Bennelongia Environmental Consultants

Ministers North Subterranean Fauna Survey

Prepared for:

BHP Western Australian Iron Ore

December 2024

Final Report

Short-Range Endemics I Subterranean Fauna

Waterbirds I Wetlands

Ministers North Subterranean Fauna 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: 654

Report Version	Prepared by	Reviewed by	Submitted to Client	
			Method	Date
Draft	Ana Vasconcelos	Stuart Halse Vitor Marques Ethan Lamont	email	18 June 2024
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EXECUTIVE SUMMARY

BHP Western Australian Iron Ore (BHP WAIO) is investigating the development of Ministers North and the associated infrastructure corridor area (the Survey Area) as an additional supply of iron ore from the Pilbara region of Western Australia. The Survey Area is located 11 km south of BHP WAIO's Yandi mine and 90 km northwest of Newman in the Pilbara and covers an area of approximately 57 km^2. To inform future environmental approvals, BHP WAIO commissioned Bennelongia Environmental Consultants to undertake subterranean fauna surveys to document the subterranean species and communities of the Survey Area, including locations of the potentially restricted species Palpigradi sp. B24 and *Hanseniella* sp. B43-DNA recorded in earlier surveys.

The Survey Area is located north of a small ridge in the Hamersley Range. Most of the Ministers North deposit is associated with the Brockman Iron Formation, which comprises banded iron formation geologies overlain by a continuous layer, or hardcap, of about 20 m thickness. The depth to groundwater is more than 60 m across most of the deposit, but groundwater is shallower at the eastern edge of the deposit where it is associated with a creek line. Based on geology, Ministers North is prospective for troglofauna but not stygofauna because of the depth to groundwater (except possibly on the eastern edge of the deposit).

A desktop review found 3143 records of 31433 individuals belonging to 239 stygofauna species, and 2790 records of 7245 individuals belonging to 385 troglofauna species in the Study Area (a 60 km x 60 km area centred on the Survey Area). Of those records, eight species of stygofauna and 53 species of troglofauna were in the Survey Area. According to the desktop search, there was one species of stygofauna (the worm Tubificinae sp. B09) and 29 species of troglofauna potentially restricted to the Survey Area.

Three rounds of subsequent field survey in the Survey Area collected a relatively depauperate stygofauna community of 117 specimens representing six species, confirming that stygofauna at Ministers North is not highly diverse. There were no potentially restricted species of stygofauna collected during the field survey.

In contrast, the field survey collected a rich assemblage of troglofauna species in the Survey Area. The 1551 troglofauna specimens belonged to at least 47 species, of which 19 represent new, undescribed species. Combining desktop and field survey, results showed 48 species of troglofauna potentially restricted to the Survey Area. However, 32 of the 48 species of troglofauna known only from the Survey Area were also recorded in locations outside the proposed mining pits. Therefore, 16 species are currently known to occur only inside the mining pits. Based on geological modelling of the bores in which the species were found, it was recognized that eleven of the sixteen species (including Palpigradi sp. B24 and *Hanseniella* sp. B43-DNA) are likely to occur outside the mining pits. Bores with the same geology occurring outside the mining pits and in nearby locations were not found for the pauropod Pauropodidae 'BPU119', the symphylan *Hanseniella* 'BSYM129', and the coleopterans Coleoptera `BCO236`, Pselaphinae sp. S04, and Zuphiinae sp. S01 s.l.. However, the absence of bores with the same geology outside the mining pits is not an indication that those species have restricted distribution ranges.

The results showed that most of the species potentially restricted to the mining pits are likely to have larger distributions than currently recognised and are unlikely to be restricted to the Survey Area.

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1. INTRODUCTION

1.1. Project Description

BHP Western Australian Iron Ore (BHP WAIO) is investigating the development of Ministers North and an associated infrastructure corridor area (hereafter referred to as the Survey Area) to provide an additional supply of iron ore from the Pilbara region of Western Australia.

The Survey Area is located 11 km south of BHP WAIO's Yandi mine and 90 km north-west of Newman in the Pilbara and covers an area of approximately 57 km^2 (Figure 1). Previous subterranean fauna surveys were conducted at Ministers North in 2009-10 by Subterranean Ecology (2010) and in 2017-18 by Bennelongia (2018). In addition, a targeted troglofauna survey aimed to provide further information about the distribution of the possibly restricted species Palpigradi sp. B24 (collected by Subterranean Ecology 2010) and the symphylan *Hanseniella* sp. B43-DNA (collected by Bennelongia 2018) was conducted by Bennelongia (2021).

This report document summarises results of previous sampling and reports the results of further sampling in 2023 and 2024 to provide comprehensive information about subterranean fauna in the Survey Area and to inform future environmental approvals. The specific objectives were:

- To collate existing records of subterranean animals from the Survey Area and surroundings to determine the presence, or likely presence, of conservation significant species and communities;
- To identify potential locations of additional specimens of Palpigradi sp. B24 and *Hanseniella* sp. B43-DNA, including any other potential restricted subterranean species; and
- To conduct a further detailed subterranean fauna survey in the Survey Area over three seasons.

1.2. Subterranean Fauna Framework

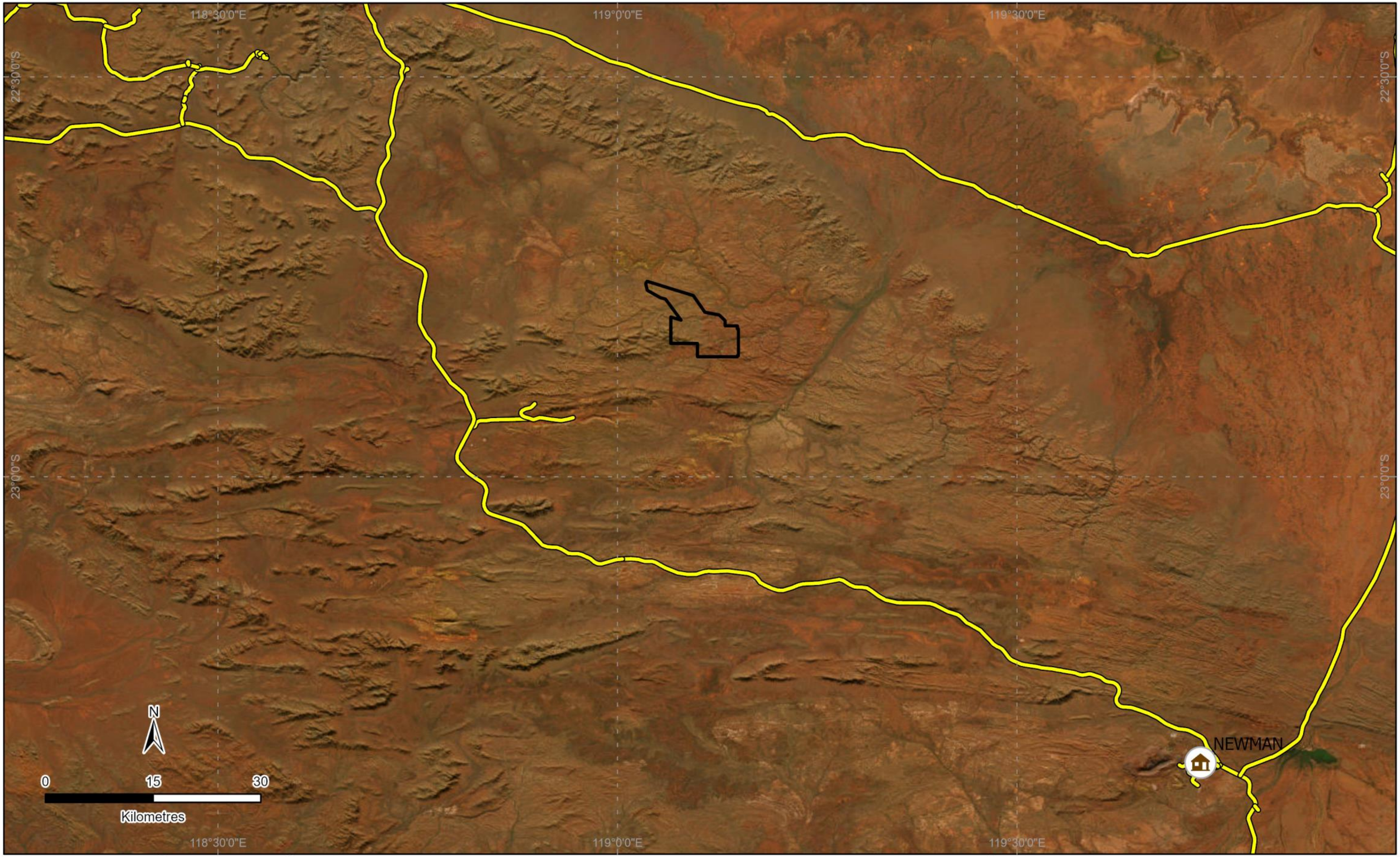
The subterranean fauna of Western Australia is globally recognized as extremely rich in invertebrate species (Guzik *et al*. 2010; Halse 2018). Although most organisms are microscopic, they are important components of the ecosystem and can regulate water quality (Hose and Stumpp 2019). Because of their high levels of endemism, subterranean fauna are especially susceptible to extinction as a result of direct removal of habitat through mine pit excavation or groundwater drawdown (Halse 2018). To guarantee the viability of species and populations, and to ensure their ecological function remains, the Environmental Protection Authority (EPA) in Western Australia requires subterranean fauna to be considered as part of environmental impact assessments (EPA 2021).

Subterranean fauna found in Western Australia can be divided into two broad categories: stygofauna and troglofauna. Stygofauna occurs in groundwater, whereas troglofauna occur in subterranean spaces between the water table and the ground surface (Halse 2018). Stygofauna species can occur in alluvial and colluvial aquifers in a variety of geologies. However, depth to water table of more than 30 m and water with high salinity can restrict the occurrence of stygofauna (Humphreys *et al.* 2009; Halse *et al.* 2014; Halse 2018). Troglofauna species in the Pilbara are most common in mineralized rocks and unsaturated calcrete. The main representatives of stygofauna in the Pilbara region are crustaceans, beetles and worms. Troglofauna in the Pilbara region mainly comprises spiders, pseudoscorpions, schizomids, millipedes, centipedes, beetles, cockroaches and isopods (Halse 2018).

2. ENVIRONMENT

2.1. IBRA regions

According to the recognised bioregionalisation of Australia (Figure 2; DCCEEW 2021), the Survey Area is situated within the Hamersley subregion of the Pilbara bioregion. The Hamersley subregion is characterised as 'mountainous', comprising Proterozoic sedimentary ranges and plateaus, with gorges of basalt, shale, and dolerite.



GDA2020
Author: Avasconcelos
Date: 15/10/2024

Legend

Town

Survey Area

Roads

Figure 1. Ministers North and the Survey Area in relation to Newman in the Pilbara region in Western Australia

2.2. Geology

The Survey Area (Ministers North tenement and associated infrastructure corridor) lies north of a small ridge in the Hamersley Range. The tenement is associated with the Wirriba Anticline, which is a convex, sub-surface geological fold. The oldest geology in the fold, which occurs at depth, is the Mt Sylvia Formation and the youngest is the Weeli Wolli Formation, which is exposed in the northern part of the tenement (Thompson 2017) (Figure 3). However, most of the deposit is associated with the Brockman Iron Formation (Figure 3), which consists of an alternating sequence of Banded Iron Formation (BIF), shale, and chert. The Brockman Iron Formation is subdivided into four Members: Dales Gorge Member, Joffre Member, Mt Whaleback Shale Member, and Yandicoogina Shale Member. Brockman Iron Formation is also present in the Packsaddle Range at BHP's Mining Area C.

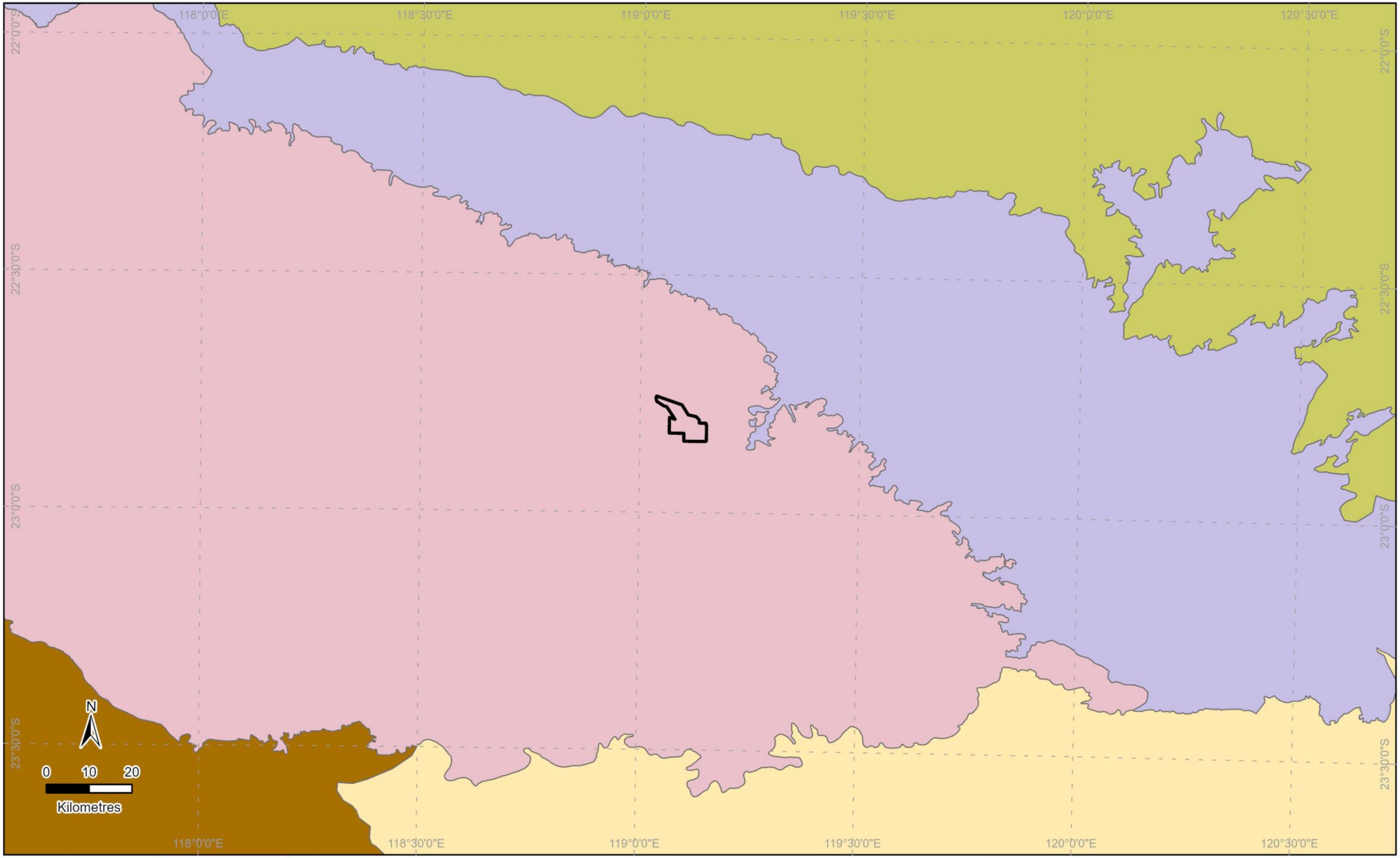
A small area of carbonate-rich turbidite occurs in the Survey Area and lies between two of the four Mt McRae Shale subunits, representing an area of ocean current when the Mt McRae Shale Formation was being laid down. There is a small 500 m dolerite dyke situated in the upper west and three larger dykes on the fringes of the southern and southwestern extents of the Survey Area. The tenement itself is structurally simple and has no significant faults. The fault to the northeast of the Survey Area is seen at the surface and is likely to be a result of the rotation of the Wirriba fold hinge to a northwest-southeast orientation (Thompson 2017).

BIF is the most widespread surface geology (Figure 4) and occurs in two previously mentioned geological units: the Weeli Wolli Formation (PLHj = Colluvium partly consolidated quartz and rock fragments in silt, and sand matrix), which outcrops throughout the northern half of the Survey Area; and the Brockman Iron Formation (PLHb = Banded Iron Formation, chert and pelite), which outcrops extensively throughout the southern extent of the Survey Area (Figure 4) (Thorne and Tyler 1997). Both these formations are expressed as rocky ranges and ridges. A broad section of Hematite-Goethite deposits (Czr = Hematite-Goethite deposits on BIF and adjacent scree deposits) also lies above BIF in the southern central section of the Survey Area (Figure 4). This area is characterised by iron-rich lateritic soils and gravels, which have built up through weathering and accumulated as valley floor deposits (Thorne and Tyler 1997).

Three other surface geologies intersect the Survey Area (Figure 4). These include two "branches" of Alluvium (Qa = Alluvium unconsolidated silt, sand, and gravel; in drainage channels and on adjacent floodplains) traversing the Survey Area in creek lines and valleys between ridges of the Weeli Wolli Formation (Figure 4) (Thorne and Tyler 1997). This unconsolidated silt sand and gravel connects to similar geologies in the Marillana Creek to the north of the Survey Area. The northern branch also has isolated deposits of Robe Pisolite (Czp = Pisolitic-Limonite deposits developed along river channels), which are expressed as steep slopes with flat top plateaus along drainage lines (Figure 4) (Thorne and Tyler 1997). In addition, two very small sections of valley fill contain partly consolidated Colluvium containing quartz and rock fragments in silt (Czc = Colluvium partly consolidated quartz and rock fragments in silt and sand matrix) marginally intersect the Survey Area in the far northwest and southwest (Figure 4) (Thorne and Tyler 1997).

2.3. Hydrogeology

Groundwater yields occur in the Survey Area within both mineralised and fractured unmineralized lithologies. The dominant regional aquifer system occurs in the bedrock Dales Gorge Formation (Cywinksi-Jan and Sanders 2017). The water table across the Survey Area is flat, with table elevations ranging from 564 to 666 m ASL, which translates to depth to the water table of 40 to 153 mgbl, with the deepest levels occurring below the tops of ridges (Cywinksi-Jan and Sanders 2017).



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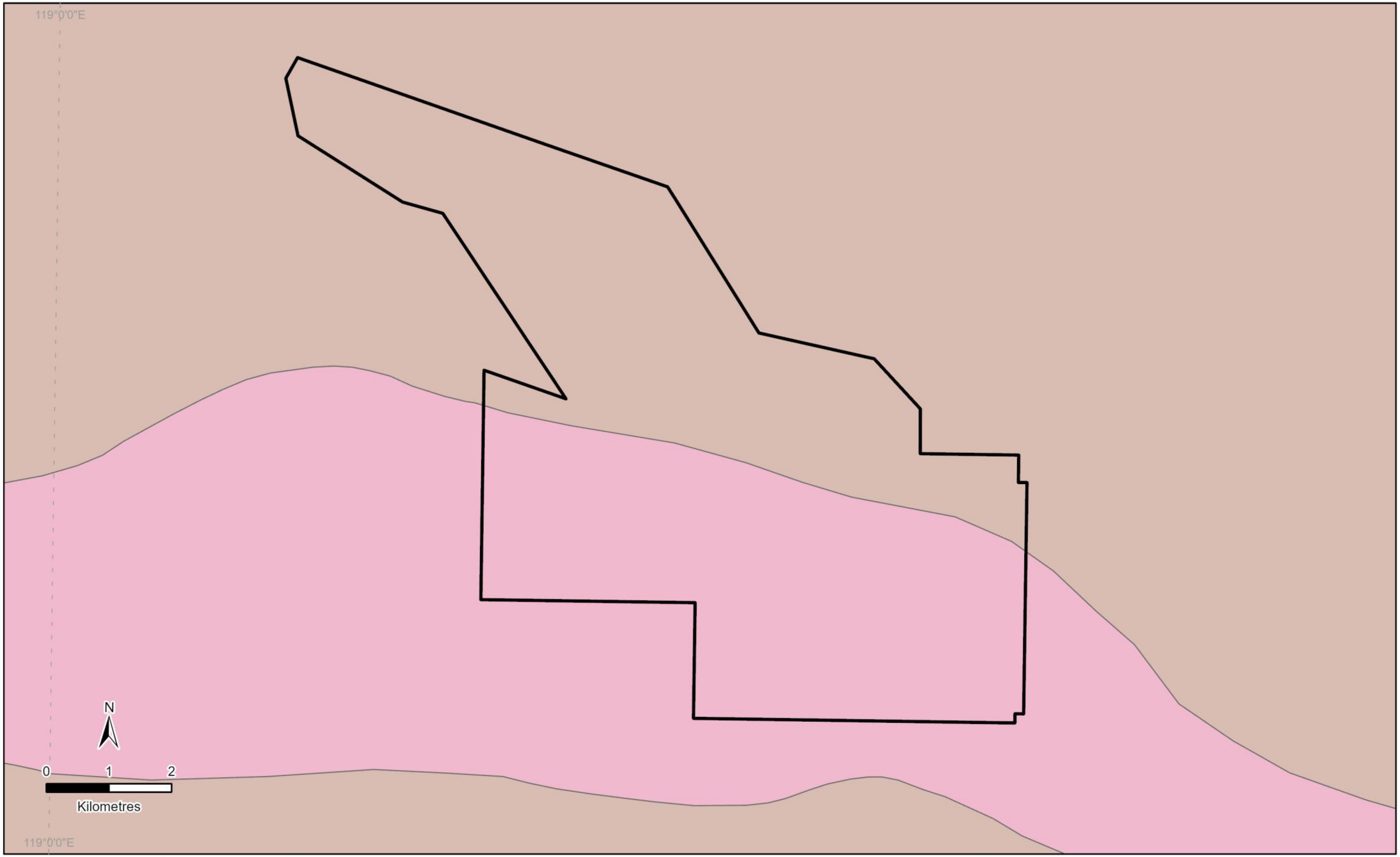
Legend

- Survey Area
- IBRA Bioregions
  - Ashburton
  - Augustus
  - Chichester
  - Fortescue
  - Hamersley

Figure 2. IBRA bioregions of the Survey Area and surroundings



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Legend

Survey Area

Weeli Wolli Formation

Geology

Brockman Iron Formation

Figure 3. Bedrock geology of the Survey Area

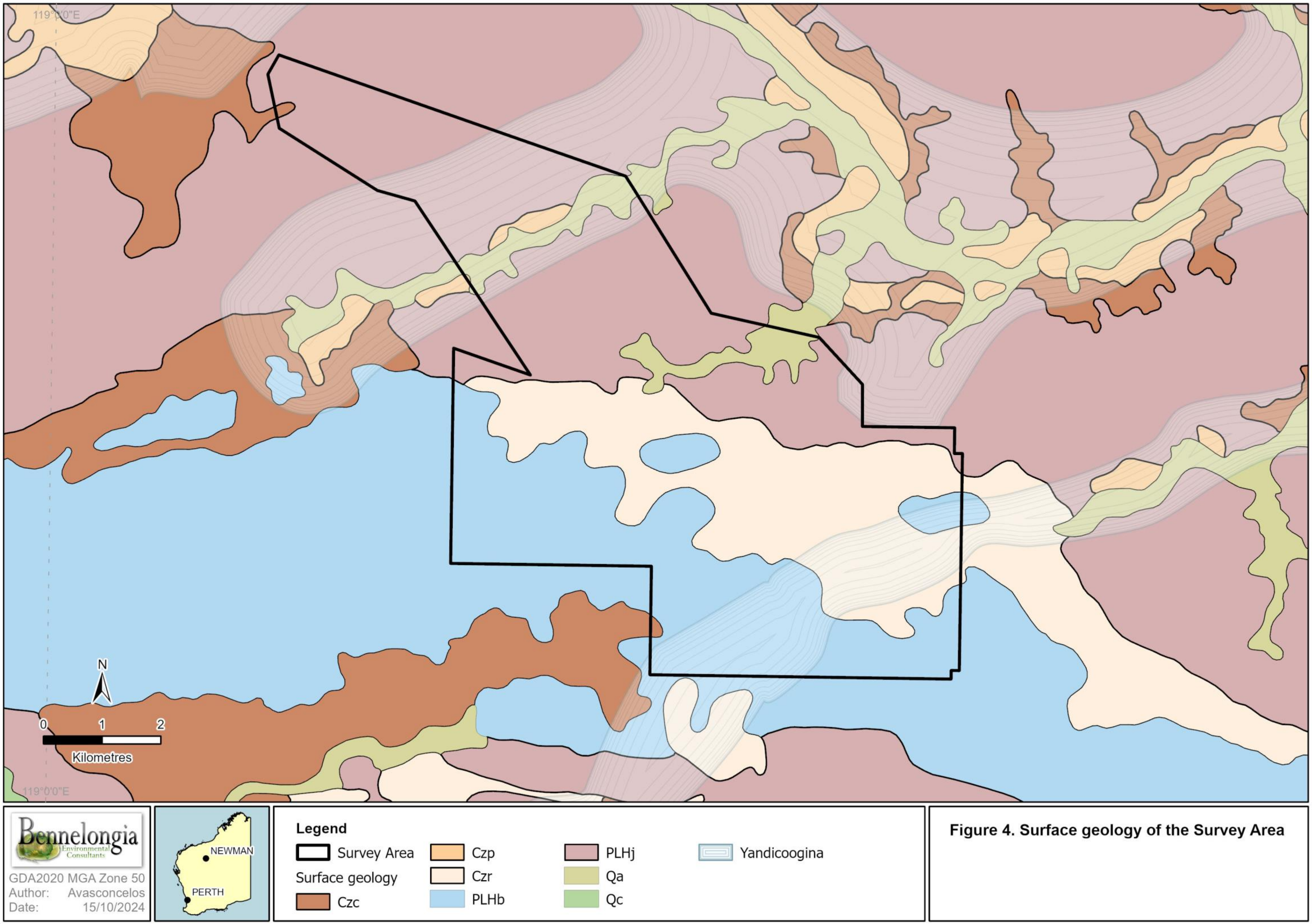


Figure 4. Surface geology of the Survey Area

2.1. Subterranean Fauna Habitats

Groundwater in the Survey Area is fresh and, thus, appropriate for the occurrence of stygofauna. However, depth to the water table across most of the Survey Area is deep (an average of 61.5 m, Bennelongia 2018), which is usually not suitable for stygofauna communities (Halse 2018; Hyde *et al*. 2018). Groundwater is shallower to the east of the proposed mine pits where it is associated with a creekline. Previous surveys at Ministers North have recorded a low number of stygofauna species (Subterranean Ecology 2010; Bennelongia 2018).

