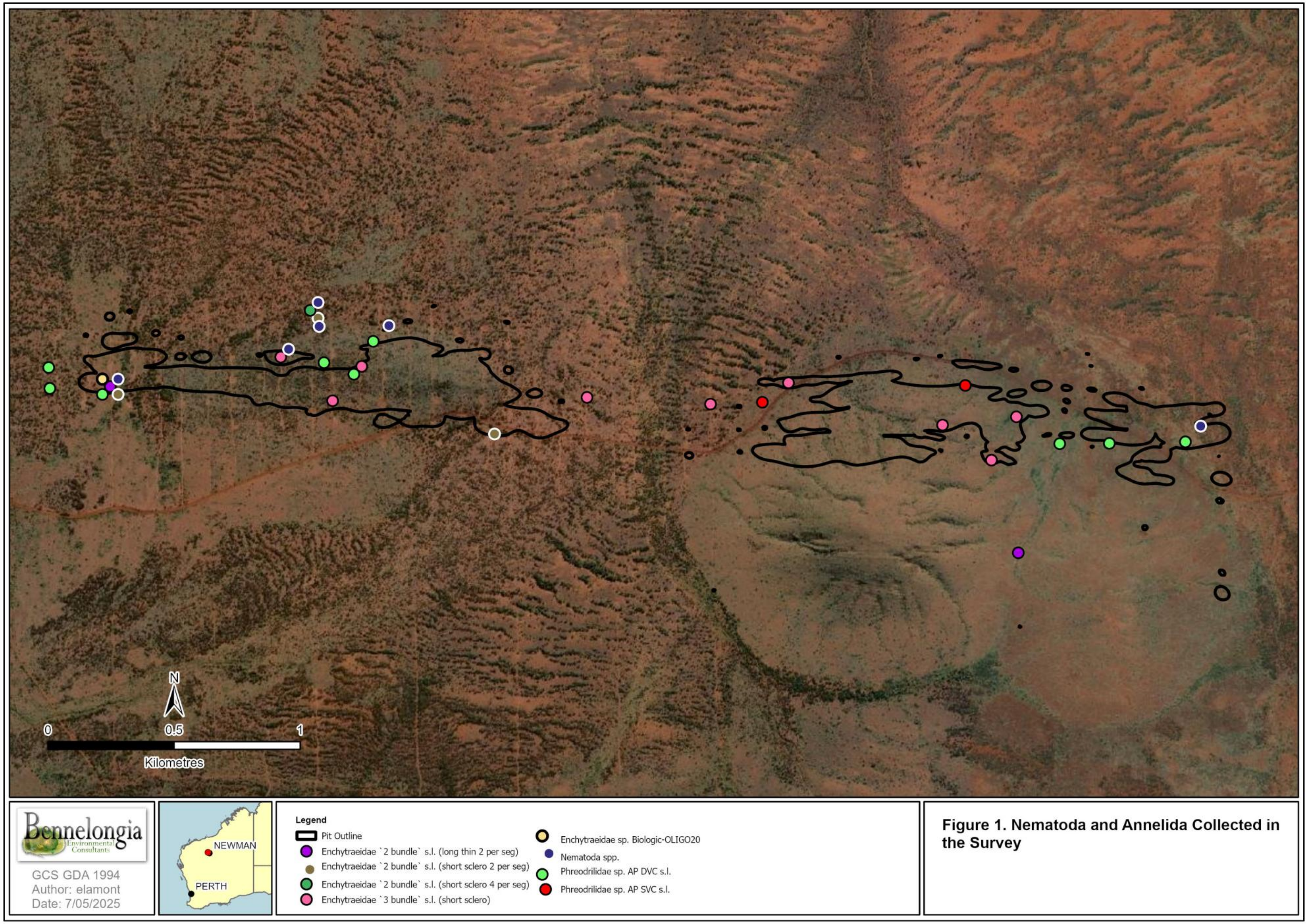
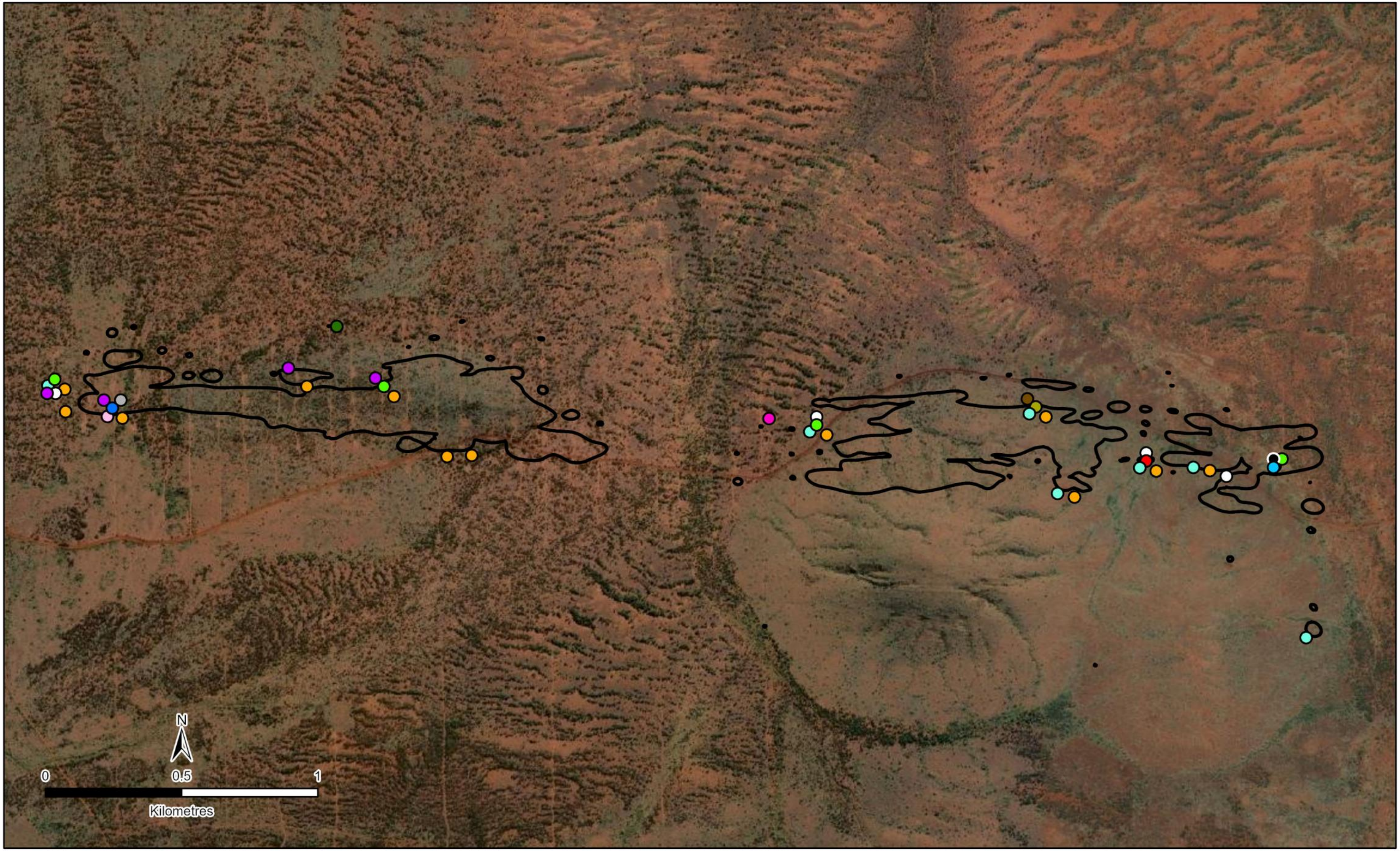