In the Brockman Iron Formation in the Survey Area, weathering of exposed rock has led to the creation of a layer of hardcap about 20 m thick across the whole deposit. This layer contains numerous cavities, some of which are filled with clay material, but most are empty and provide suitable troglofauna habitats (Bennelongia 2018, 2014). A rich troglofauna community was found at Ministers North by Subterranean Ecology (2010) and Bennelongia (2018).

3. METHODS

3.1. Desktop Review Methods

A database and literature review were undertaken to determine the presence, or likely presence, of conservation significant subterranean species or communities. The desktop assessment combined four sources of information using GIS mapping:

1. Boundary information and description of Project activity supplied by BHP;
2. Boundaries of TECs and PECs provided by DBCA and the Department of Mines, Industry Regulation, and Safety;
3. Subterranean fauna species listed in reports of surveys previously undertaken within 30 km of the Survey Area;
4. Subterranean fauna species in the Western Australian Museum (WAM) and Bennelongia databases, which covered an area of 60 km x 60 km centred on the Survey Area and bounded by the decimal coordinates -22.353, 118.468 and -23.256, 119.443 (Study Area):
    - For WAM records, information about sampling method and habitat, if available, was used in conjunction with available information about the species or group to distinguish stygofauna and troglofauna species from others;
    - For each species, the number of individuals collected (i.e. how many were found in all records) was collated.

3.2. Field Survey Methods

A three-season survey of stygofauna and troglofauna was undertaken (Table 1; Figure 5) in accordance with EPA technical guidance for subterranean fauna surveys (EPA 2021). Fieldwork was undertaken under Regulation 27 licence BA27000728 (licence holder: Mike Scanlon). The survey effort took into consideration previous sampling locations, the number of samples, and the existing subterranean fauna information available for the Survey Area and surroundings. The survey effort also included a targeted sampling of bores outside of impact areas for the troglofauna species Palpigradi sp. B24 and *Hanseniella* sp. B43-DNA.

3.2.1. Physico-chemical measurements

In situ water quality parameters (temperature, electrical conductivity, and pH) were measured in each bore using a WP 81 field meter. The standing water level and total depth of the hole were also measured using a Solinst water level meter.

Table 1. Number of samples collected via each method across the three rounds of survey.
'Trap 1' refers to troglofauna traps placed close to the bottom of the holes and 'Trap 2' refers to troglofauna traps placed in an upper position in relation to Trap 1 (Trap 2 were used in approximately 20% of the sampled holes).

Round	Dates	Stygofauna	Troglofauna			
		Net	Scrape	Trap 1	Trap 2	Samples
1	26/04-02/05/2023 26-30/06/2023	29	95	95	22	95
2	28/07-2/08/2023 18-20/10/2023	26	95	95	25	95
3	21-26/11/2023 30/01-2/02/2024	20	95	95	23	95
Total		**75**	**285**	**285**	**70**	**285**

3.2.2. Subterranean fauna sampling

Stygofauna was sampled in bores or exploration drill holes using a weighted plankton net with six hauls being taken at a bore, three using 50-µm mesh and three using 150-µm mesh. During each haul, the net was lowered to the bottom of the hole and oscillated vertically to increase the likelihood of collecting specimens, and then 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 4 °C. Nets were washed between holes to prevent site-to-site contamination.

Troglofauna was sampled using two techniques: scraping and trapping. Scraping was done prior to setting traps using a weighted net of 150-µm mesh and an upper diameter approximately 60% of that of the drill hole. The net was lowered to the bottom of the hole or the water table and then scraped back to the surface at least four times. In each of these scrapes, where possible, a different section of the wall of the hole was targeted (e.g., north, south) to maximise the number of animals collected. After each haul, net contents were transferred to a 125-ml vial with 100% ethanol to preserve the sample, and refrigerated at 4 °C.

Trapping used cylindrical PVC traps measuring approximately 80 x 120 mm that were partly filled with moist microwaved Pilbara leaf litter to attract troglofauna. Traps were lowered close to the bottom of the hole (or water table if the hole intersected water) and left in place for about two months before retrieval. At about 20% of sites, two traps were set in a hole with the upper one about one-third of the distance to the bottom trap. When traps were retrieved, litter was transferred to zip-lock bags.

All stygofauna and troglofauna samples were freighted from the field to the Bennelongia laboratory for sorting and identification of stygofauna and troglofauna to the lowest taxonomic level as possible (usually species level to named or coded species). Stygofauna net and troglofauna scrape samples were sieved to improve sorting efficiency. Troglofauna trap samples were placed in Tulgren funnels to extract the animals that were present in the trap. All initial sorting was done under a dissecting microscope. All morphological identifications of stygofauna and troglofauna specimens were made using dissecting and compound microscopes and relevant keys or the typical characters used in keys for each animal group.

3.3. Sampling Effort

Sampling effort is summarised in Table 1. Seventy-five stygofauna samples were collected. Calculation of troglofauna sampling effort is more complex, with the combination of all scraping and trapping (either one or two traps) being regarded as contributing a single sample. Thus, the sampling effort in the three rounds of sampling is considered to make up 285 troglofauna samples. The holes sampled for stygofauna were in the north-eastern part of Ministers North or to the east. The distribution of holes sampled for troglofauna was even across Ministers North, with some holes also sampled outside the Survey Area (Figure 5).

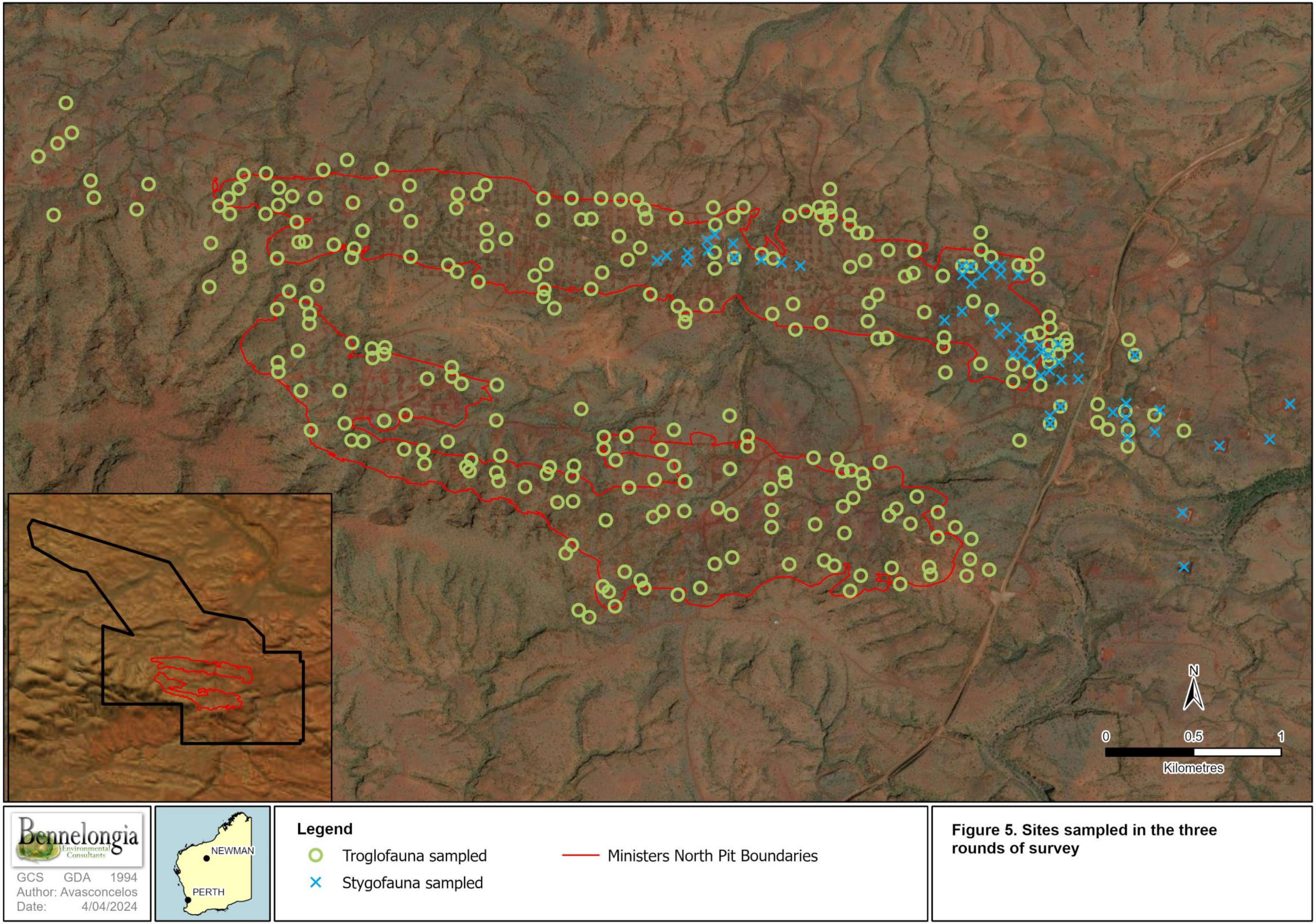


Figure 5. Sites sampled in the three rounds of survey

3.4. Molecular Analysis

After morphological identification, 76 specimens were analysed through molecular sequencing to confirm the species identity. These specimens could not be identified solely through morphological methods as they represented damaged specimens, juveniles, or those from non-diagnostic sex, and therefore, genetical comparison with vouchered sequenced was necessary. Depending upon the size of the specimens, legs or small pieces of animals were dissected off, or whole animals were used for extractions. Extraction protocols were carried out with Qiagen DNeasy Blood & Tissue kit (Qiagen 2006) using the manufacturer's protocol (except for the incubation period and elution volumes). The incubation period was approximately 42-44h, and elution volumes were 2 x 50 µL. Primer combinations used for PCR amplifications were jgLCO1490:jgHCO2198 (Geller et al. 2013) and C1J1718:HC02198 (Simon et al. 1994, Folmer et al. 1994), used to target a portion of the mitochondrial Cytochrome Oxidase I (*COI*) gene, and SRJ14197:SRN14745 (Simon et al. 1994), used to target the mitochondrial 12S ribosomal RNA gene (only used for Schizomida and *Phaconeura*). Bi-directional, sanger sequencing was undertaken for PCR products by the Australian Genome Research Facility (AGRF).

3.5. Bore geological modelling

Drill logs and geological data provided by BHP were analysed using the Geoscience plugin in QGIS 3.34. Cross sections were made from the species' locations to the closest bores outside the mining pits, inclusive of any known drill holes between these two points. The cross sections compared the geologies from where the species were found with those occurring outside the mining pits in an attempt to identify continuous habitat between the collection location and sites identified as outside of proposed pits.

Where possible, trap depth of collected individuals were used to determine a geology from within which the specimen was collected and compared with surrounding drill logs. However, it is not possible to know the exact depth at which the species collected from scraping were found. In this case, the geologies found from the surface to the depth where the nets were scraped into the bore were considered as possible geologies of where the species could occur.

3.6. Personnel

Personnel involved in surveys and reporting are listed in Table 2.

Table 2. Bennelongia personnel involved in the Ministers North surveys.

Role	Name	Qualifications/Experience
Fieldwork	Jim Cocking	B.Sc., Grad. Dip. Sc. 25 years of experience conducting field survey of subterranean and other invertebrate animals.
	Adam Barnard	B.Sc. (Hons). 2 years field experience
	Jaxon Haines	B.Sc. 2 years field experience
	Ashley Browse	B.Sc. 1 year field experience
Sample sorting	Ella Carstens	B.Sc.
	Melita Pennifold	B.Sc. (Hons)
	Georgia Rice	B.Sc.
	Ashley Browse	B.Sc.
	Grant Pearson	Ass. Dip. Rec.
	Monique Moroney	B.Sc.
	Adam Barnard	B.Sc. (Hons)
	Megan Lewis	B.Sc., M.Sc.
	Veera Haslam	B.Sc. (Hons), Ph.D.
	Blake Wyber	B.Sc. (Hons), Ph.D.
Species identification	Jane McRae	Over 30 years of identification experience at the Australian Museum, British Museum, DBCA, and Bennelongia.
	Ella Carstens	B.Sc.

Role	Name	Qualifications/Experience
	Melita Pennifold	B. Sc. (Hons).
	Megan Lewis	B.Sc., M.Sc.
	Blake Wyber	B.Sc. (Hons), Ph.D.
	Ashley Browse	B.Sc. M. Sc.
	Georgia Rice	B.Sc.
	Monique Moroney	B.Sc. (Hons)
DNA	Veera Haslam	B.Sc. (Hons), Ph.D.
	Heather McLetchie	B.Sc. (Hons)
	Daniel White	B.Sc., M.Sc., Ph.D.
Mapping	Ana Vasconcelos Vitor Marques	B.Sc., M.Sc., Ph.D. B.Sc.
Reporting	Ana Vasconcelos	B.Sc., M.Sc., Ph.D.

4. RESULTS

4.1. Desktop Review

The desktop search results indicate that rich stygofauna and troglofauna communities occur around the Survey Area (Figure 6; Appendices 1 and 2). Across the databases searched, a total of 5,933 records of 38,678 individual subterranean animals were found.

4.1.1. Stygofauna records from database searches

There were 3,143 records of 31,433 individuals belonging to 239 stygofauna species (Figure 6; Appendix 1). The most recorded group was Arthropoda (75.3% of the individuals), of which all were crustaceans, followed by Annelida (21.4%). The other groups (i.e. Nematoda, Rotifera, Platyhelminthes and Mollusca) counted for less than 4% of the total individuals found in the desktop search. The desktop search showed that at least eight species of stygofauna occur in the Survey Area (Table 4).

4.1.2. Troglofauna records from database searches

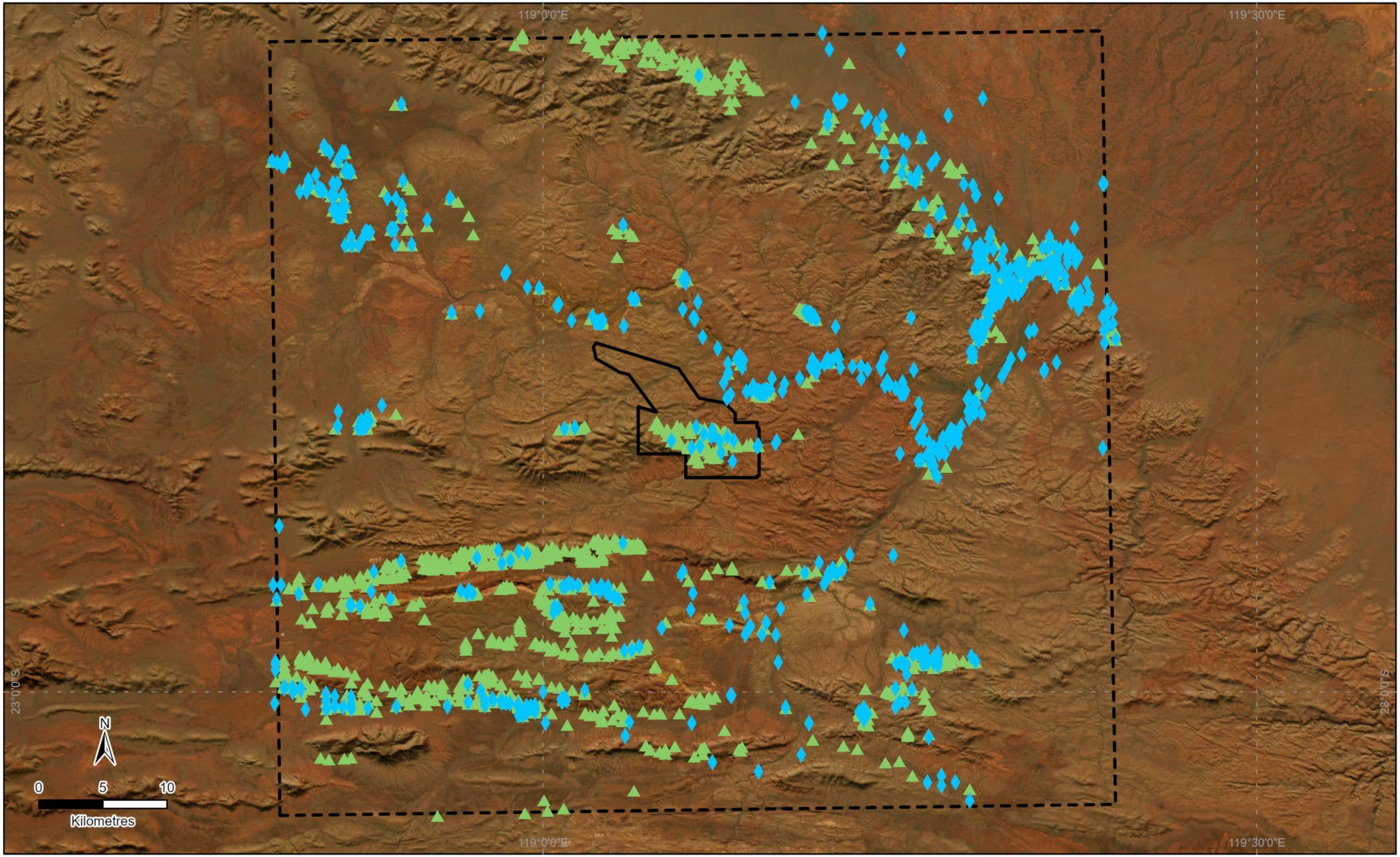
There were 2,790 records of 7,245 individuals belonging to 385 troglofauna species in the Study Area (Figure 6; Appendix 2). No group other than Arthropoda was registered in the desktop records. Among the arthropods, Arachnida was the most recorded group (36.86% of individuals), followed by Myriapoda (21.65%), Insecta (21.13%), Entognatha (12.89%), and Crustacea (7.47%). The desktop search showed that at least 53 species of troglofauna occur in the Survey Area (Table 5).

4.1.3. Palpigradi sp. B24 and *Hanseniella* sp. B43-DNA from database searches

The desktop search showed one record for Palpigradi sp. B24 (collected by Subterranean Ecology 2010) and one for *Hanseniella* sp. B43-DNA (collected by Bennelongia 2008) in the Survey Area (Figure 7). Bennelongia (2021) carried out a subsequent targeted survey to determine the distributions of both Palpigradi sp. B24 and *Hanseniella* sp. B43-DNA but neither species was recovered in the targeted survey.

4.2. Chemical and Physical Measurements

Information about groundwater temperature (Temp), electrical conductivity (EC), pH, standing water level (SWL), and total depth of hole (EOH) is presented in Table 3. Chemical and physical measurements from all holes are presented in Appendix 3.



Bennelongia Environmental Consultants

GCS GDA 1994
Author: Avasconcelos
Date: 14/08/2024

Legend

- Study Area
- Survey Area
- Stygofauna
- Troglofauna

Figure 6. Records of subterranean fauna found in the desktop search

Table 3. Mean, maximum and minimum values of groundwater measurements of holes sampled in 2023 and 2024 in the Survey Area.

	Temp ºC	**EC** µScm-1	**pH**	**SWL** mbgl	**EOH** mbgl
Mean	28.58	653	7	56.1	56.2
Max	32.6	1887	7.63	123	207
Min	22.8	178	6.17	0	6

Table 4. List of stygofauna species recorded in the Survey Area according to desktop search.

Higher taxonomy	**Lowest identification**	**No. of animals**		**No. of holes**
		Subt. Ecol.	**Benn.**	
Nematoda				
	Nematoda spp.	2	2	4
Annelida				
Enchytraeidae	Enchytraeidae 'E06'	210	7	9
Naididae	Tubificinae sp. B09		2	1
Crustacea				
Ostracoda				
Candonidae	*Meridiescandona facies*		1	1
Cyclopoidea				
Cyclopidae	*Diacyclops* \`BCY059\` (*humphreysi* s.l.)		13	1
	Ectocyclops phaleratus		1	1
	Microcyclops varicans		2	1
Malacostraca				
Paramelitidae	Paramelitidae Genus 2 sp. B02		15	1

Table 5. List of troglofauna species recorded in the Survey Area according to desktop search.

Higher taxonomy	**Lowest identification**	**No. of animals**		**No. of holes**
		Subt. Ecol.	**Benn.**	
Arachnida				
Opiliones				
Assamiidae	*Dampetrus* sp. B05 (nr *isolatus*)		1	1
Palpigradi				
	Palpigradi sp. B23		1	1
	Palpigradi sp. B24	1		1
Pseudoscorpiones				
Chthoniidae	*Lagynochthonius* sp.		6	5
Chthoniidae	*Lagynochthonius* sp. B20 (= sp. S04)	7	3	6
Schizomida				
Hubbardiidae	*Draculoides* sp.		2	1
	Draculoides \`BSC036\` (SCH030 complex)		2	2
	Draculoides \`BSC039\`		4	2
	Draculoides \`BSC042-DNA\`		4	4
	Draculoides \`SCH065\`		6	5
	Draculoides \`SCH002\`	4	15	11
Araneae				
	Araneae sp.	2		1
	Araneomorphae sp.	1		
Gnaphosidae	Gnaphosidae sp. S03	2		2
Linyphiidae	Linyphiidae sp. S01	1		1
Oonopidae	Oonopidae sp. B19-DNA		1	1
	Pelicinus \`BAR133\`		2	2
	Prethopalpus sp. B32	2		2
Symphytognathidae	*Anapistula* sp. S01	2		1

Higher taxonomy	Lowest identification	No. of animals		No. of holes
Crustacea				
Isopoda				
Armadillidae	*Troglarmadillo* sp. B64 (= sp. S14)	1	8	5
	Troglarmadillo sp. B65		2	1
Myriapoda				
Chilopoda	Chilopoda sp.	1		
	Chilopoda sp. B01 (Scolopendridae/Cryptopidae)	1		1
Scolopendridae	Scolopendridae sp. S05	1		1
Diplopoda				
Polydesmida	Polydesmida sp. B11		1	1
Polyxenida	Polyxenida sp.		1	1
	Lophoturus madecassus	5	17	11
Spirobolida	Trigoniulidae sp. B06		2	1
Pauropoda				
	Pauropoda sp. S04	2		2
Pauropodidae	Pauropodidae `BPU078`		1	1
	Decapauropus tenuis		1	1
Symphyla				
Scutigerellidae	*Hanseniella* sp. B42-DNA		1	1
	Hanseniella sp. B43-DNA		1	1
Entognatha				
Diplura				
	Diplura sp.	4		1
Japygidae	Japygidae sp. B34		2	2
Insecta				
Zygentoma				
Nicoletiidae	*Dodecastyla* `BZY111`	11	12	7
	Trinemura sp. B32		1	1
Blattodea				
Blattidae	Blattidae sp.		12	8
	Blattidae sp. B06 (= sp. S02)	11	4	10
Nocticolidae	*Nocticola* sp.		92	32
	Nocticola `BBL038 / B10` (*cockingi* s.l.)	87	30	26
Hemiptera				
	Cixiidae sp. B02	3	5	5
Meenoplidae	*Phaconeura* sp.	1	66	4
	Phaconeura sp. B13	7	2	4
Coleoptera				
	Coleoptera sp. B09		1	1
Carabidae	*Gilesdytes vixsulcatus*	1		1
	Typhlozuphium sp. B04		1	1
	Zuphiinae sp. S01 s.l.	1		1
Curculionidae	Cryptorhynchinae sp. B10	1	3	4
	Curculionidae Genus 1 sp. B15 (B02=S02 clade)	4	2	4
Staphylinidae	Pselaphinae sp. S04	3		1
Zopheridae	?Colydiinae `BCO256`		1	1
Diptera				
Sciaridae	*Allopnyxia* sp. B01		178	16

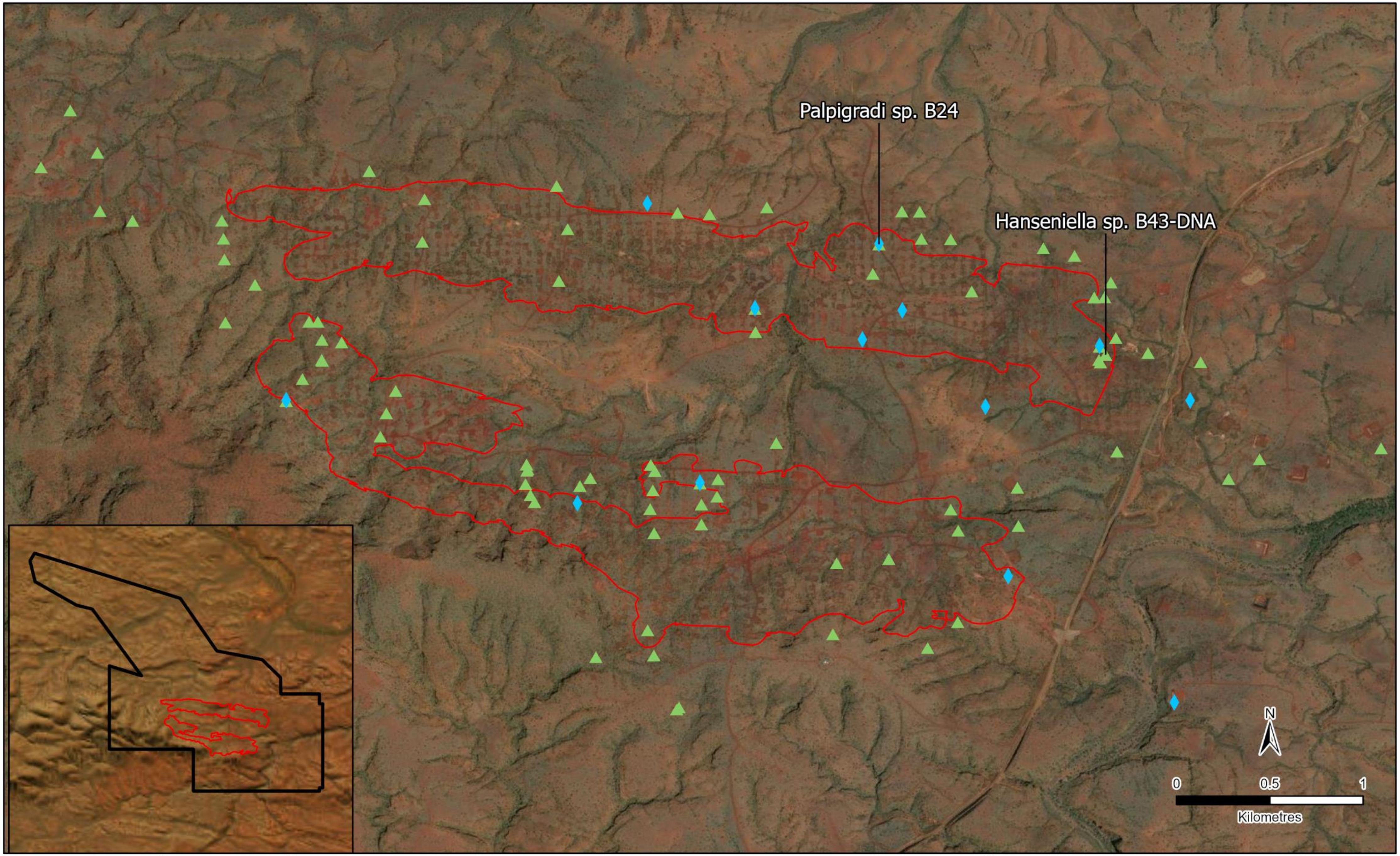


Figure 7. Desktop records of Palpigradi sp. B24, Hanseniella sp. B43-DNA and other subterranean species in the surroundings of the Ministers North pit

4.3. Field survey

The field survey collected 8,537 specimens, of which 1,666 were subterranean and 6,871 were surface invertebrates. The vast majority of subterranean specimens were troglofauna species (Table 6; Figures 8 and 9).

4.3.1. Stygofauna

In total, 117 stygofauna specimens belonging to six species were collected from 11 different holes during the field survey (Figure 8). Annelids were the most abundant group (78 specimens), followed by nematodes (34 specimens) and crustaceans (three specimens). Crustacea was the most diverse group with three species (one amphipod, one copepod, and one ostracod). At least two species of annelids were collected, and the nematodes were classified as higher order. There were no collected species potentially restricted to the Survey Area. The species collected were:

1. Enchytraeidae 'E06'. Ten specimens collected from MN0634R, five from MN1369R, 33 from MN1409R, and 11 from MN2520R; This species has also been collected at Yandi;
2. Enchytraeidae 'OB3'. One specimen collected from MN1137R, and 18 from MN1178R. This species has also been collected at Yandi;
3. Enchytraeidae `3 bundle` s.l. (short sclero). One specimen collected from MN1378RE, and one from MN0945R. Although these specimens were classified as higher order, they possibly belong to either Enchytraeidae 'E06' or Enchytraeidae 'OB3' species;
4. *Diacyclops* `BCY059` (*humphreysi* s.l.). One specimen collected from MN0737R. This species has also been collected at Yandi;
5. *Meridiescandona marillanae*. One specimen collected from HMN0037. This species has also been collected at Yandi;
6. Paramelitidae sp. One specimen without its rear end was collected from MN0737R. Although many paramelitid amphipods are common in the area, as shown in the desktop search (Appendix 1), this specimen could not be identified beyond family level because of the missing body parts;
7. Nematoda spp. Thirty-three specimens collected from MN1428R and one specimen collected from MN1178R.

4.3.2. Troglofauna

In total, 1551 troglofauna specimens belonging to at least 47 species were collected in 185 different holes (Figure 9; Table 6). The most abundant group was Insecta (1230 specimens), followed by Myriapoda (165 specimens), Arachnida (125 specimens), Crustacea (18 specimens) and Entognatha (13 specimens). The most specious group was Insecta (20 species), followed by Arachnida (16 species), Myriapoda (7 species), Isopoda (two species) and Entognatha (two species). Of the 47 species of troglofauna, 29 are known only from the Survey Area (Table 6).

4.4. Molecular results

The results of the molecular analyses are presented in Table 7. Sequencing was successful for 85 of the 89 specimens.

4.5. Combined results

The distribution of the species retrieved from the desktop search and collected during the survey in the Survey Area were combined and shown on surface geological maps (Figures 10-19, Table 8).

Table 6. Troglofauna species collected in the Survey Area during the 2023 and 2024 surveys.

Higher order	Lowest identification	No. of specimens	Collection locations	Survey area only	Linear distribution	DNA	Comments
Arthropoda							
Arachnida							
Opiliones							
Assamiidae	*Dampetrus* sp. B05 (nr *isolatus*)	3	MN2397R, MN0345R	Yes	3 km		One individual also collected at MN in 2018
Palpigradi	Palpigradi \`BPAL054\`	1	MN1125R	Yes	Singleton	X	
Pseudoscorpiones							
Chthoniidae	*Lagynochthonius* sp. B20 (= sp. S04)	22	MN0321R, MN0711R, MN0444R, MN2338R, MN2388R, MN0889R, MN1635R, MN0337R, MN2463R, MN0511R, MN2473R, MN1671R, MN1603R, MN1544R, MN1261R, MN1002R, MN0885R, MN2614R, MN0313R, MN1327R	Yes	4.3 km	X	Ten individuals also collected at MN in 2009, 2010, 2017 and 2018
	Tyrannochthonius \`BPS499\`	1	MN0675R	Yes	Singleton		
Hyidae	*Indohya* \`BPS560\`	2	MN2323R, MN2614R	Yes	3.3 km	X	
Schizomida							
Hubbardiidae	*Draculoides* sp.	1	MN0704R	Unknown			Higher order identification
	Draculoides \`BSC036\` (SCH030 complex)	4	MN0295R, MN0862DTM, MN0361R	No	16.5 km	X	
	Draculoides \`BSC042-DNA\`	8	MN0878R, MN1544R, MN1146R, MN0927R, MN1092R	Yes	3 km	X	Four individuals also collected at MN in 2017 and 2018

Higher order	Lowest identification	No. of specimens	Collection locations	Survey area only	Linear distribution	DNA	Comments
	Draculoides `SCH002`	37	MN1476R, MN1635R, MN1291R, MN1172R, MN1729DTM, MN1369R, MN1434R, MN2286R, MN2307R, MN0371R, MN0977R, MN1550R, MN1222R, MN1327R, MN1381R, MN2505R, MN1056R, MN2596R, MN1483R, MN1363R, MN2481R, MN1318R, MN1725DTM, MN1428R	Yes	5 km	X	Nine individuals also collected at MN in 2017 and 2018
	Draculoides `SCH065`	8	MN0603R, MN1603R, MN0445RE, MN2316R, MN1604R, MN2375R, MN2368R	Yes	5 km	X	Six individuals also collected at MN in 2017 and 2018
Araneae							
Gnaphosidae	nr *Encoptarthria* `BAR142`	1	MN1404RE	Yes	Singleton		
Linyphiidae	Linyphiidae `BAR148`	12	MN2388R, MN2382R, MN0866DTM, MN1690R	Yes	2 km		
Oonopidae	*Pelicinus* `BAR133`	16	MN2307R, MN2382R, MN0603R, MN2307R, MN0295R, MN1172R, MN2382R, MN1729DTM, MN2614R, MN1146R, MN1371R	Yes	4.3 km		Two individuals also collected at MN in 2020
	Prethopalpus `BAR145`	3	MN0862DTM, MN1603R, MN0336R	Yes	2.5 km	X	
	Prethopalpus `BAR146`	2	MN1238R	Yes	Single bore	X	
Symphytognathidae	*Anapistula* `BAR147`	4	MN0885R	Yes	Single bore		
Malacostraca							
Isopoda							
Armadillidae	*Troglarmadillo* sp. B03	1	MN2346R	No	27 km	X	

Higher order	Lowest identification	No. of specimens	Collection locations	Survey area only	Linear distribution	DNA	Comments
	Troglarmadillo sp. B64 (= sp. S14)	17	MN2586R, MN1547R, MN0875R, MN2652R, MN1045R, MN1396R, MN1402R, MN0737R, EXR0406, MN0735R, MN0445RE, MN0287R, MN1369R, EXR0512, MN0905R, MN0945R, MN1507R, MN2277R, MN2346R, MN2316R, MN2411R, MN1238R, MN0607R, MN2606R, MN1604R, MN2422R, MN2368R, MN2450R, MN1546R, MN2312R, MN0336R, MN0885R, MN0876R, MN1146R, MN1182R, MN1194R, MN1448R	Yes	4.5 km		Nine individuals also collected at MN in 2010, 2017 and 2018
Diplopoda							
Polyxenida							
Lophoproctidae	*Lophoturus madecassus*	149	MN2586R, MN1547R, MN0875R, MN2652R, MN1045R, MN1396R, MN1402R, MN0737R, EXR0406, MN0735R, MN0445RE, MN0287R, MN1369R, EXR0512, MN0905R, MN0945R, MN1507R, MN2277R, MN2346R, MN2316R, MN2411R, MN1238R, MN0607R, MN2606R, MN1604R, MN2422R, MN2368R, MN2450R, MN1546R, MN2312R, MN0336R, MN0885R, MN0876R, MN1146R, MN1182R, MN1194R, MN1448R	No	Widespread in WA		
Pauropoda							
Tetramerocerata							
Pauropodidae	Pauropodidae `BPU118`	1	MN1179R	Yes	Singleton		
	Pauropodidae `BPU119`	1	MN2364R	Yes	Singleton		
	Pauropodidae sp. B01 s.l.	4	MN2313R, MN2397R, MN0603R	No	Widespread in WA		

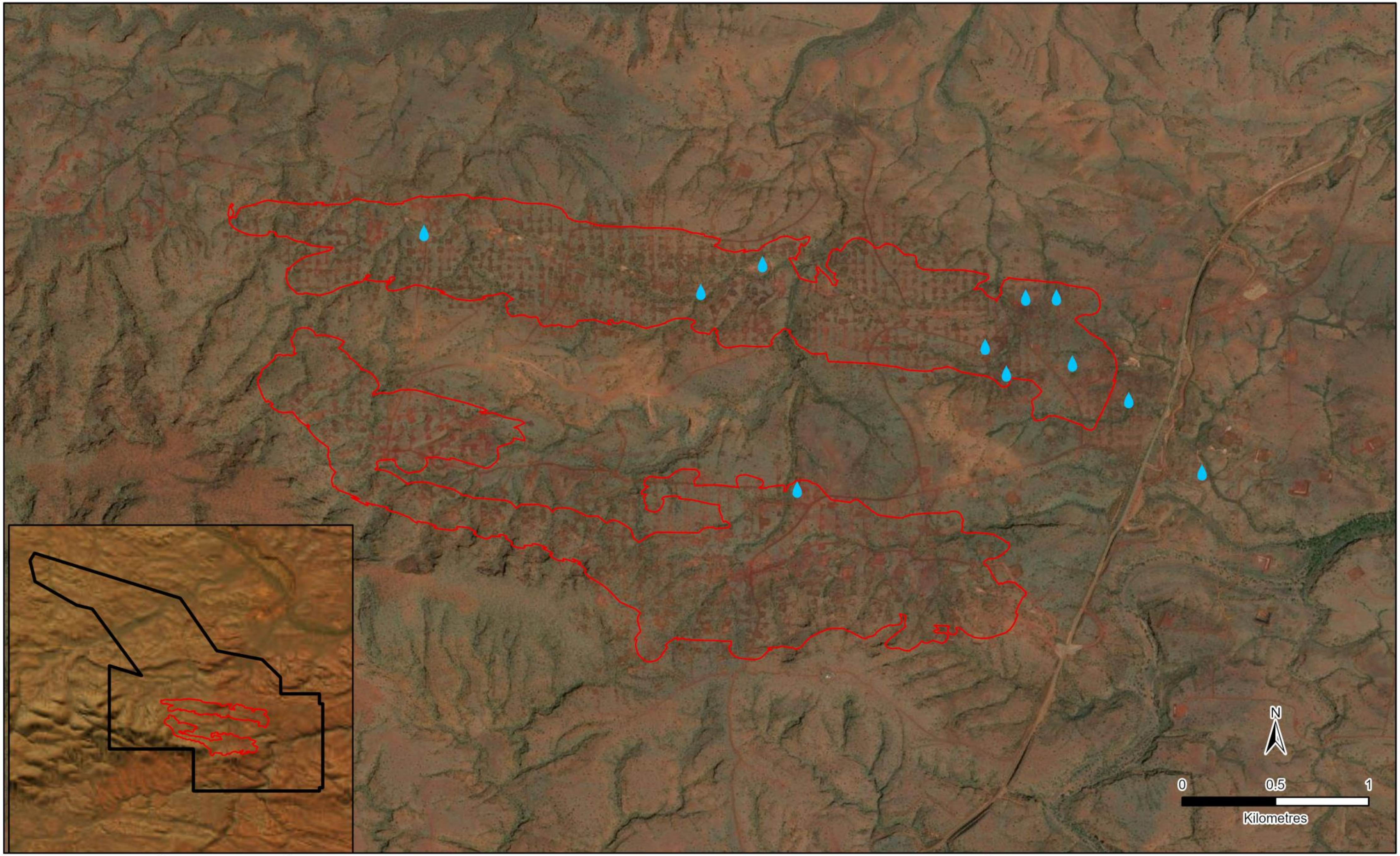
Higher order	Lowest identification	No. of specimens	Collection locations	Survey area only	Linear distribution	DNA	Comments
Symphyla							
Cephalostigmata							
Scutigerellidae	*Hanseniella* `BSYM129`	1	MN0890R	Yes	Singleton	X	
	Hanseniella sp. B42-DNA	8	MN2307R, MN1238R, MN1291R	Yes	3 km	X	One individual also collected at MN in 2017
	Hanseniella sp. B43-DNA	1	MN0708R, MN1178R	Yes	1.8 km	X	One individual also collected at MN in 2017
Entognatha							
Diplura							
Japygidae	Japygidae sp. B34	12	MN0310R, MN2627R, MN2534R, MN1472R, MN1072R, MN2382R, MN2277R, MN1108R, MN1363R, MN1275R, MN1422R, MN1428R	No	26.5 km		Two individuals also collected at MN in 2020
Projapygidae	Projapygidae `BDP239`	1	MN1262R	Yes	Singleton	X	
Insecta							
Zygentoma							
Nicoletiidae	*Dodecastyla* `BZY111`	28	MN1603R, MN2307R, MN0756R, MN0295R, MN1284R, MN0878R, MN2346R, MN0905R, MN0752R, MN1729DTM, MN2613R, MN0480R, MN1608R, MN1146R, MN2606R, MN1462R, MN2375R	No	14.5 km	X	23 individuals also collected at MN in 2009, 2010, 2017, 2018 and 2020
	Trinemura `BZY112`	7	MN0875R, MN1603R, MN1369R, MN1045R, MN2288R, MN0927R, MN1650R	Yes	2 km	X	
Blattodea							
Blattidae	Blattidae sp. B06 (= sp. S02)	29	MN1635R, MN1549R, MN1547R, MN0337R, MN0872R, MN0878R, MN0359R, MN0985R, MN1045R,	No	Widespread in Pilbara		

Higher order	Lowest identification	No. of specimens	Collection locations	Survey area only	Linear distribution	DNA	Comments
			MN1178R, MN1059R, MN1072R, MN1222R, MN1671R, MN0394R, MN0993R, MN1177R				
Nocticolidae	*Nocticola* `BBL038 / B10` (*cockingi* s.l.)	260	MN0977R, MN0875R, MN0878R, MN2397R, MN0365R, MN0359R, MN0872R, MN1603R, MN0032R, MN1061R, MN1662R, MN1547R, MN2650R, MN1476R, MN0314R, MN0889R, MN2627R, MN1635R, MN1445R, MN1123R, MN2382R, MN0337R, MN2417R, MN0345R, MN2307R, MN0704R, MN1368R, MN0756R, MN1472R, MN2313R, MN0732R, MN1369R, MN0323R, MN0417R, MN1668R, MN0603R, MN0857DTM, MN1004R, MN0752R, MN0866DTM, MN0295R, MN0708R, MN0862DTM, MN2411R, MN1072R, MN2316R, MN2473R, MN1059R, MN1327R, MN0445RE, MN1550R, EXR0765, MN1238R, MN1671R, MN1544R, MN1291R, MN1421R, MN1729DTM, MN0711R, MN2613R, MN1215R, MN1108R, MN1146R, MN1422R, MN1433RE, MN2390R, MN1262R, MN1092R, MN0892R, MN1157R, MN2422R, MN1261R, MN1002R, MN1241R, MN2606R, MN1627R, MN0361R, MN1460R, MN0573R, MN2324R, MN2505R, MN1275R, MN1371R, MN1056R, MN1318R, MN0880R, MN2536R, MN1604R, MN2385R, MN2345R, MN0332R, MN2481R	No	64 km	X	

Higher order	Lowest identification	No. of specimens	Collection locations	Survey area only	Linear distribution	DNA	Comments
	Nocticola `BBL038` (*cockingi* s.l.)	2	MN1402R, MN0890R	No	26.8 km	X	
	Nocticola `BBL044`(*quartermainei* gp)	13	MN0848DTM, MN0735R, MN1182R	No	14 km	X	
Hemiptera							
Cixiidae	Cixiidae sp. B02	26	MN1547R, MN0878R, MN0365R, MN1089R, MN1402R, MN1178R, MN0862DTM, MN1238R, MN2459R, MN1650R, MN0336R, MN0361R, MN1275R	No	Widespread in WA		
Meenoplidae	Meenoplidae sp. WAM-PHAC001/H-HEM003	18	MN0703R, MN2411R, MN2625R, MN1729DTM, MN1056R, MN1182R	No		X	
	Phaconeura Biologic HEMI002	2	MN2358R	Yes	Single bore	X	
	Phaconeura sp. B13	260	MN2388R, MN2382R, MN1603R, MN2499R, MN0337R, MN2650R, MN2627R, MN0878R, MN0359R, MN0365R, MN0985R, MN1045R, MN0032R, MN1396R, MN0514R, MN0295R, MN1544R, MN2411R, MN0866DTM, MN2463R, MN1671R, MN1327R, MN1604R, MN2375R, MN1650R, MN1748R, MN1546R, MN0336R, MN0885R, MN1262R, MN1261R, MN1215R	No	34 km	X	Six individuals also collected at MN in 2010 and 2020

Higher order	Lowest identification	No. of specimens	Collection locations	Survey area only	Linear distribution	DNA	Comments
Coleoptera	Coleoptera `BCO236`	1	EXR0765	Yes	Singleton		
	Coleoptera sp. B09	4	MN0977R, MN1373R, MN1177R	No	12.5 km		One individual also collected at MN in 2017
Carabidae	*Gilesdytes vixsulcatus*	2	MN0708R, MN1464R	No	29.5 km		
	Typhlozuphium sp. B04	3	MN1673R, MN1476R, MN2473R	Yes	2.5 km	X	One individual also collected at MN in 2018
Curculionidae	Cryptorhynchinae sp.	7	MN1476R, MN0708R, MN1241R, MN1690R, MN2520R, MN1422R	Unknown			Higher order identification
	Cryptorhynchinae sp. B10	34	MN0032R, MN1547R, MN2338R, MN0739R, MN1549R, MN0889R, MN0862DTM, MN0445RE, MN0704R, MN1486R, MN1404RE, MN2382R, MN1261R, MN1056R, MN0977R, MN0336R, MN1240R	Yes	5 km		Four individuals also collected at MN in 2010, 2017, 2018 and 2020
	Curculionidae Genus 1 `BCO228`	2	MN2397R, MN1056R	Yes	2 km		
	Curculionidae Genus 1 sp. B15 (B02=S02 clade)	3	MN0704R, MN2422R, MN1462R	Yes	5.2 km		Six individuals also collected at MN in 2010 and 2018

Higher order	Lowest identification	No. of specimens	Collection locations	Survey area only	Linear distribution	DNA	Comments
Endomychidae	*Holoparamecus* `BCO255`	11	MN2346R, MN2520R	Yes	1.7 km		
Diptera							
Sciaridae	*Allopnyxia* sp. B01	518	MN2586R, MN2307R, MN2349R, MN0350R, MN2627R, MN0872R, MN0875R, MN0878R, MN0889R, MN0977R, MN1061R, MN1264R, MN1341R, MN1476R, MN1472R, MN0345R, MN2288R, MN2277R, MN2316R, MN2379R, MN1004R, MN1072R, MN1671R, MN1327R, MN1392RE, MN0336R, MN0305RE, MN1363R	No	Widespread in WA		



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Date: 11/04/2024

Legend

Ministers North Pit Boundaries

Stygofauna

Figure 8. Locations where stygofauna were recorded during the three rounds of survey

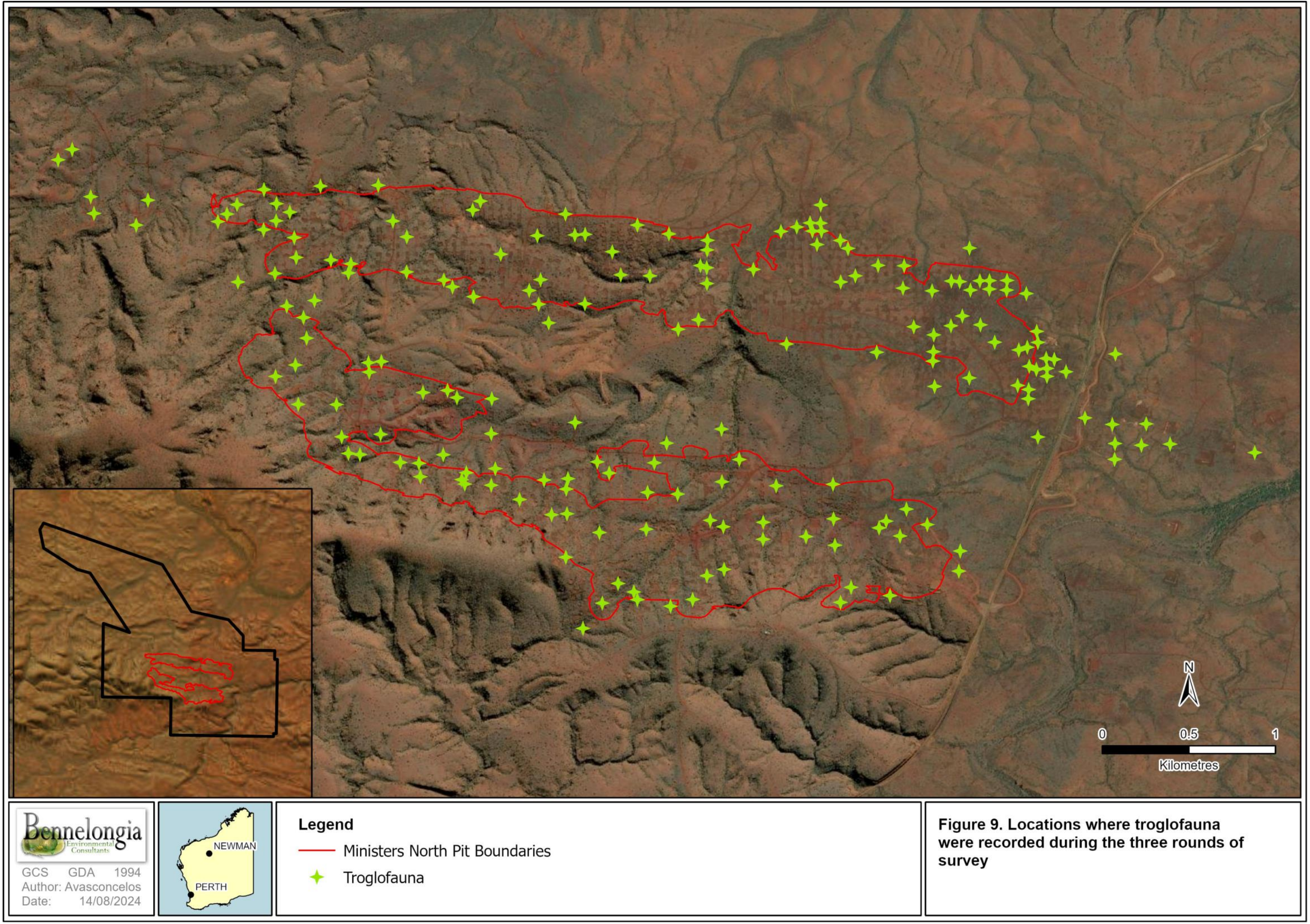


Figure 9. Locations where troglofauna were recorded during the three rounds of survey

Table 7. Results of the molecular analysis.
'Specimen no.' refers to the unique number assigned to that specimen in the Bennelongia database (provided for all specimens in the associated data package). Red highlighting indicates specimens for which sequencing was unsuccessful.