Figure 1. Nematoda and Annelida Collected in the Survey



Bennelongia Environmental Consultants

GCS GDA 1994
Author: elamont
Date: 29/05/2025

Legend

- Pit Outline
- Areacandona mulgae
- Billibathynella `BSY404`
- Diacyclops humphreysi s.l.
- Billibathynella cassidis
- Diacyclops sobeprolatus
- Fierscyclops (Fierscyclops) frustratio
- Kruptus sp. Biologic-AMPH022
- Paramelitidae Genus 2 sp.
- Paramelitidae `BAM226`
- Paramelitidae `BAM242`
- Paramelitidae gen. nov. 1 `AMP001`
- Paramelitidae sp. Biologic-AMPH020
- Parastenocaris `COP001`
- Pescecyclops `BCY117`
- Pygolabis weeliwolli

Figure 2. Arthropoda Collected in the Survey

Appendix 3. Results of molecular analyses for Stygofauna collected in the project area

Collection Date	Bore Code	Final Identification	Identification Before DNA	Comments
5 Feb 2024	HR0124	Billibathynella `BSY404`	*Billibathynella cassidis*	No species level match was found with this sequence, with the closest match being 15.5% distant to *Parabathynellidae* sp. OP, stored in the Bennelongia database. It did not match the sequence for *Billibathynella cassidis*. Therefore, a novel species name was assigned
5 Feb 2024	HR0124	Paramelitidae gen. nov. 1 `AMP001`	Paramelitidae `BAM226`	This sequence is 8.2% distant from Paramelitidae gen. nov. 1 `AMP001` in both the Bennelongia and GenBank databases.
24 July 2024	HR0010	*Pygolabis weeliwolli*	*Pygolabis weeliwolli*	No species level match was found with this sequence, with the closest being 7.9% distant to *Pygolabis weeliwolli* isolate BMR11869 in the GenBank database. Inter disctance according to Finston et al. (200) start from 16%, so although the intra distance to other weeliwolli specimens is much higher than reported in this paper (0.2-1.1%), we cannot conclude it as a different species. Pygolabis weeliwolli is retained
24 July 2024	HR0010	Paramelitidae sp. Biologic-AMPH020	Paramelitidae Genus 2 sp.	This sequence is 8.2% distant from Paramelitidae Genus 2 sp. B02 in the Bennelongia database, and 2% distant from Paramelitidae sp. Biologic-AMPH020 in the GenBank database
22 July 2024	HR0124	*Kruptus* sp. Biologic-AMPH022	*Kruptus* sp.	This sequence is 19.4% distant from *Kruptus* `BAM227` in the Bennelongia database, and 3.8% distant from *Kruptus* sp. Biologic-AMPH022 in the GenBank database