Morphological ID	Bore code	Sample type	Date collected	Specimen no.	DNA results	Final ID
Annelida						
Enchytraeidae `3 bundle` s.l. (short sclero)	MN0634R	Scrape	30/04/2023	749988	This sequence is 0.92% distant to Enchytraeidae_E06-B03 stored in the Bennelongia database. Consequently, these two animals were assigned the same, new species code.	Enchytraeidae 'E06'
Enchytraeidae `3 bundle` s.l. (short sclero)	MN1369R	Scrape	30/04/2023	750166	This sequence is 0.92% distant to Enchytraeidae_E06-B03 stored in the Bennelongia database. Consequently, these two animals were assigned the same, new species code.	Enchytraeidae 'E06'
Enchytraeidae `3 bundle` s.l. (short sclero)	MN1409R	Net	19/10/2023	756234	This sequence is 1.15% distant to Enchytraeidae_E06-B03 stored in the Bennelongia database. Consequently, these two animals were assigned the same, new species code.	Enchytraeidae 'E06'
Enchytraeidae `3 bundle` s.l. (short sclero)	MN1409R	Net	19/10/2023	762425	This sequence is 1.15% distant to Enchytraeidae_E06-B03 stored in the Bennelongia database. Consequently, these two animals were assigned the same, new species code.	Enchytraeidae 'E06'
Enchytraeidae `3 bundle` s.l. (short sclero)	MN1409R	Net	19/10/2023	762426	This sequence is 1.15% distant to Enchytraeidae_E06-B03 stored in the Bennelongia database. Consequently, these two animals were assigned the same, new species code.	Enchytraeidae 'E06'
Enchytraeidae `3 bundle` s.l. (short sclero)	MN2520R	Trap 1	22/11/2023	759613	This sequence is 4.46% distant to Enchytraeidae_E06-05 stored in the Bennelongia database. Consequently, these two animals were assigned the same, new species code.	Enchytraeidae 'E06'

Morphological ID	Bore code	Sample type	Date collected	Specimen no.	DNA results	Final ID
Enchytraeidae `3 bundle` s.l. (short sclero)	MN1137R	Net	19/10/2023	756380	This sequence is 6.08% distant to Enchytraeidae sp. Biologic-OLIG004 stored in GenBank and 6% distant to Enchytraeidae_OB3_HEOP0317 stored in the Bennelongia database. Consequently, these two animals were assigned the same, new species code.	Enchytraeidae 'OB3'
Enchytraeidae `3 bundle` s.l. (short sclero)	MN1178R	Net	19/10/2023	762427	This sequence is 6.08% distant to Enchytraeidae sp. Biologic-OLIG004 stored in GenBank and 6% distant to Enchytraeidae_OB3_HEOP0317 stored in the Bennelongia database. Consequently, these two animals were assigned the same, new species code.	Enchytraeidae 'OB3'
Enchytraeidae `3 bundle` s.l. (short sclero)	MN1178R	Net	29/06/2023	751637	Sequencing unsuccessful. However, this specimen was found in the same bore as the specimen ‘762427’ identified as Enchytraeidae 'OB3'. Therefore, it is very likely that this specimen is also the species Enchytraeidae 'OB3'.	Enchytraeidae 'OB3'
Enchytraeidae `3 bundle` s.l. (short sclero)	MN1178R	Net	29/06/2023	762424	Sequencing unsuccessful. However, this specimen was found in the same bore as the specimen ‘762427’ identified as Enchytraeidae 'OB3'. Therefore, it is very likely that this specimen is also Enchytraeidae 'OB3'.	Enchytraeidae 'OB3'
Enchytraeidae `3 bundle` s.l. (short sclero)	MN1178R	Net	19/10/2023	756378	Sequencing unsuccessful. However, this specimen was found in the same bore as the specimen ‘762427’ identified as Enchytraeidae 'OB3'. Therefore, it is very likely that this specimen is also Enchytraeidae 'OB3'.	Enchytraeidae 'OB3'
Enchytraeidae `3 bundle` s.l. (short sclero)	MN1378RE	Scrape	30/04/2023	750076	Failed – low DNA yield. Identification updated based on morphology. However,	Enchytraeidae `3 bundle` s.l. (short sclero)

Morphological ID	Bore code	Sample type	Date collected	Specimen no.	DNA results	Final ID
					it is very likely that this species is either Enchytraeidae 'E06' or Enchytraeidae 'OB3'.	
Enchytraeidae `3 bundle` s.l. (short sclero)	MN0945R	Trap 1	29/07/2023	760019	Failed – low DNA yield. Identification updated based on morphology. However, it is very likely that this species is either Enchytraeidae 'E06' or Enchytraeidae 'OB3'	Enchytraeidae `3 bundle` s.l. (short sclero)
Palpigradi						
Palpigradi 'BPAL054'	MN1125R	Scrape	24/11/2024	758538	There were no close hits to other palpigrades sequences stored on GenBank or Bennelongia database. This specimen has 79.72% similarity to Palpigradi B23, and 82.82% similarity to Palpigradi B24. Therefore, it is likely to be a new species.	Palpigradi `BPAL054`
Pseudoscorpiones						
Lagynochthonius `BPS518`	MN2388R	Scrape	27/04/2023	750208	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is 100% similar to the sequence of the specimen from bore MN1671R. Therefore, they are likely to be the same, new species.	*Lagynochthonius* sp. B20 (= sp. S04)
Lagynochthonius sp. B20 (= sp. S04)	MN0889R	Scrape	28/04/2023	750219	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is 90.63% similar to the sequences of the specimens from MN2388R and MN1671R bores. Therefore, they are likely to be the same, new species.	*Lagynochthonius* sp. B20 (= sp. S04)
Lagynochthonius sp. B20 (= sp. S04)	MN1671R	Scrape	1/08/2023	753319	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is 100% similar to the sequence of the specimen from bore MN2388R. Therefore, they are likely to be the same, new species.	*Lagynochthonius* sp. B20 (= sp. S04)

Morphological ID	Bore code	Sample type	Date collected	Specimen no.	DNA results	Final ID
Indohya sp. 'BPS560'	MN2323R	Scrape	30/07/2023	752863	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is 90.02% similar to the sequence of the specimen from bore MN2614R, but they were found only 3 km apart. Therefore, they are likely to be the same, new species	*Indohya* \`BPS560\`
Indohya sp.	MN2614R	Scrape	21/11/2023	758155	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is 90.02% similar to the sequence of the specimen from bore MN2323R, , but they were found only 3 km apart. Therefore, they are likely to be the same, new species	*Indohya* \`BPS560\`
Schizomida						
Draculoides sp.	MN1650R	Scrape	23/11/2023	758618	Failed – low DNA yield. Identification updated based on morphology.	*Draculoides* sp.
Draculoides sp.	MN0704R	Net	29/06/2023	751558	Failed – low DNA yield. Identification updated based on morphology.	*Draculoides* sp.
Draculoides sp.	MN0862DTM	Trap 1	17/10/2023	756658	This sequence is 4.00% distant to *Draculoides* BSC036 (SCH030_complex) stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* BSC036
Draculoides sp.	MN0361R	Scrape	24/11/2023	758597	This sequence is 4.00% distant to *Draculoides* BSC036 (SCH030_complex) stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* BSC036
Draculoides sp.	MN0878R	Scrape	29/07/2023	753158	The nearest match was with *Draculoides* BSC042-DNA stored in Bennelongia database (96.27%-98.55% similarity). Consequently, these two animals were assigned the same species code.	*Draculoides* BSC042_DNA

Morphological ID	Bore code	Sample type	Date collected	Specimen no.	DNA results	Final ID
Draculoides `BSC119`	MN1544R	Scrape	30/07/2023	753337	The nearest match was with *Draculoides* BSC042-DNA stored in Bennelongia database (96.27%-98.55% similarity). Consequently, these two animals were assigned the same species code.	*Draculoides* BSC042_DNA
Draculoides sp.	MN0927R	Trap 1	30/01/2024	759691	The nearest match was with *Draculoides* BSC042-DNA stored in Bennelongia database (96.27%-98.55% similarity). Consequently, these two animals were assigned the same species code.	*Draculoides* BSC042_DNA
Draculoides sp.	MN1092R	Trap 1	30/01/2024	759757	The nearest match was with *Draculoides* BSC042-DNA stored in Bennelongia database (96.27%-98.55% similarity). Consequently, these two animals were assigned the same species code.	*Draculoides* BSC042_DNA
Draculoides sp.	MN1146R	Trap 1	30/01/2024	759649	The nearest match was with *Draculoides* BSC042-DNA stored in Bennelongia database (96.27%-98.55% similarity). Consequently, these two animals were assigned the same species code.	*Draculoides* BSC042_DNA
Draculoides sp.	MN1635R	Scrape	27/04/2023	750234	This sequence is 3.04% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN2307R	Trap 1	17/10/2023	756599	This sequence is 100% similar to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN0977R	Trap 1	17/10/2023	756630	This sequence is 0.46% distant to *Draculoides* sp. SCH002 voucher WAMT138755 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002

Morphological ID	Bore code	Sample type	Date collected	Specimen no.	DNA results	Final ID
Draculoides sp.	MN1476R	Scrape	30/04/2023	750200	This sequence is 1.97% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides `BSC037` dna	MN2286R	Trap 1	17/10/2023	756586	This sequence is 1.97% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN0371R	Trap 1	17/10/2023	756617	This sequence is 1.96% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN1550R	Trap 1	17/10/2023	756638	This sequence is 1.96% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN1291R	Trap 1	18/10/2023	756261	This sequence is 2.74% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN1172R	Trap 1	17/10/2023	756288	This sequence is 2.25% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN1327R	Trap 2	18/10/2023	756693	This sequence is 1.97% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002

Morphological ID	Bore code	Sample type	Date collected	Specimen no.	DNA results	Final ID
Draculoides sp.	MN1434R	Trap 1	18/10/2023	756570	This sequence is 1.97% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN1729DTM	Net	18/10/2023	756389	This sequence is 1.97% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN1428R	Net	2/02/2024	759957	This sequence is 2.89% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN2596R	Scrape	22/11/2023	758821	This sequence is 1.96% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides \`BSC037\` dna	MN2505R	Scrape	22/11/2023	758628	This sequence is 1.96% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN1056R	Scrape	24/11/2023	758735	This sequence is 0.38% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN2481R	Trap 1	30/01/2024	759869	This sequence is 1.96% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002

Morphological ID	Bore code	Sample type	Date collected	Specimen no.	DNA results	Final ID
Draculoides `BSC037` dna	MN1483R	Trap 1	31/01/2024	759745	This sequence is 0.02% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN1725DTM	Trap 1	31/01/2024	759920	This sequence is 1.97% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN1363R	Trap 1	31/01/2024	759750	This sequence is 2.74% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN1318R	Trap 1	31/01/2024	759876	This sequence is 2.25% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides sp.	MN1381R	Net	26/11/2023	758244	This sequence is 2.25% distant to *Draculoides* sp. SCH002 voucher WAMT116221 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH002
Draculoides `BSC119`	MN0445RE	Scrape	1/08/2023	753161	This sequence is 4.44% distant to *Draculoides* sp. SCH065 voucher WAMT131652 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH065
Draculoides sp.	MN1603R	Scrape	27/04/2023	750047	This sequence is 4.44% distant to *Draculoides* sp. SCH065 voucher WAMT131652 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH065

Morphological ID	Bore code	Sample type	Date collected	Specimen no.	DNA results	Final ID
Draculoides sp.	MN2316R	Trap 2	17/10/2023	756526	This sequence is 4.17% distant to *Draculoides* sp. SCH065 voucher WAMT131652 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH065
Draculoides sp.	MN1604R	Trap 2	31/01/2024	759694	This sequence is 5.78% distant to *Draculoides* sp. SCH065 voucher WAMT131652 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH065
Draculoides sp.	MN2375R	Trap 1	30/01/2024	759862	This sequence is 4.44% distant to *Draculoides* sp. SCH065 voucher WAMT131652 stored in GenBank. Consequently, these two animals were assigned the same species code.	*Draculoides* sp. SCH065
Araneae						
Prethopalpus sp.	MN1603R	Scrape	1/08/2023	753322	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is similar to the sequences of the specimens from bores MN0862DTM (96.05% similarity) and MN0336R (96.66% similarity). Therefore, they are likely to be the same, new species.	*Prethopalpus* \`BAR145\`
Prethopalpus sp.	MN0862DTM	Scrape	30/07/2023	752858	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is similar to the sequences of the specimens from bores MN1603R (96.05% similarity) and MN0336R (97.87% similarity). Therefore, they are likely to be the same, new species.	*Prethopalpus* \`BAR145\`
Prethopalpus sp.	MN0336R	Scrape	23/11/2023	758601	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is	*Prethopalpus* \`BAR145\`

Morphological ID	Bore code	Sample type	Date collected	Specimen no.	DNA results	Final ID
					similar to the sequences of the specimens from bores MN1603R (96.66% similarity) and MN0862DTM (97.87% similarity). Therefore, they are likely to be the same, new species.	
Prethopalpus sp.	MN1238R	Trap 2	18/10/2023	756532	This sequence is 18-19% distant from *Prethopalpus* `BAR145. The nearest match was with *Prethopalpus* B27_BYO42 (90.65% similarity) stored in Bennelongia database. Therefore, it is likely to be a new species.	*Prethopalpus* `BAR146`
Isopoda						
Troglarmadillo sp.	MN2346R	Trap 1	17/10/2023	759206	This sequence is 8.01% distant to *Troglarmadillo* B_03 stored in the Bennelongia database. Consequently, these two animals were assigned the same, new species code.	*Troglarmadillo* sp. B03
Symphyla						
Hanseniella sp.	MN0890R	Scrape	23/11/2023	758158	This sequence nearest matched with *Hanseniella* BSYM110 (81.47% similarity) stored in Bennelongia database. Therefore, it is likely to be a new species.	*Hanseniella* `BSYM129`
Hanseniella `BSYM125`	MN1238R	Scrape	31/07/2023	753315	This sequence is 1.00% distant to *Hanseniella* B42_DNA stored in the Bennelongia database. Therefore, they are likely to be the same species.	*Hanseniella* sp. B42-DNA
Hanseniella `BSYM125`	MN1291R	Scrape	31/07/2023	753338	This sequence is 1.00% distant to *Hanseniella* B42_DNA stored in the Bennelongia database. Therefore, they are likely to be the same species.	*Hanseniella* sp. B42-DNA
Hanseniella sp.	MN1178R	Net	19/10/2023	756376	This sequence is 3.86% distant to *Hanseniella* B43_DNA stored in the Bennelongia database. Therefore, they are likely to be the same species.	*Hanseniella* sp. B43_DNA
Diplura						

Morphological ID	Bore code	Sample type	Date collected	Specimen no.	DNA results	Final ID
Projapygidae sp.	MN1262R	Trap 1	31/01/2024	759917	This sequence is 13.55% distant from Projapygidae_OP_DPR003 stored in the Bennelongia database and 17.68% distant from Projapygidae sp. Biologic-DIPL005 stored in GenBank. Therefore, it is likely to be a new species.	Projapygidae \`BDP239\`
Zygentoma						
Dodecastyla sp.	MN0878R	Scrape	29/07/2023	753156	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is similar to the sequences of the specimens from bores MN2606R (99.83% similarity) and MN1146R (94.92% similarity). Therefore, they are likely to be the same, new species.	*Dodecastyla* \`BZY111\`
Dodecastyla sp.	MN2606R	Scrape	21/11/2023	758533	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is similar to the sequences of the specimens from bores MN0878R (99.83% similarity) and MN1146R (94.92% similarity). Therefore, they are likely to be the same, new species.	*Dodecastyla* \`BZY111\`
Dodecastyla sp. B02	MN1146R	Scrape	24/11/2023	758164	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is similar to the sequences of the specimens from bores MN0878R (99.83% similarity) and MN2606R (94.92% similarity). Therefore, they are likely to be the same, new species.	*Dodecastyla* \`BZY111\`
Trinemura sp.	MN1603R	Scrape	27/04/2023	750039	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is similar to the sequences of the other	*Trinemura* \`BZY112\`

Morphological ID	Bore code	Sample type	Date collected	Specimen no.	DNA results	Final ID
					specimens of *Trinemura* collected in the survey (93.56-95.42% similarity). Therefore, they are likely to be the same, new species.	
Trinemura sp.	MN1045R	Scrape	29/04/2023	750178	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is similar to the sequences of the other specimens of *Trinemura* collected in the survey (96.44-100% similarity). Therefore, they are likely to be the same, new species.	*Trinemura* \`BZY112\`
Trinemura sp.	MN1369R	Scrape	30/04/2023	750165	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is similar to the sequences of the other specimens of *Trinemura* collected in the survey (96.44-100% similarity). Therefore, they are likely to be the same, new species.	*Trinemura* \`BZY112\`
Trinemura sp.	MN2288R	Scrape	29/07/2023	753148	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is similar to the sequences of the other specimens of *Trinemura* collected in the survey (96.44-100% similarity). Therefore, they are likely to be the same, new species.	*Trinemura* \`BZY112\`
Trinemura sp.	MN0927R	Scrape	23/11/2023	758544	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is similar to the sequences of the other specimens of *Trinemura* collected in the survey (96.44-100% similarity). Therefore, they are likely to be the same, new species.	*Trinemura* \`BZY112\`
Trinemura sp.	MN0875R	Scrape	28/04/2023	749723	There were no close hits to other sequences stored in GenBank or Bennelongia database. This sequence is similar to the sequences of the other	*Trinemura* \`BZY112\`

Morphological ID	Bore code	Sample type	Date collected	Specimen no.	DNA results	Final ID
					specimens of *Trinemura* collected in the survey (96.44-100% similarity). Therefore, they are likely to be the same, new species.	
Blattodea						
Nocticola sp.	MN1402R	Scrape	30/04/2023	750196	This sequence is 1.35-0.23% distant to *Nocticola* BBL038, B09, B36 cockingi_sl. stored in the Bennelongia database. Consequently, these two animals were assigned the same, new species code.	*Nocticola* BBL038
Nocticola sp.	MN0890R	Trap 1	30/01/2024	759829	This sequence is 1.35-0.23% distant to *Nocticola* BBL038, B09, B36 cockingi_sl. stored in the Bennelongia database. Consequently, these two animals were assigned the same, new species code.	*Nocticola* BBL038
Nocticola quartermainei sl	MN0735R	Trap 1	16/10/2023	756364	This sequence is similar to the sequences of the specimens from bores MN0848DTM and MN1182R (99.55% similarity). Therefore, they are likely to be the same species.	*Nocticola* \`BBL044\`(quartermaini gp)
Nocticola quartermainei sl	MN0848DTM	Net	28/06/2023	751564	This sequence is similar to the sequences of the specimens from bores MN0735R (99.55% similarity) and MN1182R (100% similarity). Therefore, they are likely to be the same species.	*Nocticola* \`BBL044\`(quartermaini gp)
Nocticola \`BBL044\`(quartermaini gp)	MN1182R	Scrape	24/11/2023	758652	This sequence is similar to the sequences of the specimens from bores MN0735R (99.55% similarity) and MN0848DTM (100% similarity). Therefore, they are likely to be the same species.	*Nocticola* \`BBL044\`(quartermaini gp)
Nocticola 'quartermaini/cockingi'	MN0756R	Net	28/06/2023	751623	This sequence is 3.16-0.92% distant to *Nocticola* B10 (and *Nocticola* B36) stored in the Bennelongia database. Consequently, this animal was assigned the same species code.	*Nocticola* sp. B10

Morphological ID	Bore code	Sample type	Date collected	Specimen no.	DNA results	Final ID
Nocticola sp.	MN2313R	Trap 1	27/06/2023	751740	This sequence is 3.16-0.92% distant to *Nocticola* B10 (and *Nocticola* B36) stored in the Bennelongia database. Consequently, this animal was assigned the same species code.	*Nocticola* sp. B10
Nocticola 'quartermaini/cockingi'	MN2650R	Scrape	28/04/2023	750171	This sequence is 3.16-0.92% distant to *Nocticola* B10 (and *Nocticola* B36) stored in the Bennelongia database. Consequently, this animal was assigned the same species code.	*Nocticola* sp. B10
Nocticola `BBL038 / B10` (cockingi s.l.)	MN2397R	Scrape	29/04/2023	749972	This sequence is 3.16-0.92% distant to *Nocticola* B10 (and *Nocticola* B36) stored in the Bennelongia database. Consequently, this animal was assigned the same species code.	*Nocticola* sp. B10
Hemiptera						
Phaconeura sp. Red eye	MN2625R	Net	20/10/2023	756383	Best Bennelongia hit *Phaconeura* B15-DNA (90.04%). Best Genbank hit *Phaconeura* sp. WAM PHAC001 voucher WAME98568 (98.76%). Separate species from the other four sequenced *Phaconeura*.	Meenoplidae sp. WAM-PHAC001/H-HEM003
Phaconeura sp. Red eye	MN2358R	Scrape	23/11/2023	758827	This sequence is 100% similar to *Phaconeura* sp. Biologic-HEMI002 isolate BMR00486 stored in GenBank. Consequently, this animal was assigned the same species code.	*Phaconeura* Biologic HEMI002
Phaconeura `BHE032`dna	MN2375R	Scrape	22/11/2023	758795	This sequence is 90.22-92.97% similar to *Phaconeura* sp. B13 stored in the Bennelongia database, and 97.29-99.13% similar to the sequences of the specimens from bores MN0336R and MN1261R. Therefore, they are likely to be the same species.	*Phaconeura* B13

Morphological ID	Bore code	Sample type	Date collected	Specimen no.	DNA results	Final ID
Phaconeura `BHE032` dna	MN0336R	Scrape	23/11/2023	758602	This sequence is 90.22-92.97% similar to *Phaconeura* sp. B13 stored in the Bennelongia database, and 97.29-99.13% similar to the sequences of the specimens from bores MN2375R and MN1261R. Therefore, they are likely to be the same species.	*Phaconeura* B13
Phaconeura `BHE032`dna	MN1261R	Scrape	25/11/2023	758518	This sequence is 90.22-92.97% similar to *Phaconeura* sp. B13 stored in the Bennelongia database, and 97.29-99.13% similar to the sequences of the specimens from bores MN2375R and MN0336R. Therefore, they are likely to be the same species.	*Phaconeura* B13
Coleoptera						
Typhlozuphium sp. B04	MN2473R	Scrape	1/08/2023	752926	This sequence is 3.31% distant from *Typhlozuphium* B04 stored in the Bennelongia database. Consequently, this animal was assigned the same species code.	*Typhlozuphium* sp. B04

Table 8. Abbreviations used in the species distribution maps (Figures 10-19).

Geology code	Geology
AFjr	Jeerinah - Roy Hill Shale Member
CID	Robe - Oolitic channel iron deposit
Czb	Silcrete (indurated)
Czc	Colluvium & alluvium
Czcb	Colluvium & alluvium (chert & BIF clasts)
Czcg	Indurated colluvium (canga)
Czk	Calcrete
Czl	Ferricrete (laterite)
Czpi	Consolidated ferruginous pisolites
H2/PHbd	Martite goethitic supergene ore (ochereous)
H2/PHbj	Martite goethitic supergene ore (ochereous)
PHbd	Brockman - Dales Gorge (BIF & shale)
PHbj	Brockman - Joffre (BIF with chert and shale)
PHbw	Brockman - Mt Whaleback Shale
Pd	Dolerite dykes
Qa	Alluvium (drainage channels)
Qc	Talus & colluvium

4.5.1. Annelids

Representatives of two families of annelid worms were collected during the survey: Tubificidae and Enchytraeidae. Two specimens of the worm Tubificinae sp. B09 were collected from a single bore (46 m to groundwater) in 2018 by Bennelongia to the east and outside of the Ministers North northern pit (Figure 10). The enchytraeids are not restricted to the Survey Area and are, therefore, not considered to be of conservation concern.

4.5.2. Opilionid

Dampetrus sp. B05 (nr isolatus) is currently only known from the survey area. *Dampetrus* sp. B05 (nr isolatus) was collected from two bores 3 km apart. One of those bores is located outside the proposed mining pits (Figure 11), therefore, this species is not considered to be of conservation concern.

4.5.3. Palpigrads

A single specimen of palpigrad was collected during the survey (Palpigradi `BPAL054`). DNA of the individual collected showed that the specimen is not a representative of Palpigradi sp. B24 or Palpigradi sp. B23 collected in previous surveys. There are now three species of Palpigradi known to only occur in the Survey Area (Palpigradi sp. B24, Palpigradi sp. B23, and Palpigradi `BPAL054`) (Figure 11). Palpigradi sp. B23 was collected outside the edge of the northern mining pit (Figure 11). Palpigradi sp. B24 was collected in the northeast of the northern mining pit (Figure 11). Palpigradi `BPAL054` was collected close to the northern edge of the northern mining pit (Figure 11). Although it is common for palpigrades to have restricted ranges (e.g. Barranco and Harvey 2008), the two species of Palpigradi (Palpigradi sp. B24 and Palpigradi `BPAL054`) recorded inside the proposed mining pits possibly have ranges that surpass the impact area due to the extention of the geology they were found (Figure 11).

4.5.4. Pseudoscorpiones

Three species of pseudoscorpions are currently only known from the Survey Area (*Lagynochthonius* sp. B20 (= sp. S04), *Tyrannochthonius* 'BPS499' and *Indohya* 'BPS560'). However, all three species have been collected outside the proposed mining pits (Figure 11).

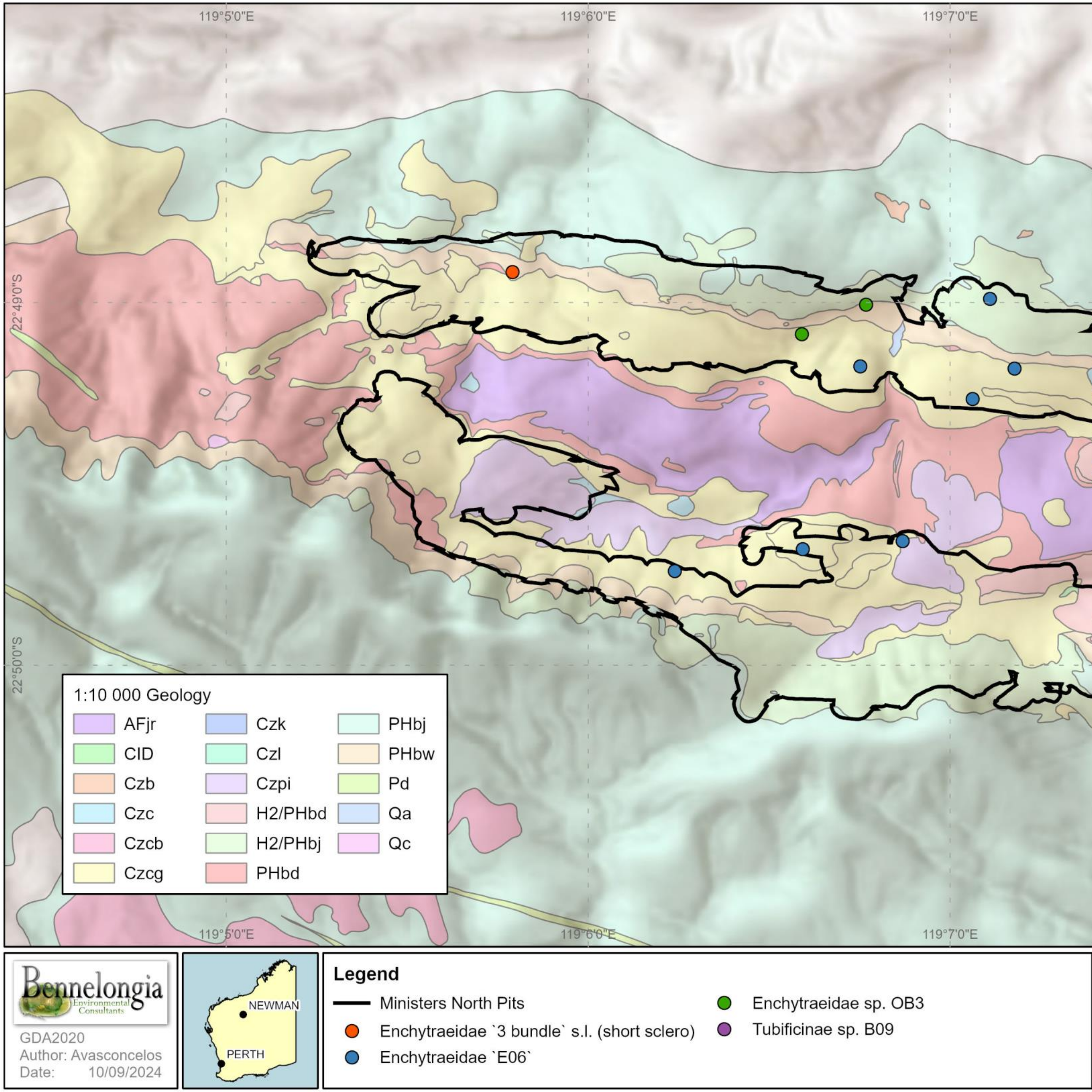


Figure 10. Distribution of Annelida recorded around the Ministers North pits

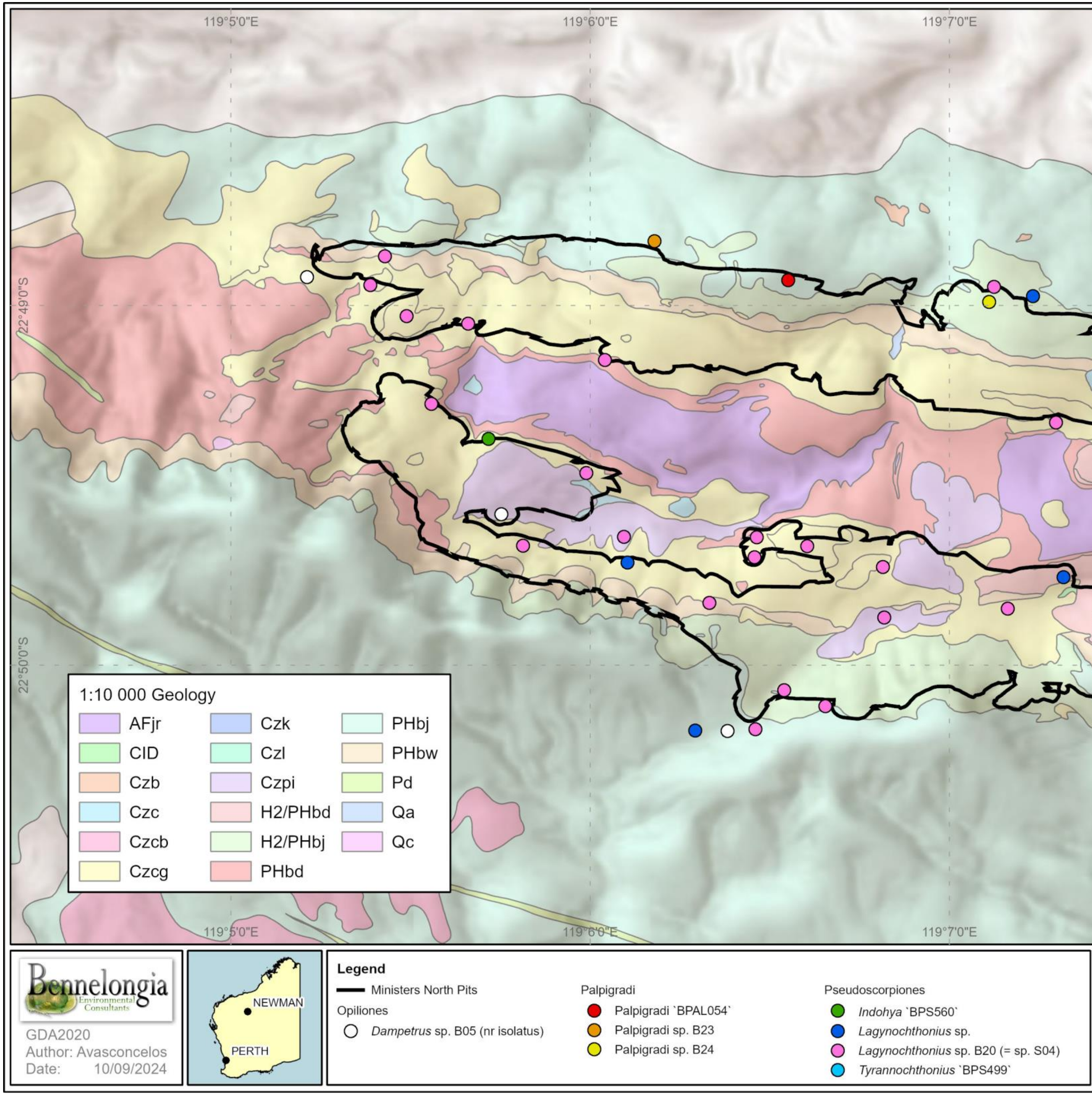


Figure 11. Distribution of Opiliones, Palpigradi and Pseudoscorpiones recorded around the Ministers North pits

4.5.5. Schizomids

Five species of *Draculoides* are currently only known from the Survey Area (*Draculoides* 'BSC036' (SCH030 complex), *Draculoides* 'BSC039', *Draculoides* 'BSC042-DNA', *Draculoides* 'SCH002', and *Draculoides* 'SCH065') (Figure 12). Schizomids tend to have small ranges (Harms et al. 2018), with an average of 2.6 km^2 (Halse 2018). However, all the species collected in the Survey Area had records from outside the proposed mining pits.

4.5.6. Spiders

Eleven species of spiders are currently only known from the Survey Area (*Anapistula* 'BAR147', *Anapistula* sp. S01, Gnaphosidae sp. S03, Linyphiidae 'BAR148', Linyphiidae sp. S01, Oonopidae sp. B19-DNA, *Pelicinus* 'BAR133', *Prethopalpus* 'BAR145', *Prethopalpus* 'BAR146', *Prethopalpus* sp. B32, and nr *Encoptarthria* 'BAR142') (Figure 13). All the species were collected outside of the proposed pits except for *Anapistula* sp. S01, *Prethopalpus* 'BAR146', *Prethopalpus* sp. B32, and nr *Encoptarthria* 'BAR142'. *Anapistula* sp. S01 was recorded from a single bore in the northern mining pit (Figure 13). *Prethopalpus* 'BAR146' was collect in a single bore in the border of the northern mining pit (Figure 13). *Prethopalpus* sp. B32 was collected in both northern and southern mining pits in two bores 1.5 km apart (Figure 13). The species nr *Encoptarthria* 'BAR142' was found in a single bore in the northern mining pit (Figure 13).

4.5.7. Ostracod

One ostracod species was recorded in the Survey Area (*Meridiescandona marillanae*) in the east of the northern mining pit in an area adjacent to Yandicoogina Creek (Figures 4, 14). However, this species is not restricted to the Survey Area.

4.5.8. Copepod

One copepod species was recorded in the Survey Area (*Diacyclops* 'BCY059' (humphreysi s.l.)) in two bores in the east of the mining pits in an area adjacent to Yandicoogina Creek (Figures 4, 14). However, this species is not restricted to the Survey Area.

4.5.9. Amphipods

One amphipod species was recorded in the Survey Area (Paramelitidae Genus 2 sp. B02) in the east of the mining pits in an area adjacent to Yandicoogina Creek (Figures 4, 14). However, this species is not restricted to the Survey Area.

4.5.10. Isopods

Three species of isopods (*Troglarmadillo* sp. B03, *Troglarmadillo* sp. B64 (= sp. S14), and *Troglarmadillo* sp. B65) were recorded in the Survey Area (Figure 14). *Troglormadillo* sp. B64 (= sp. S14) and *Troglomardillo* sp. B65 are only known from the Survey Area. However, both species were recorded outside the proposed mining pits (Figure 14).

4.5.11. Chilopods

Chilopoda sp. B01 (Scolopendridae/Cryptopidae) and Scolopendridae sp. S05 are only known from the Survey Area (Figure 15). Chilopoda sp. B01 (Scolopendridae/Cryptopidae) was recorded from a single bore outside the east of the mining pits (Figure 15). Scolopendridae sp. S05, however, was collected from a single bore inside the southern mining pit (Figure 15).

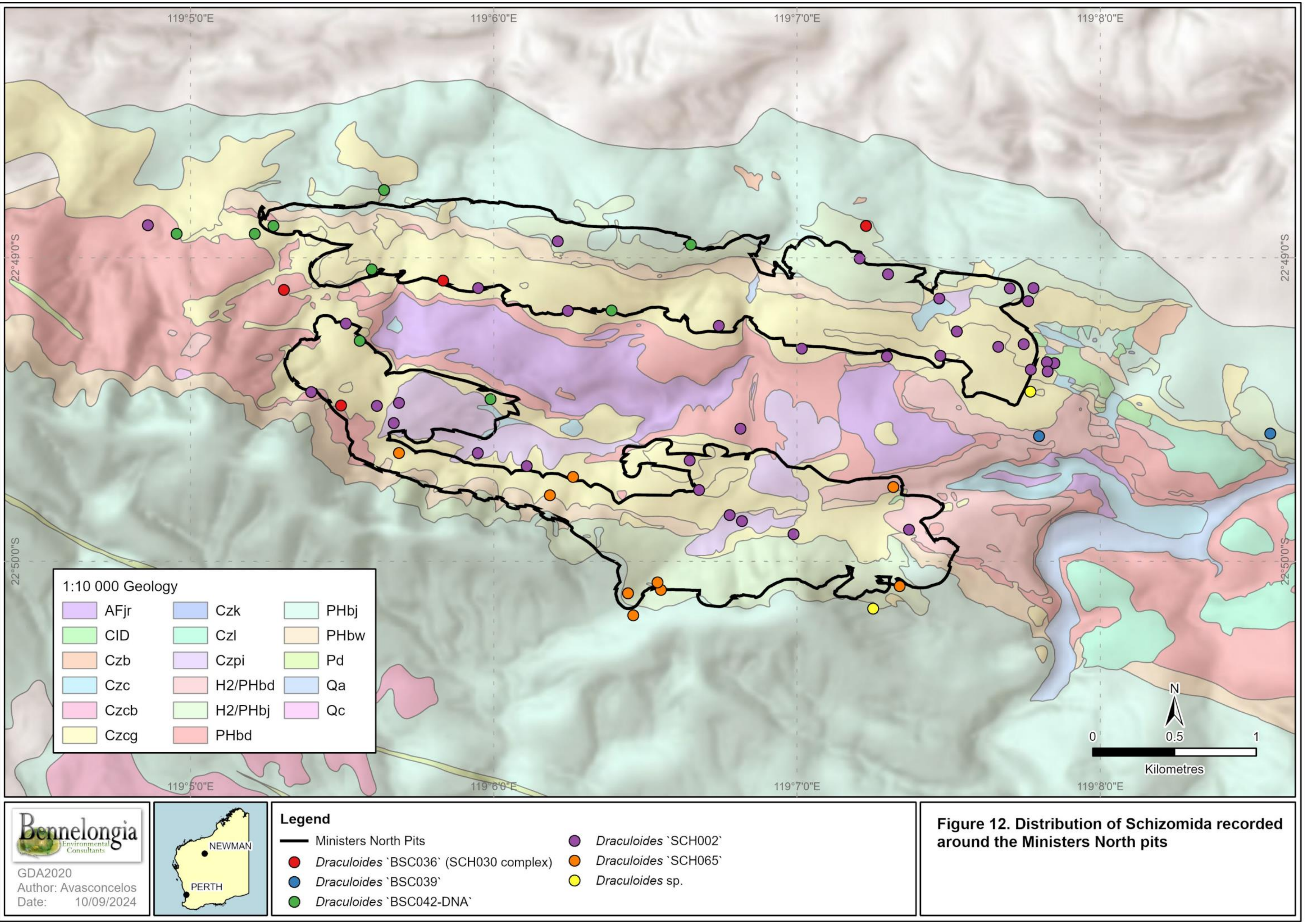


Figure 12. Distribution of Schizomida recorded around the Ministers North pits

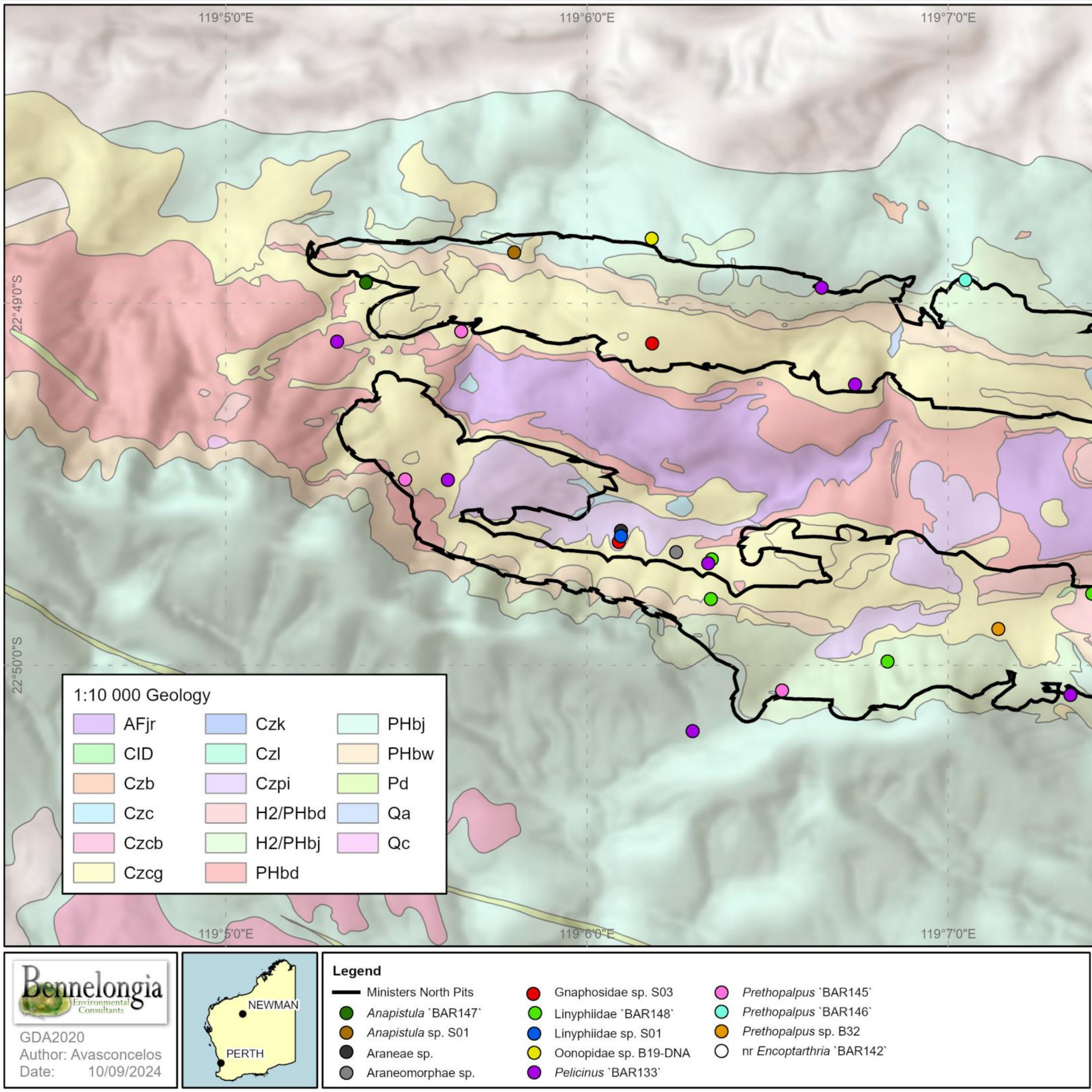
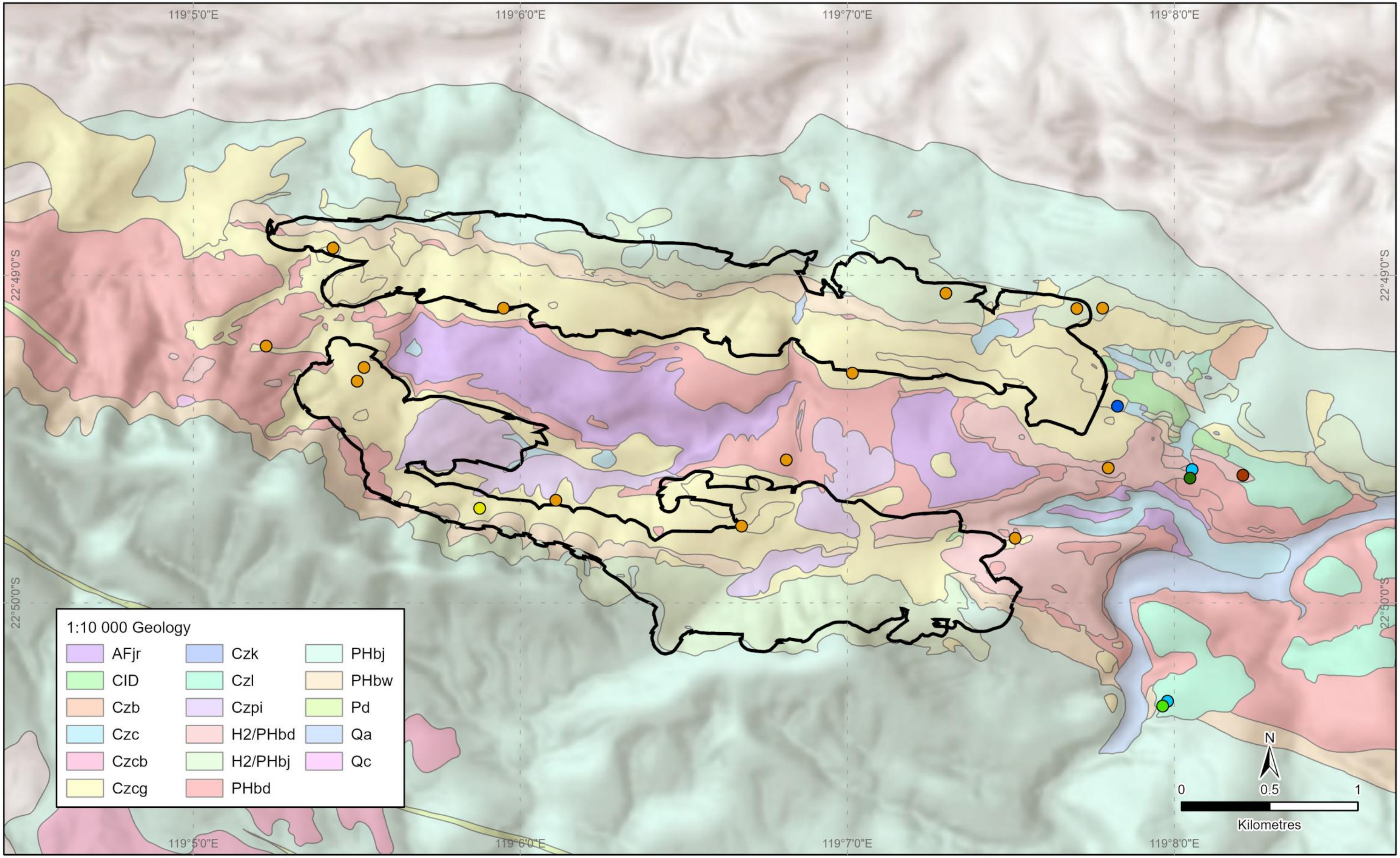


Figure 13. Distribution of Araneae recorded around the Ministers North pits



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Legend

Ministers North Pits

Crustacea

- Diacyclops `BCY059` (humphreysi s.l.)
- *Meridiescandona marillanae*
- Paramelitidae Genus 2 sp. B02
- Paramelitidae sp.
- Troglarmadillo sp. B03
- Troglarmadillo sp. B64 (= sp. S14)
- Troglarmadillo sp. B65

Figure 14. Distribution of Crustacea recorded around the Ministers North pits

4.5.12. Diplopods

Three diplopods were recorded from the Survey Area (*Lophoturus madecassus*, Polydesmida sp. B11, and Trigoniulidae sp. B06) (Figure 15). However, all of them were recorded outside the proposed mining pits (Figure 15).

4.5.13. Pauropods

Six species of pauropods were recorded from the Survey Area (Pauropoda sp. S04, Pauropodidae 'BPU078', Pauropodidae 'BPU118', Pauropodidae 'BPU119', Pauropodidae sp. B01 s.l., and *Decapauropus tenuis*) (Figure 16). Pauropodidae 'BPU078', Pauropodidae 'BPU118', and Pauropodidae 'BPU119' are only known from the Survey Area (Figure 16). Of these, Pauropodidae 'BPU118' and Pauropodidae 'BPU119' are currently only known from within the northern and southern proposed pit shells, respectively (Figure 16).

4.5.14. Symphilans

Three species of symphilans are currently only known from the Survey Area (*Hanseniella* 'BSYM129', *Hanseniella* sp. B42-DNA, and *Hanseniella* sp. B43-DNA) (Figure 16). *Hanseniella* sp. B42-DNA was collected from three bores close to the edge of the northern mining pit, including a site outside of proposed mining pits (Figure 16). *Hanseniella* 'BSYM129' was collected from a single bore in the western edge of the northern mining pit (Figure 16). *Hanseniella* sp. B43-DNA was collected from two bores 1.8 km apart from each other in the northern mining pit (Figure 16).

4.5.15. Diplurans

Two species of diplurans have been recorded only from the Survey Area (Japygidae sp. B34 and Projapygidae 'BDP239') (Figure 16). Japygidae sp. B34 was collected from multiple bores in the northern and southern mining pits, and surroundings (Figure 16). Projapygidae 'BDP239' was collected from a single bore outside the northern mining pit (Figure 16).

4.5.16. Zygentoma

Three species of Zygentoma were recorded from the Survey Area (*Dodecastyla* 'BZY111', *Trinemura* 'BZY112', and *Trinemura* sp. B32) (Figure 17). *Trinemura* 'BZY112' and *Trinemura* sp. B32 are only known from the Survey Area, but both species were recorded in bores outside the western edge of the mining pits (Figure 17).

4.5.17. Hemipterans

Four species of Hemiptera were collected from the Survey Area (Cixiidae sp. B02, Meenoplidae sp. WAM-PHAC001/H-HEM003, *Phaconeura* Biologic HEMI002, *Phaconeura* sp. B13) (Figure 17). However, *Phaconeura* Biologic HEMI002 is the only species currently considered to be possibly restricted to the Survey Area. This species was collected from a single bore inside the northern edge of the southern mining pit (Figure 17).

4.5.18. Blattodeans

Four species of blattodeans were collected in the Survey Area (Blattidae sp. B06 (= sp. S02), *Nocticola* 'BBL038/B10' (cockingi s.l.), *Nocticola* 'BBL038' (cockingi s.l.), and *Nocticola* 'BBL044' (quartermainei gp)) (Figure 18). However, none of these species are restricted to the Survey Area.

4.5.19. Coleopterans

Eleven species of Coleoptera were collected in the Survey Area (?Colydiinae \`BCO256\`, Coleoptera \`BCO236\`, Coleoptera sp. B09, Cryptorhynchinae sp. B10, Curculionidae Genus 1 \`BCO228\`, Curculionidae Genus 1 sp. B15 (B02=S02 clade), *Gilesdytes vixsulcatus*, *Holoparamecus* \`BCO255\`, Pselaphinae sp. S04, *Typhlozuphium* sp. B04, and Zuphiinae sp. S01 s.l.) (Figure 19). Nine of them are currently only known from the Survey Area, but only Coleoptera \`BCO236\`, *Holoparamecus* \`BCO255\`, Pselaphinae sp. S04, and Zuphiinae sp. S01 s.l. are currently known only from within the proposed pits.

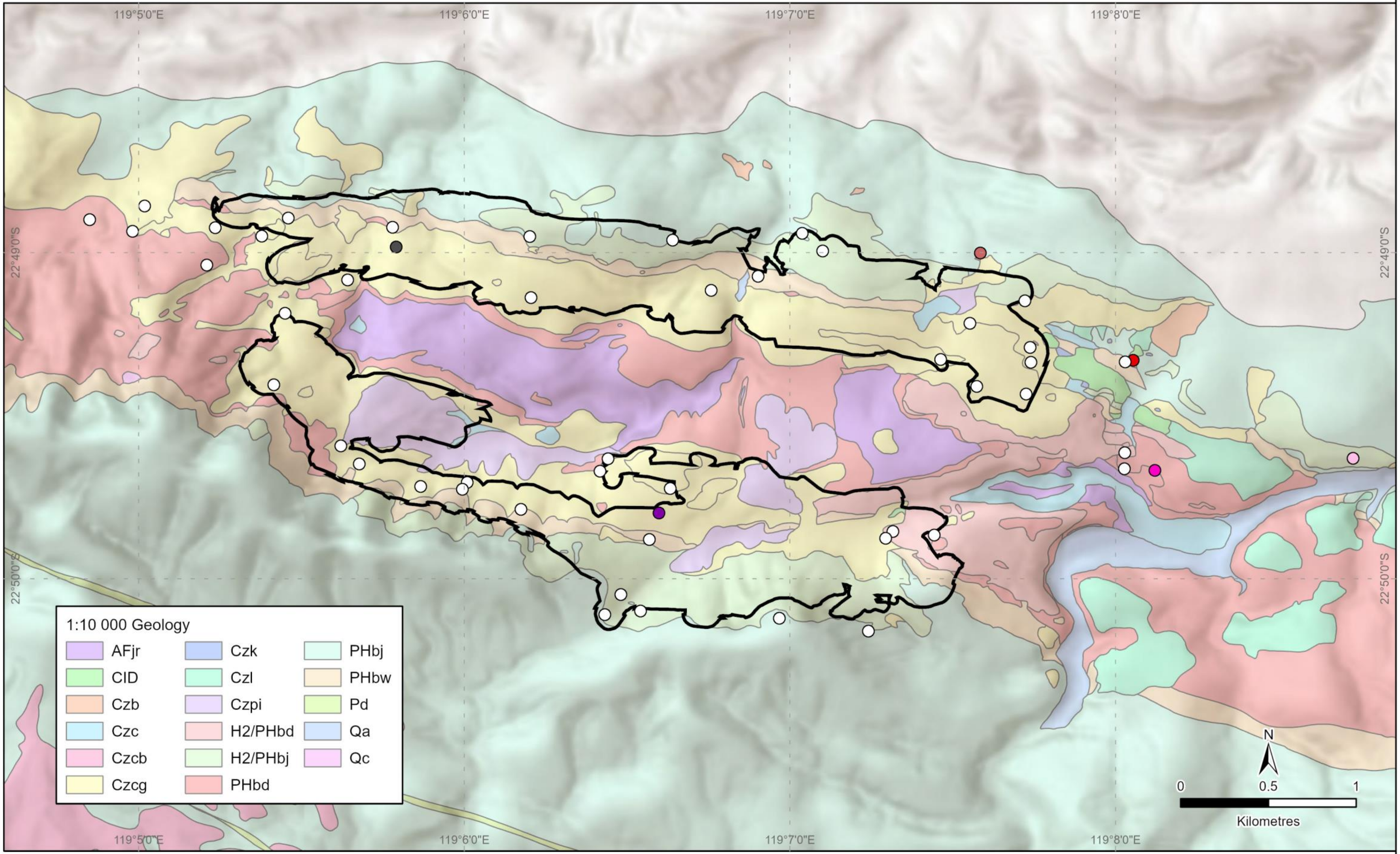

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Figure 15. Distribution of Chilopoda and Diplopoda recorded around the Ministers North pits

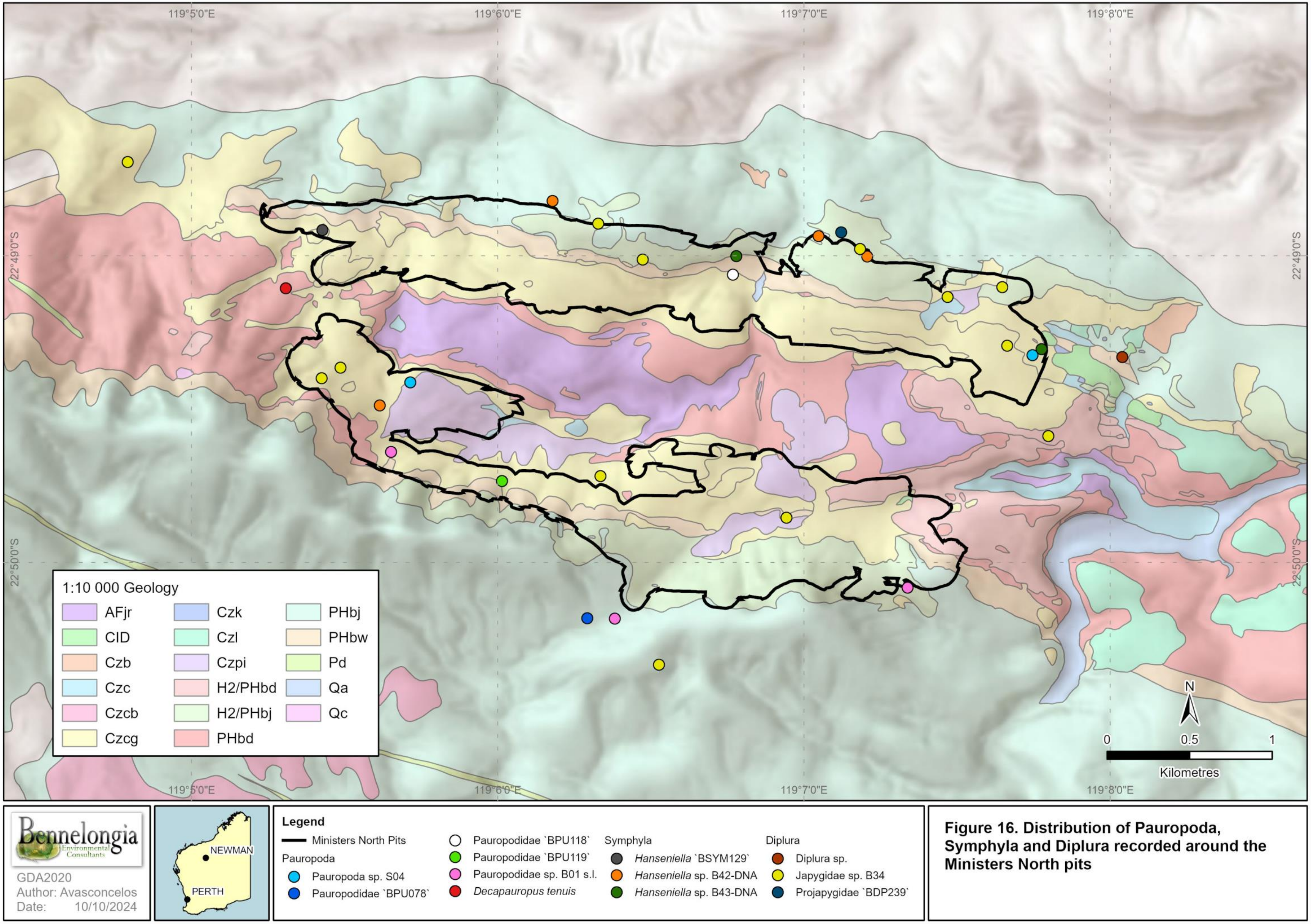

Figure 16. Distribution of Pauropoda, Symphyla and Diplura recorded around the Ministers North pits

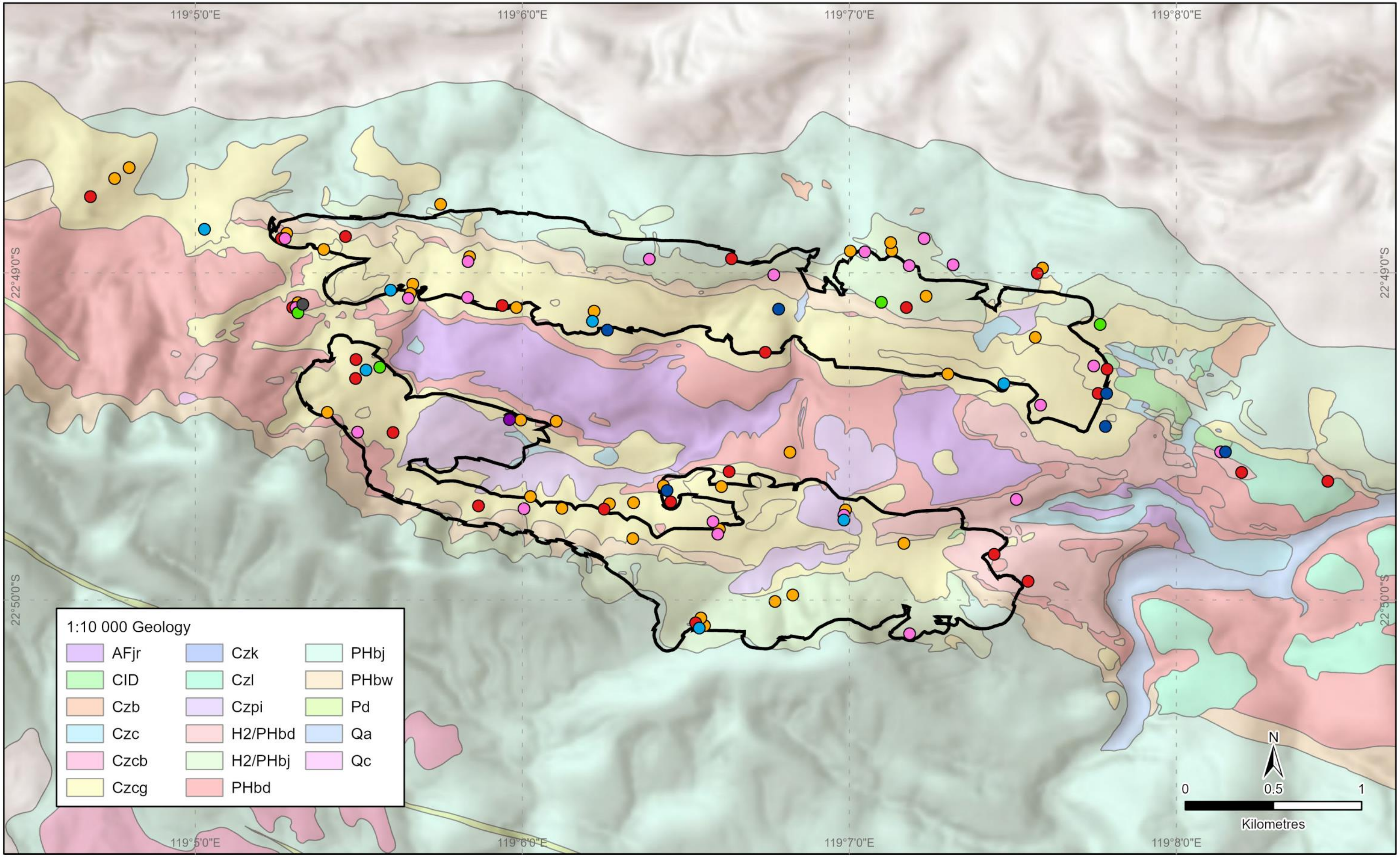

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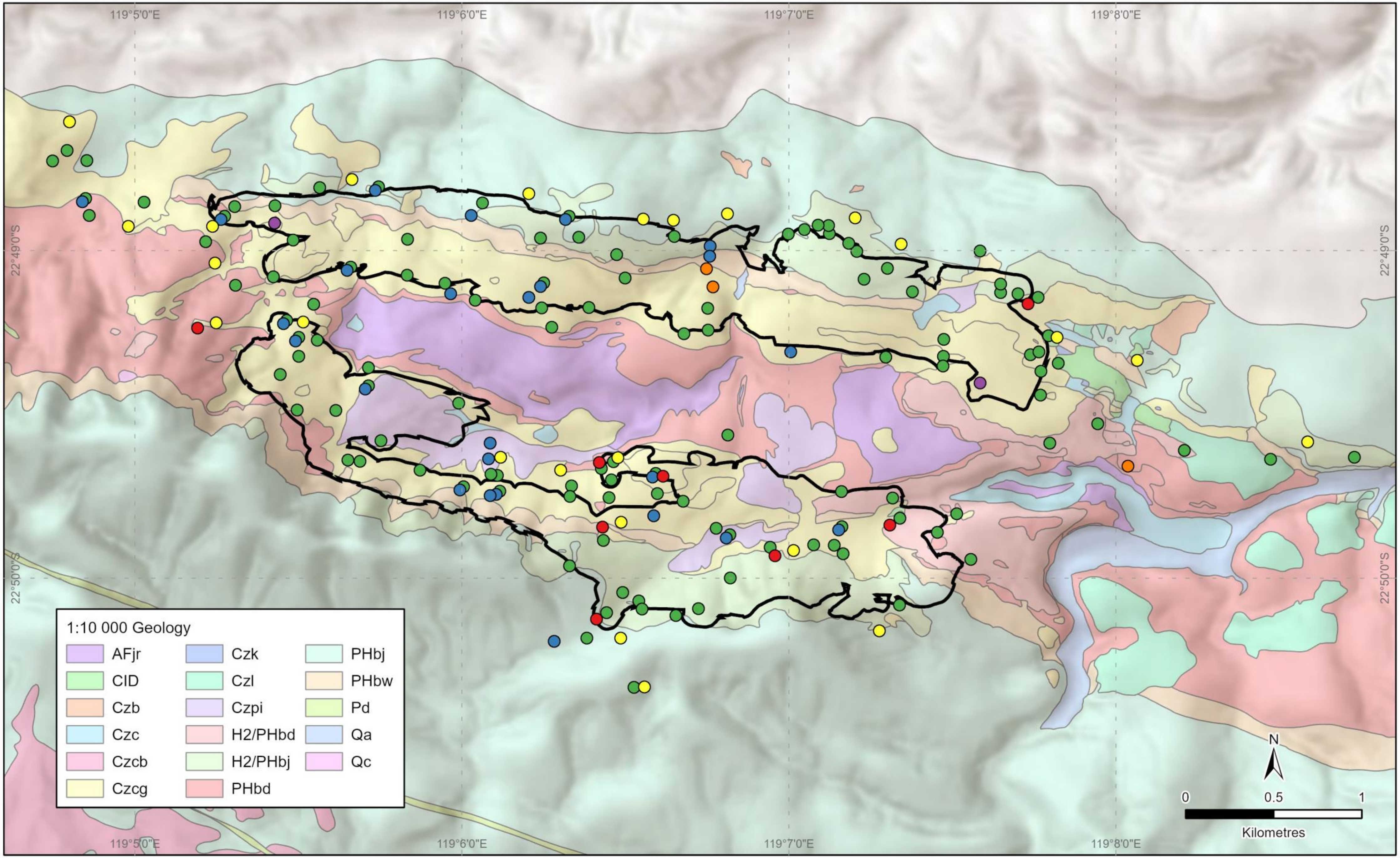
Figure 17. Distribution of Zygentoma and Hemiptera around the Ministers North pits



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Legend

- Ministers North Pits
- Blattidae sp.
- Blattidae sp. B06 (= sp. S02)
- Nocticola `BBL038 / B10` (cockingi s.l.)
- Nocticola `BBL038` (cockingi s.l.)
- Nocticola `BBL044`(quartermainei gp)
- Nocticola sp.

Figure 18. Distribution of Blattodea around the Ministers North pits

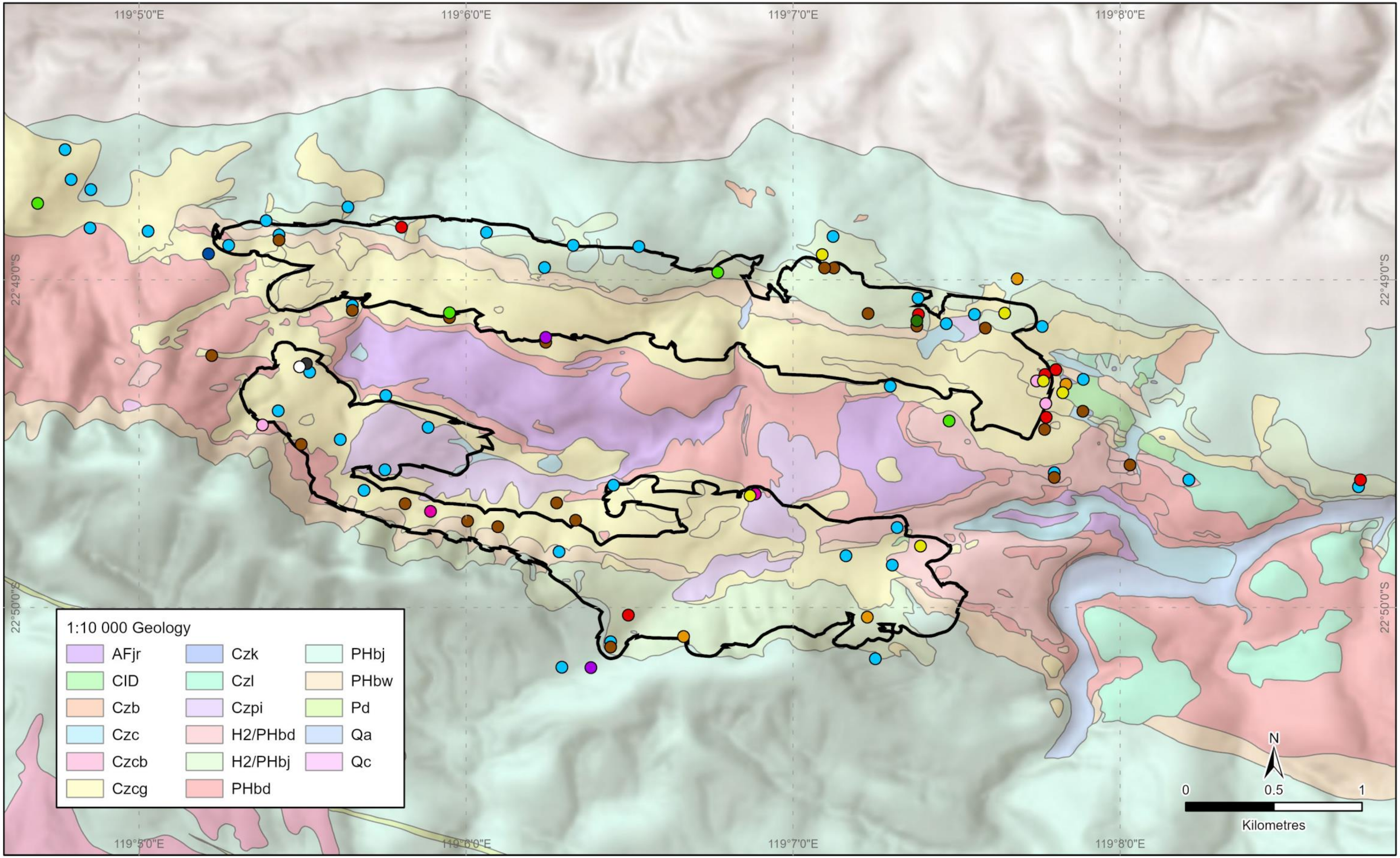

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Figure 19. Distribution of Coleoptera and Diptera around the Ministers North pits

Coleoptera `BCO236` was collected from a single bore in the east of the northern mining pit (Figure 19). *Holoparamecus* `BCO255` was collected from two bores 1.7 km apart in the southern mining pit (Figure 19). Pselaphinae sp. S04 and Zuphiinae sp. S01 s.l. were collected from single bores in the west of the southern mining pit (Figure 19).

4.5.20. Dipteran

One species of Diptera was collected from the Survey Area (Allopnyxia sp. B01) (Figure 19). However, this species is not restricted to the Survey Area.

4.6. Species known only from the Survey Area

Altogether, 49 species are known from the Survey Area. Nineteen of these represent new, undescribed species collected during the current field survey. The predominant group currently known only from within the Survey Area are the Arachnida (21 species), followed by Insecta (14 species), Myriapoda (10 species), Crustacea (2 species), Entognatha (1 species), and Annelida (1 species) (Table 9).

Table 9. Species known only from the Survey Area.

Higher order	Lowest identification	No. of specimens	Linear range (km)	Collected in the current survey	New species
Annelida					
Clitellata					
Tubificida					
Naididae	Tubificinae sp. B09	2	Single bore		
Arachnida					
Opiliones					
Assamiidae	*Dampetrus* sp. B05 (nr isolatus)	4	3 km	X	
Palpigradi	Palpigradi `BPAL054`	1	Singleton	X	X
	Palpigradi sp. B23	1	Singleton		
	Palpigradi sp. B24	1	Singleton		
Pseudoscorpiones					
Chthoniidae	*Lagynochthonius sp.* B20 (= sp. S04)	32	4.3 km	X	
	Tyrannochthonius `BPS499`	1	Singleton	X	X
Hyidae	*Indohya* `BPS560`	2	3.3 km	X	X
Schizomida					
Hubbardiidae	*Draculoides* `BSC039`	4			
	Draculoides `BSC036` (SCH030 complex)	6		X	
	Draculoides `BSC042-DNA`	12	3 km	X	
	Draculoides `SCH002`	52	5 km	X	X
	Draculoides `SCH065`	14	5 km	X	X
Araneae					
	nr *Encoptarthria* `BAR142`	1	Singleton	X	X
Gnaphosidae	Gnaphosidae sp. S03	2	1 km		
Linyphiidae	Linyphiidae sp. S01	1	Singleton		
	Linyphiidae `BAR148`	12	2 km	X	X
Oonopidae	Oonopidae sp. B19-DNA	1	Singleton		
	Pelicinus `BAR133`	18	4.3 km	X	
	Prethopalpus sp. B32	2	1.5 km		
	Prethopalpus `BAR145`	3	2.5 km	X	X

Higher order	Lowest identification	No. of specimens	Linear range (km)	Collected in the current survey	New species
	Prethopalpus `BAR146`	2	Single bore	X	X
Symphytognathidae	Anapistula sp. S01	2	Single bore		
	Anapistula `BAR147`	4	Single bore	X	X
Crustacea					
Malacostraca					
Isopoda					
Armadillidae	*Troglarmadillo* sp. B64 (= sp. S14)	26	4.5 km	X	
	Troglarmadillo sp. B65	2	Single bore		
Myriapoda					
Chilopoda					
Scolopendridae	Chilopoda sp. B01 (Scolopendridae/Cryptopidae)	1	Singleton		
	Scolopendridae sp. S05	1	Singleton		
Diplopoda					
Spirobolida	Trigoniulidae sp. B06	2	Single bore		
Pauropoda	Pauropoda sp. S04	2	3.5 km		
Tetramerocerata					
Pauropodidae	Pauropodidae `BPU078`	1	Singleton		
	Pauropodidae `BPU118`	1	Singleton	X	X
	Pauropodidae `BPU119`	1	Singleton	X	X
Symphyla					
Cephalostigmata					
Scutigerellidae	*Hanseniella* `BSYM129`	1	Singleton	X	X
	Hanseniella sp. B42-DNA	9	3 km	X	
	Hanseniella sp. B43-DNA	2	1.8 km	X	
Entognatha					
Diplura					
Projapygidae	Projapygidae `BDP239`	1	Singleton	X	X
Insecta					
Zygentoma					
Nicoletiidae	*Trinemura* sp. B32	1	Singleton		
	Trinemura `BZY112`	7	2 km	X	X
Hemiptera					
Cixiidae					
Meenoplidae	*Phaconeura* Biologic HEMI002	2	Single bore	X	X
Coleoptera	Coleoptera `BCO236`	1	Singleton	X	X
Carabidae					
	Typhlozuphium sp. B04	4	2.5 km	X	
	Zuphiinae sp. S01 s.l.	1	Singleton		
Curculionidae					
	Cryptorhynchinae sp. B10	38	5 km	X	
	Curculionidae Genus 1 `BCO228`	2	2 km	X	X
	Curculionidae Genus 1 sp. B15 (B02=S02 clade)	9	5.2 km	X	
Endomychidae	*Holoparamecus* `BCO255`	11	1.7 km	X	X

Higher order	Lowest identification	No. of specimens	Linear range (km)	Collected in the current survey	New species
Staphylinidae	Pselaphinae sp. S04	3	Single bore		
Zopheridae	?Colydiinae `BCO256`	1	Singleton		

4.7. Bore geological modelling of the location of species that only occur inside the proposed mining pits

From the 49 species known only from the Survey Area, 16 were collected from bores only inside the proposed mining pits (Figure 20). Those species are the palpigrades Palpigradi sp. B24 and Palpigradi `BPAL054` (Figure 11), the spiders *Anapistula* sp. S01, *Prethopalpus* 'BAR146', *Prethopalpus* sp. B32 and nr *Encoptarthria* 'BAR142' (Figure 13), the chilopod Scolopendridae sp. S05 (Figure 15), the pauropods Pauropodidae 'BPU118' and Pauropodidae 'BPU119' (Figure 16), the symphylans *Hanseniella* 'BSYM129' and *Hanseniella* sp. B43-DNA (Figure 16), the hemipteran *Phaconeura* Biologic HEMI002 (Figure 17), and the coleopterans Coleoptera `BCO236`, *Holoparamecus* `BCO255`, Pselaphinae sp. S04, and Zuphiinae sp. S01 s.l. (Figure 19).

4.7.1. Palpigradi sp. B24 and Palpigradi `BPAL054`

Palpigradi sp. B24 was collected in the Joffre Member (PHbj – J2) of the Brockman Iron Formation. Because bores with the same geology are found outside the pit boundary in close proximity, it is likely that this species can occur outside the impact area of the mining pits (Table 11). Palpigradi `BPAL054` was collected in the Joffre Member of the Brockman Iron Formation in two possible units: PHbj – J2 or J1 – shaly. Because bores with the same geology are found outside the pit boundary in close proximity, it is likely that this species can also occur outside the impact area of the mining pits (Table 11).

4.7.2. *Anapistula* sp. S01, *Prethopalpus* 'BAR146', *Prethopalpus* sp. B32 and nr *Encoptarthria* 'BAR142'

Anapistula sp. S01 was collected in Whaleback Shale (PHbw – Undifferentiated) of the Brockman Iron Formation. Because bores with the same geology are found outside the pit boundary in close proximity, it is likely that this species can occur outside the impact area of the mining pits (Table 11). *Prethopalpus* 'BAR146' was collected in the Joffre Member (PHbj- J2) of the Brockman Iron Formation. Because bores with the same geology are found outside the pit boundary in close proximity, it is likely that this species can also occur outside the impact area of the mining pits (Table 11). *Prethopalpus* sp. B32 was collected in two bores by scrapes in unknown depths, thus, it is not possible to know in which geology the specimens were found. However, bores with the same geology can be found outside the mining pits in close proximity (Table 11), which suggests that *Prethopalpus* sp. B32 is likely to be found outside the mining pits. The species nr *Encoptarthria* 'BAR142' was collected in the Joffre Member of the Brockman Iron Formation in two possible units: PHbj – J2 or J1 – shaly. Because bores with the same geology are found outside the pit boundary in close proximity, this species is also likely to occur outside the impact area of the mining pits (Table 11).

4.7.3. Scolopendridae sp. S05

Scolopendridae sp. S05 was collected in the Dales Gorge Member (PHbd – D2) of the Brockman Iron Formation. Because bores with the same geology are found outside the pit boundary in close proximity, it is likely that this species can occur outside the impact area of the mining pits (Table 11).

4.7.4. Pauropodidae 'BPU118' and Pauropodidae 'BPU119'

Pauropodidae 'BPU118' was collected in three possible units of the Brockman Iron Formation: Whaleback Shale (PHbw – Undifferentiated), Dales Gorge Member (PHbd – D4), or Dales Gorge Member (PHbd – D3 - middle shaly). Because bores with the same geology are found outside the pit boundary in close proximity, it is likely that this species can occur outside the impact area of the mining pits (Table 11). Pauropodidae 'BPU119' was collected in two possible units of the Brockman Iron Formation: Whaleback

Shale (PHbw – Undifferentiated) or Dales Gorge Member (PHbd - D4). The Whaleback Shale (PHbw – Undifferentiated) was registered in a bore outside the mining pit in close proximity to the collection location of Pauropodidae 'BPU119', but not the Dales Gorge Member (PHbd - D4) unit, thus, it is unclear if Pauropodidae 'BPU119' can found outside the impact area of the mining pits (Table 11).

4.7.5. *Hanseniella* 'BSYM129' and *Hanseniella* sp. B43-DNA

Hanseniella 'BSYM129' was collected in the Dales Gorge Member of the Brockman Iron Formation in two possible units: PHbd - D4 or PHbd – D3 (middle shaly). PHbd – D3 (middle shaly) was registered in three bores outside the mining pits in the vicinity of the bore where *Hanseniella* 'BSYM129' was collected, but not the PHbd - D4 unit. Therefore, it is unclear if *Hanseniella* 'BSYM129' can occur outside the impact area of the mining pits (Table 11). *Hanseniella* sp. B43-DNA was collected in two possible units of the Brockman Iron Formation: Whaleback Shale (PHbw – Undifferentiated) or Dales Gorge Member (PHbd - D4). Because bores with the same geology are found outside the pit boundary in close proximity to *Hanseniella* sp. B43-DNA's collection location, it is likely that this species can occur outside the impact area of the mining pits (Table 11).

4.7.6. *Phaconeura* Biologic HEMI002

Phaconeura Biologic HEMI002 was collected from a bore containing three possible collection geologies: Dales Gorge Member (PHbd -D2) of the Brockman Iron Formation, Colonial chert Member (Ahrc), or Mt McRae Shale (Upper). Because bores in close proximity to the collection location positioned outside the proposed pits contain the same geology, it is likely that this species can occur outside the impact area of the mining pits (Table 11).

4.7.7. Coleoptera \`BCO236\`, *Holoparamecus* \`BCO255\`, Pselaphinae sp. S04, and Zuphiinae sp. S01 s.l.

Coleoptera \`BCO236\` was collected in two possible units of the Brockman Iron Formation: Joffre Member (J1 - shaly) or Whaleback Shale (PHbw – Undifferentiated). These geologies were not registered in the proximate bores to where Coleoptera \`BCO236\` was collected, thus, it is unclear if this species can occur outside the area of impact of the mine pits (Table 11). *Holoparamecus* \`BCO255\` was collected in the Dales Gorge Member (PHbd - D3 - middle shaly) of the Brockman Iron Formation, and in Gravelly Siltstone. Both geologies were recorded in bores outside the pit boundary in close proximity, suggesting that this species can occur outside the impact area of the mining pits (Table 11). Pselaphinae sp. S04 and Zuphiinae sp. S01 s.l. were collected in the same bore in three possible geologies: Dales Gorge Member (PHbd - D2) of the Brockman Iron Formation, Colonial chert Member (Ahrc), or Mt McRae Shale (Upper) geologies. The Colonial chert Member (Ahrc) and the Mt McRae Shale (Upper) geologies were registered in a bore outside the mining pit, but not the Dales Gorge Member (PHbd - D2) of the Brockman Iron Formation, thus, it is unclear if Pselaphinae sp. S04 and Zuphiinae sp. S01 s.l. can be found outside the impact area of the mining pits (Table 11).

Table 10. Colour symbols used in the bore geology modelling shown in Table 11**.**

Symbol	Geology
	Brockman Iron Formation, Dales Gorge Member (PHbd) - D2
	Brockman Iron Formation, Dales Gorge Member (PHbd) - D3 - middle shaly
	Brockman Iron Formation, Dales Gorge Member (PHbd) - D4
	Brockman Iron Formation, Joffre Member - J1 - shaly
	Brockman Iron Formation, Joffre Member (PHbj) - J2
	Brockman Iron Formation, Joffre Member (PHbj) - J3 - shaly
	Brockman Iron Formation, Joffre Member (PHbj) - J4
	Brockman Iron Formation, Joffre Member (PHbj) - J5 - shaly
	Brockman Iron Formation, Joffre Member (PHbj) - J6

Symbol	Geology
	Brockman Iron Formation, Whaleback Shale (PHbw) - Undifferentiated
	Mt McRae Shale - Nodule Zone
	Mt McRae Shale - Upper
	Gravelly Siltstone
	Colonial chert Member (Ahrc), the lowest unit of the Dales gorge Member in the Newman area.

5. DISCUSSION

5.1. Stygofauna from Ministers North

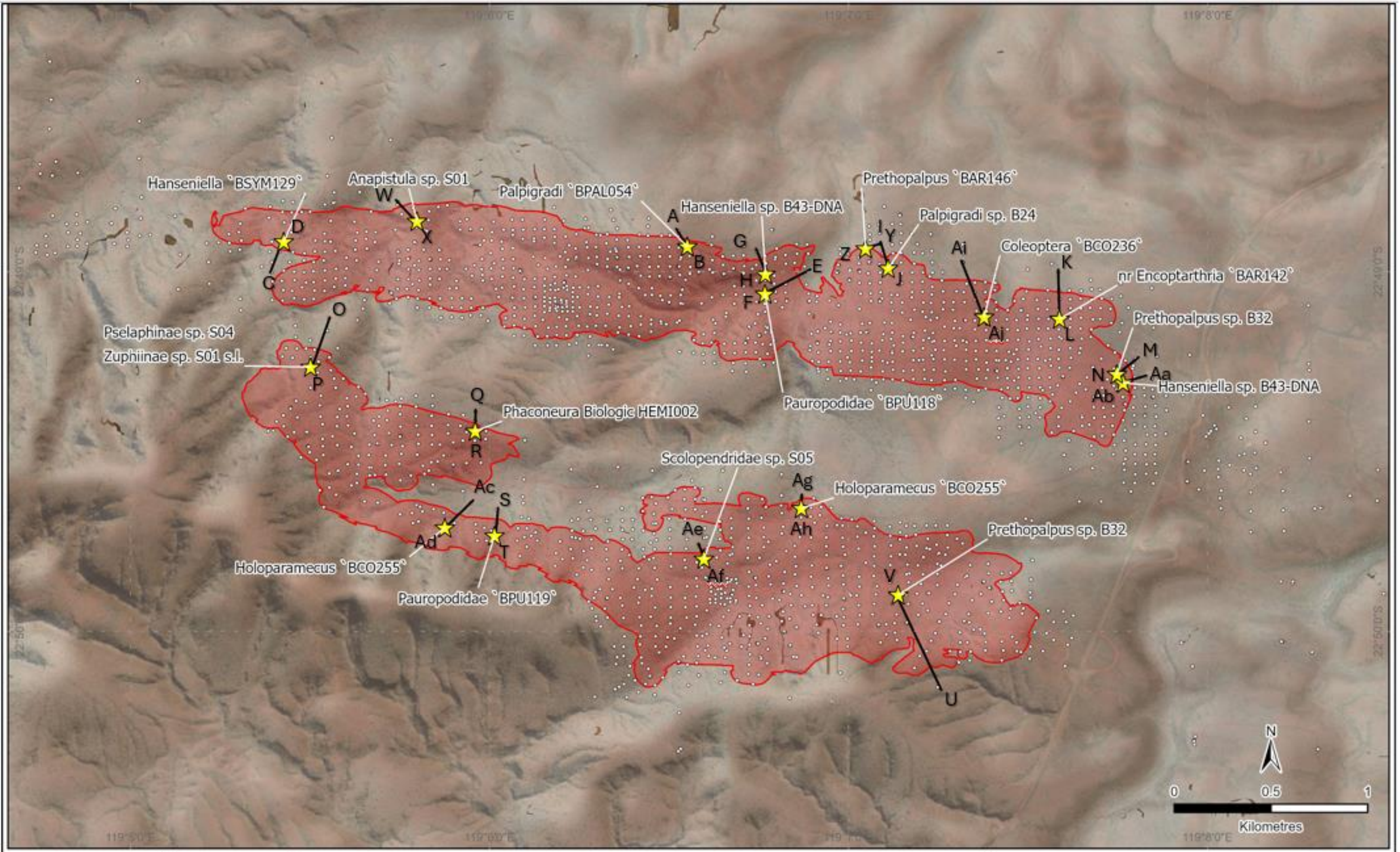
The desktop review identified a large number of stygofauna species in the Study Area, especially in paleovalleys such as Yandicoogina (Figure 6). However, the number of stygofauna recorded in the Survey Area was low (Table 4) and only comprised one potentially restricted species (Tubificinae sp. B09).

During the survey, stygofauna specimens were predominantly collected (seven of 11 locations where stygofauna were found) in the eastern part of the Ministers North northern pit where groundwater is shallower (Figure 8). In the three rounds of survey, a depauperate stygofauna community was found (117 specimens probably representing no more than six species). The results of the field survey confirmed that a low diversity of stygofauna occurs at Ministers North.

The community of stygofauna collected during the field survey was similar to the community of species found in the desktop search. Species of nematodes, worms of the family Enchytraeidae, the copepod *Diacyclops* \`BCY059\` (*humphreysi* s.l.), species of the ostracod genus *Meridiescandona,* and species of the family of amphipods Paramelitidae were registered in both desktop search and field survey.

The nematodes Nematoda spp. are not included in environmental impact assessments because of the lack of a taxonomic framework for species identification (EPA 2016a, b). While the amphipod Paramelitidae sp. could only be identified at a family level, meaning its distribution could not be estimated, most amphipod species in and around the Hamersley Range are relatively widespread, with catchment scale distributions (Finston *et al*. 2007). The animals identifiable to species level have ranges extending outside the impact area of the mine. The worms Enchytraeidae 'E06' and Enchytraeidae 'OB3', the copepod *Diacyclops* \`BCY059\` (*humphreysi* s.l.) and the ostracod *Meridiescandona marillanae* have been collected from other locations in Yandi.

Bennelongia (2018) classified the enchytraeid species as amphibious and did not flag them as stygofauna potentially restricted to the Survey Area, instead discussing the occurrence of only Tubificinae sp. B09. Most records of the enchytraeids collected in the Pilbara region are morphological identifications considered to represent clades. The clade Enchytraeidae \`3 bundle\` s.l. (short sclero) appears to contain relatively few species, but it includes two species collected at Ministers North: a species called Enchytraeidae 'E6' by Brown *et al.* (2015) and another species called Enchytraeidae 'OB3'. Rather confusingly, Brown *et al.* (2015) recognised multiple haplotypes of Enchytraeidae 'E6' that have often been thought by readers to be multiple species, although this was not the conclusion of Brown *et al*. (2015) and is not supported by the genetic distances involved.

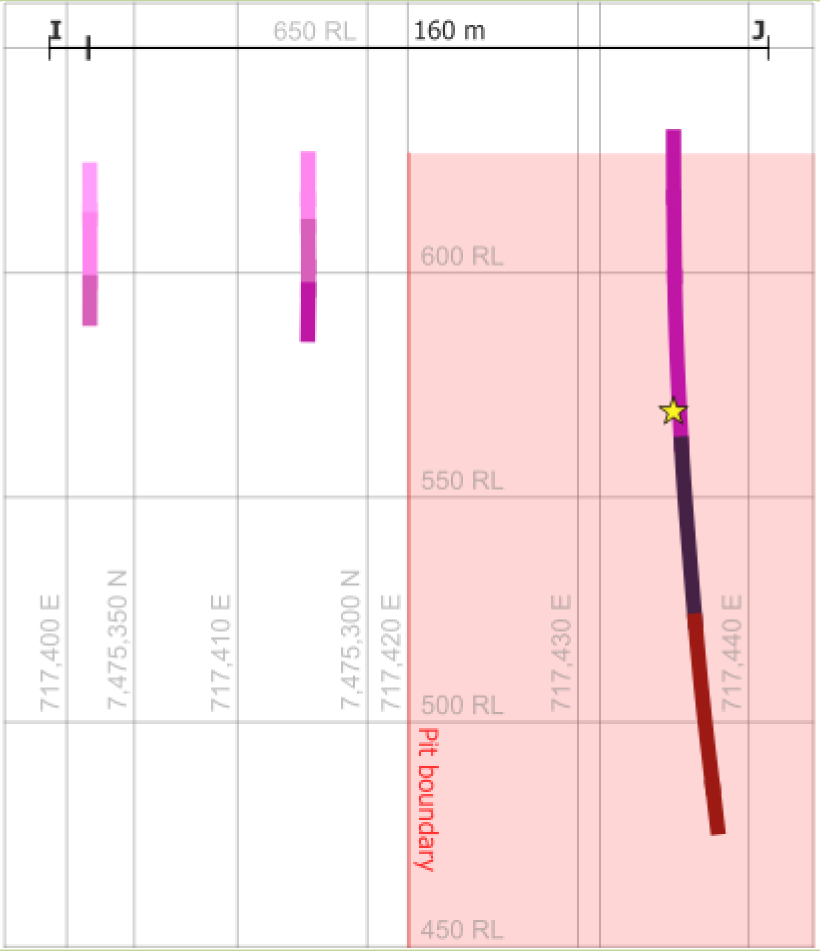


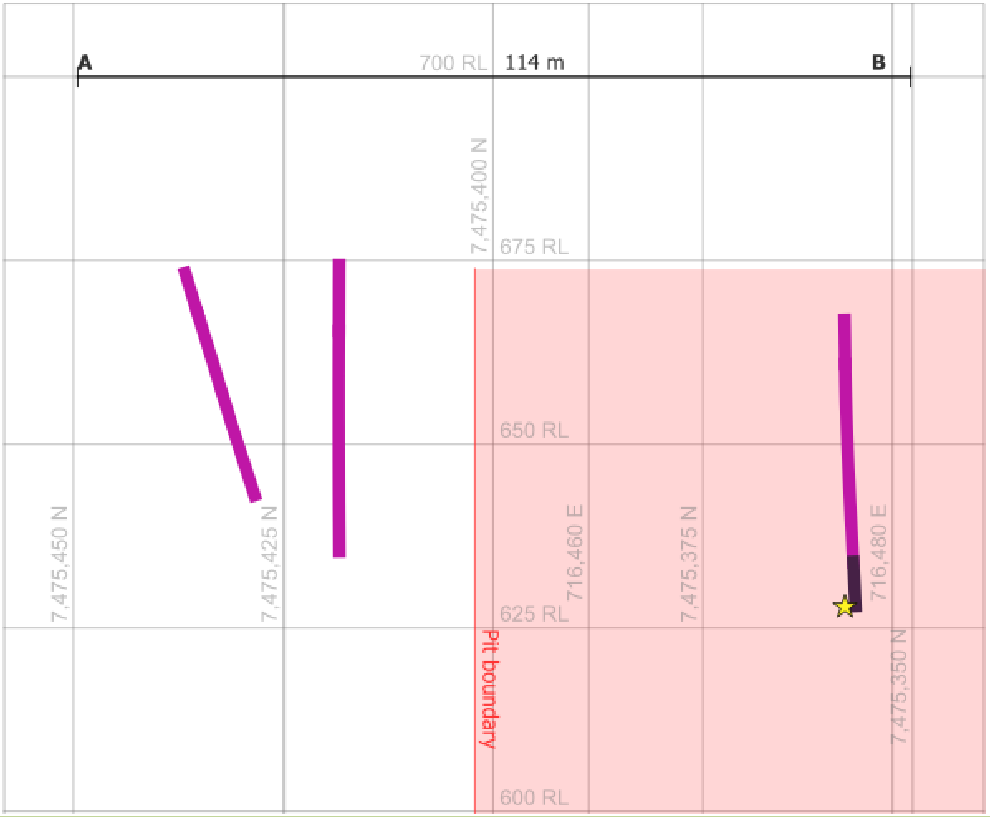
Bennelongia Environmental Consultants

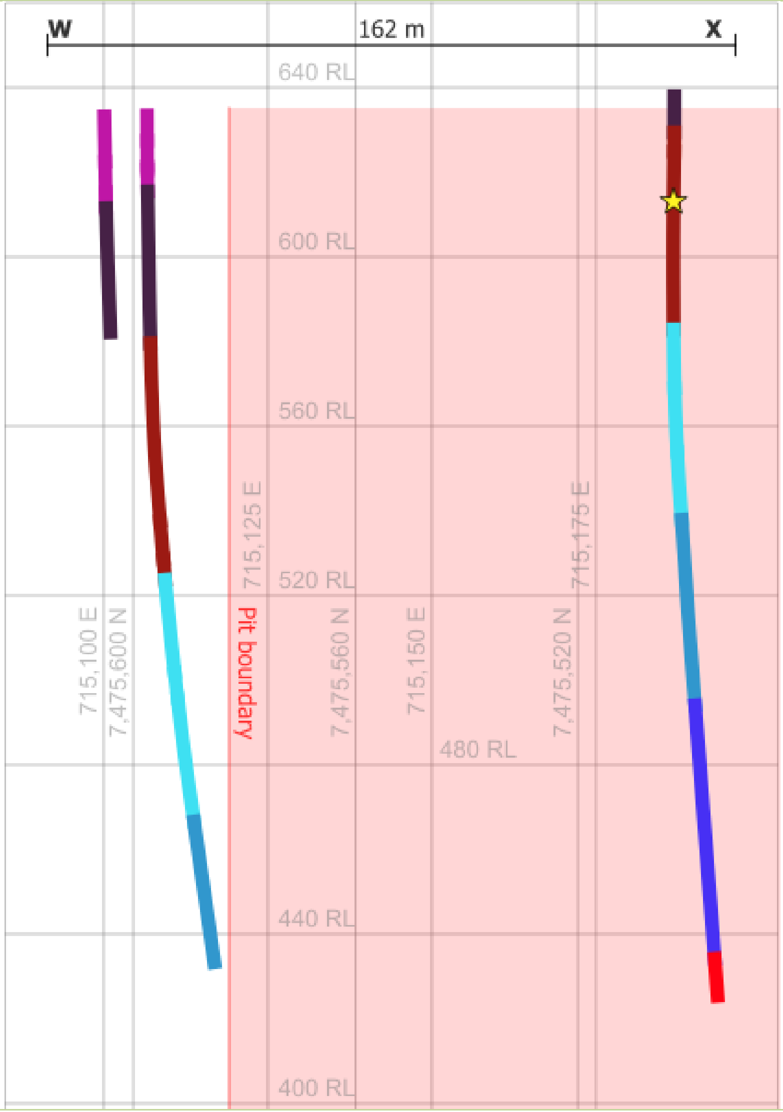
GDA2020
Author: Avasconcelos
Date: 11/10/2024

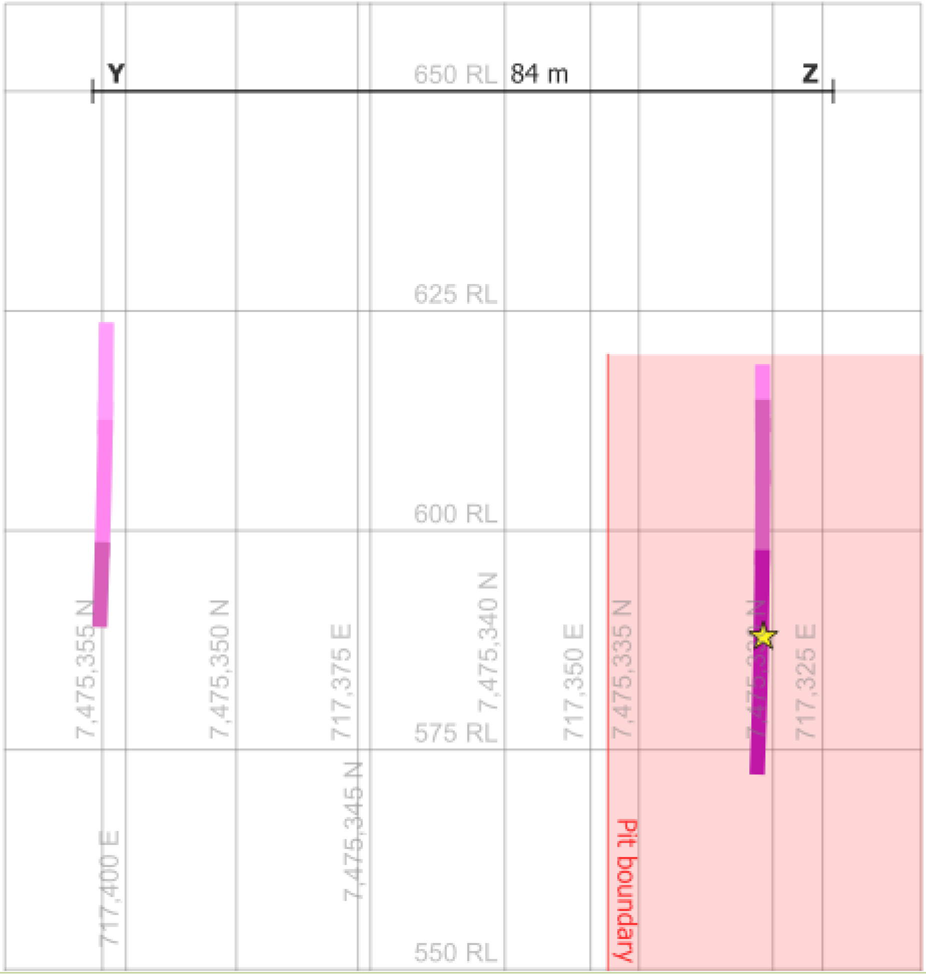
Figure 20. Cross section of each species record used in the bore geological modelling presented in Table 11

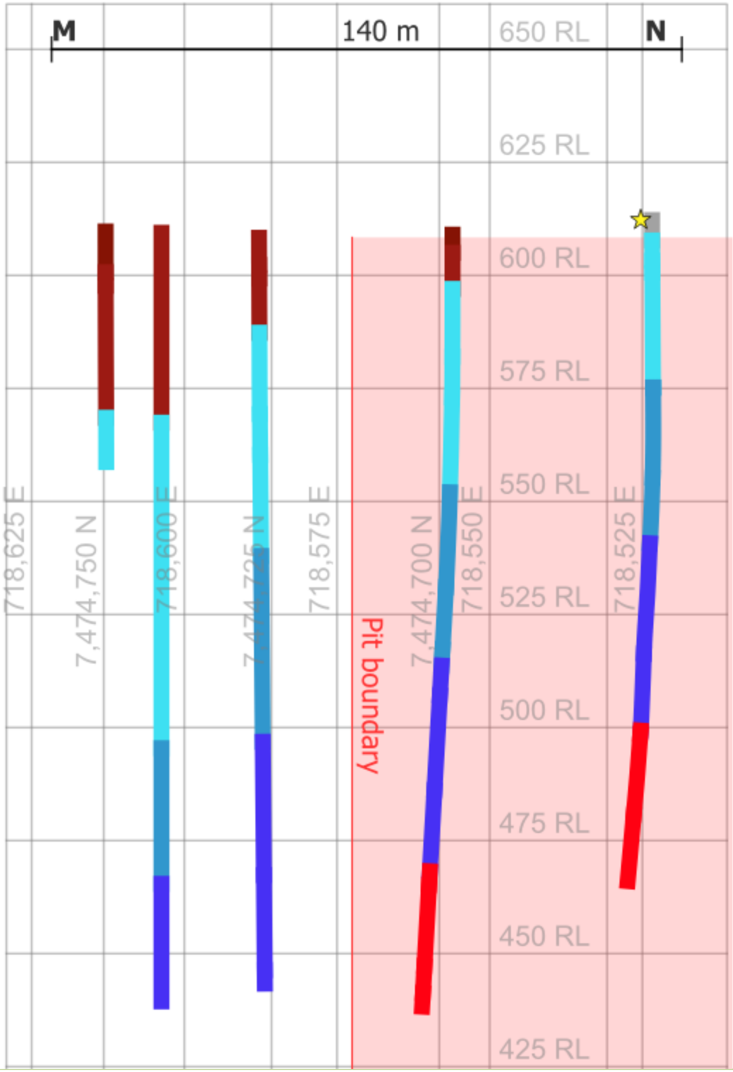
Table 11. Bore geology modelling of species that were found only inside the Ministers North mining pits.

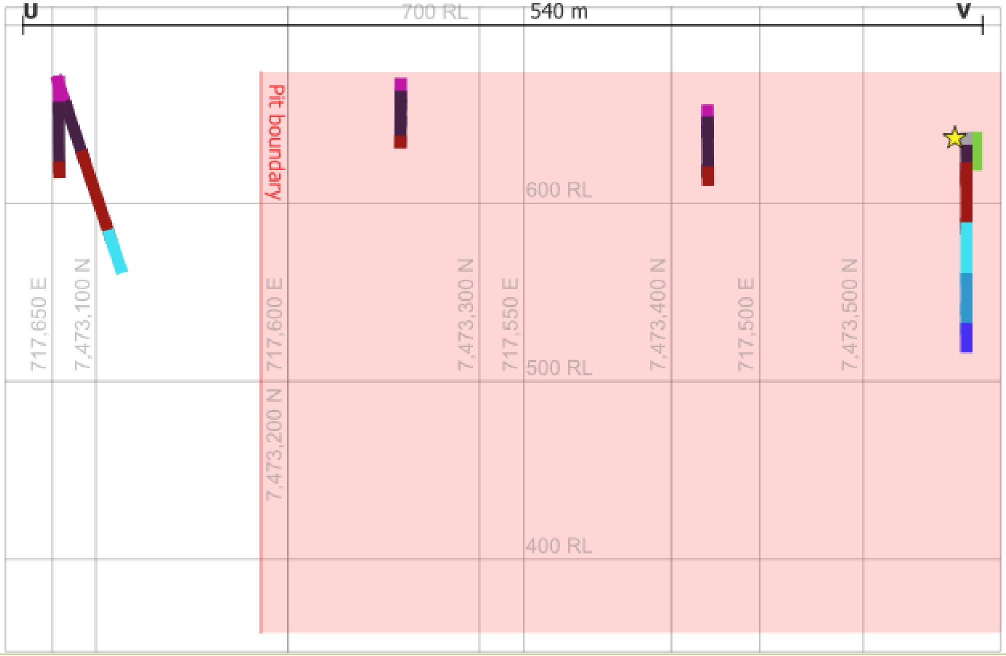
Bore geology modelling	**Species**	**Collection method**	**Depth**	**Geology**
	Palpigradi sp. B24	Scrape/net	61 m	Brockman Iron Formation, Joffre Member (PHbj) – J2

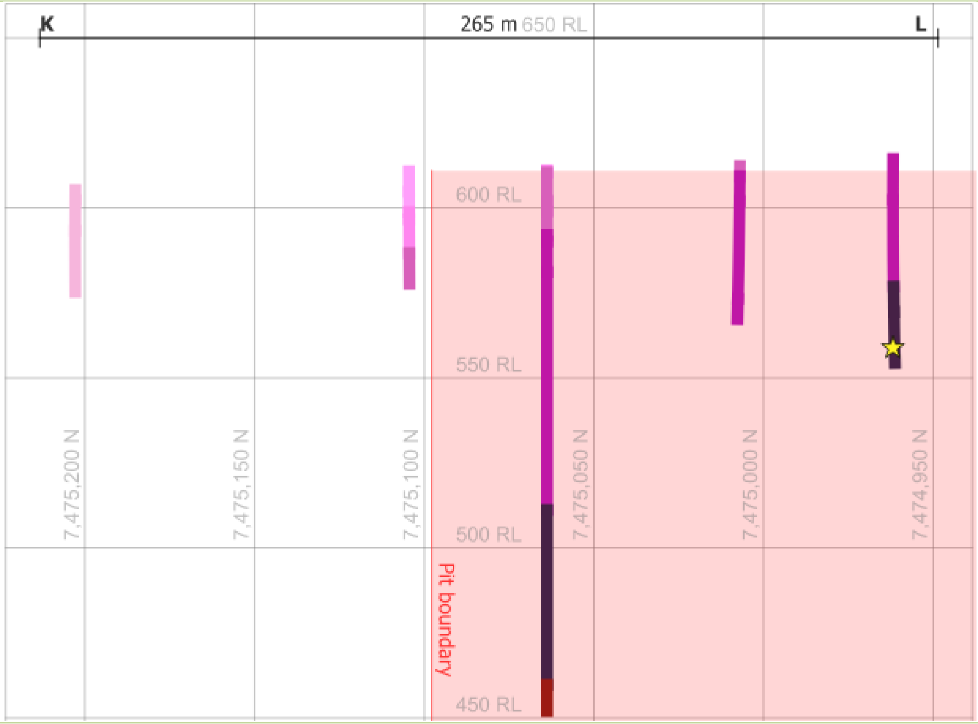
<table>
<tr><th>Bore geology modelling</th><th>Species</th><th>Collection method</th><th>Depth</th><th>Geology</th></tr>
<tr><td>
</td><td>Palpigradi `BPAL054`</td><td>Scrape/net</td><td>39 m</td><td>Brockman Iron Formation, Joffre Member (PHbj) – J2; or Brockman Iron Formation, Joffre Member (PHbj) – J1 (shaly)</td></tr>
</table>

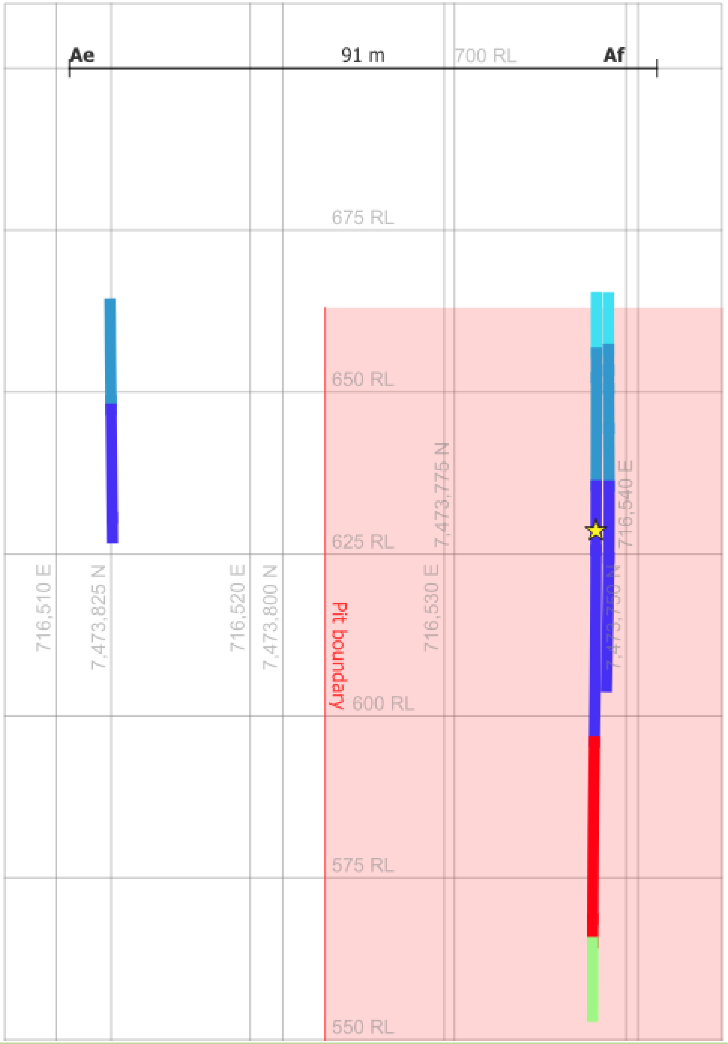
Bore geology modelling	Species	Collection method	Depth	Geology
	*Anapistula* sp. S01	Trap	25 m	Brockman Iron Formation, Whaleback Shale (PHbw) - Undifferentiated

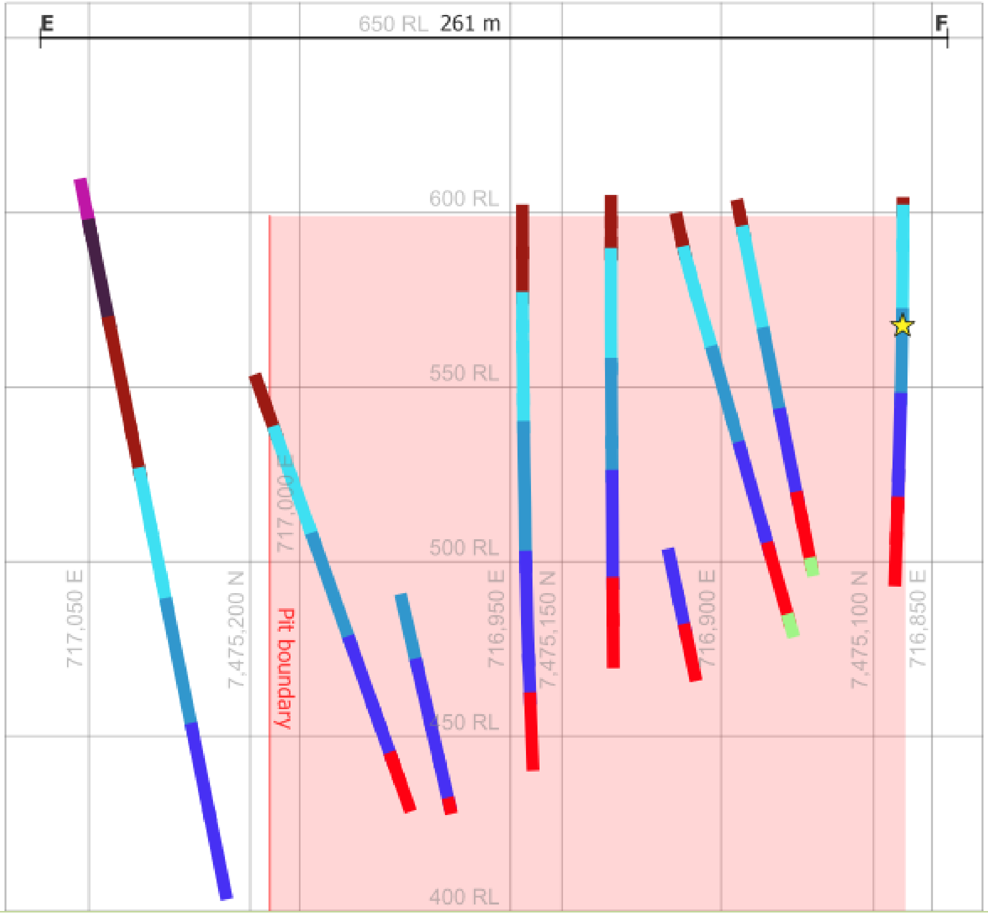
Bore geology modelling	Species	Collection method	Depth	Geology
	*Prethopalpus* 'BAR146'	Trap	30 m	Brockman Iron Formation, Joffre Member (PHbj) - J2

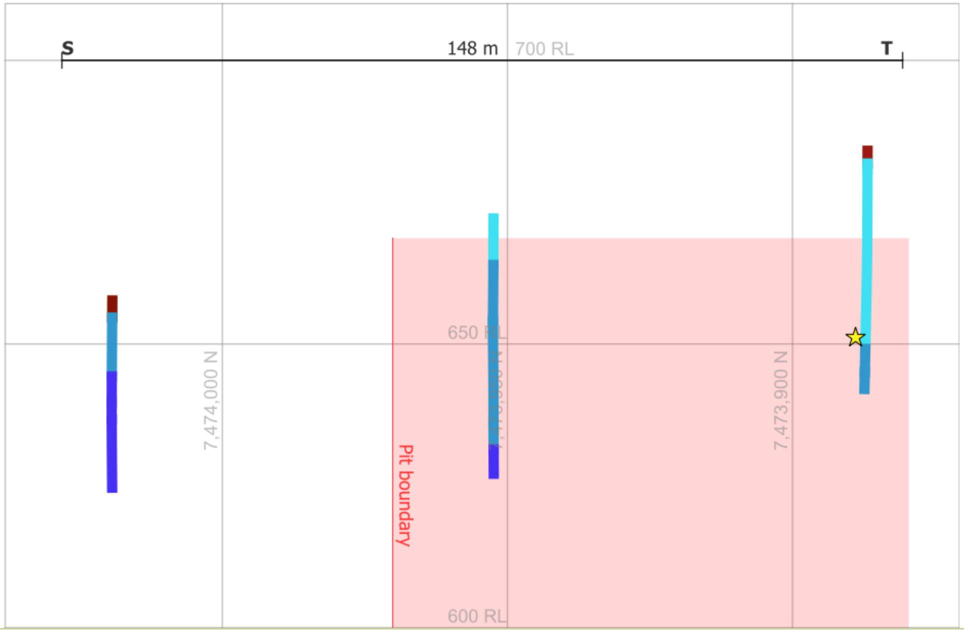
Bore geology modelling	Species	Collection method	Depth	Geology
	*Prethopalpus* sp. B32	Scrape/net	Unknown	Gravelly Siltstone; Brockman Iron Formation, Joffre Member - J1 (shaly); or Brockman Iron Formation, Whaleback Shale (PHbw) – Undifferentiated; or Brockman Iron Formation, Dales Gorge Member (PHbd) – D4; or Brockman Iron Formation, Dales Gorge Member (PHbd) – D3 (middle shaly); or Brockman Iron Formation, Dales Gorge Member (PHbd) – D2; or Colonial chert Member (Ahrc).

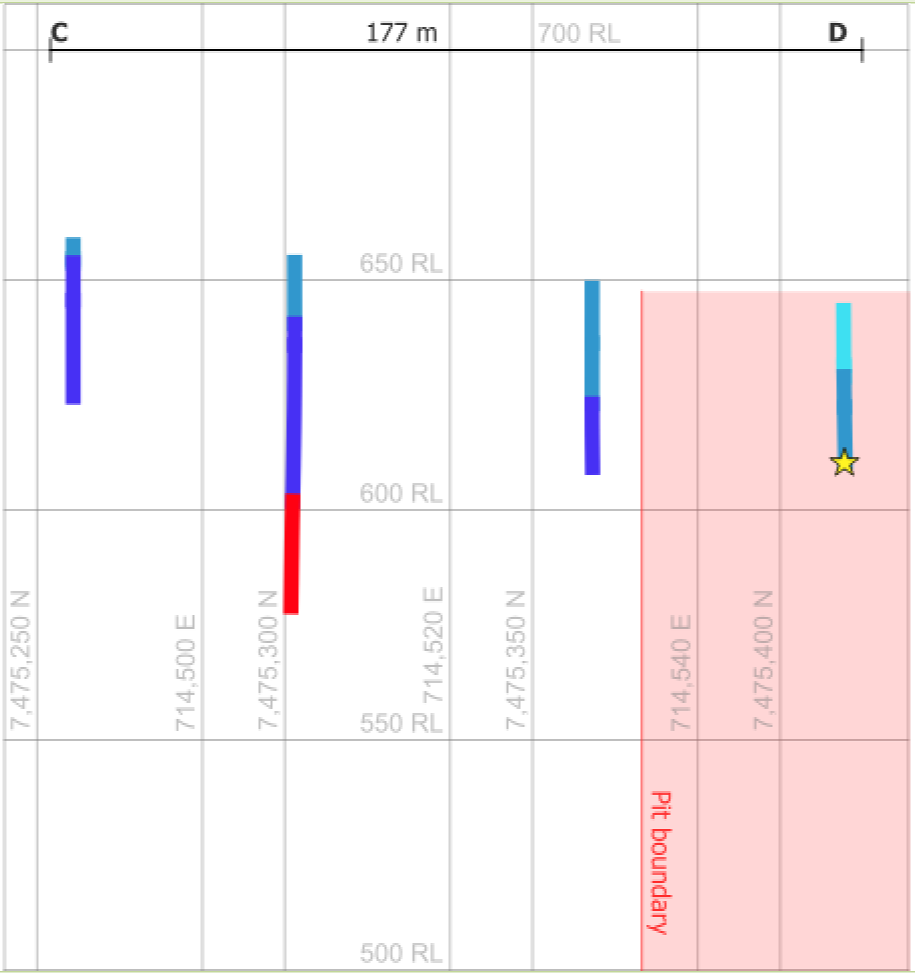
Bore geology modelling	Species	Collection method	Depth	Geology
				

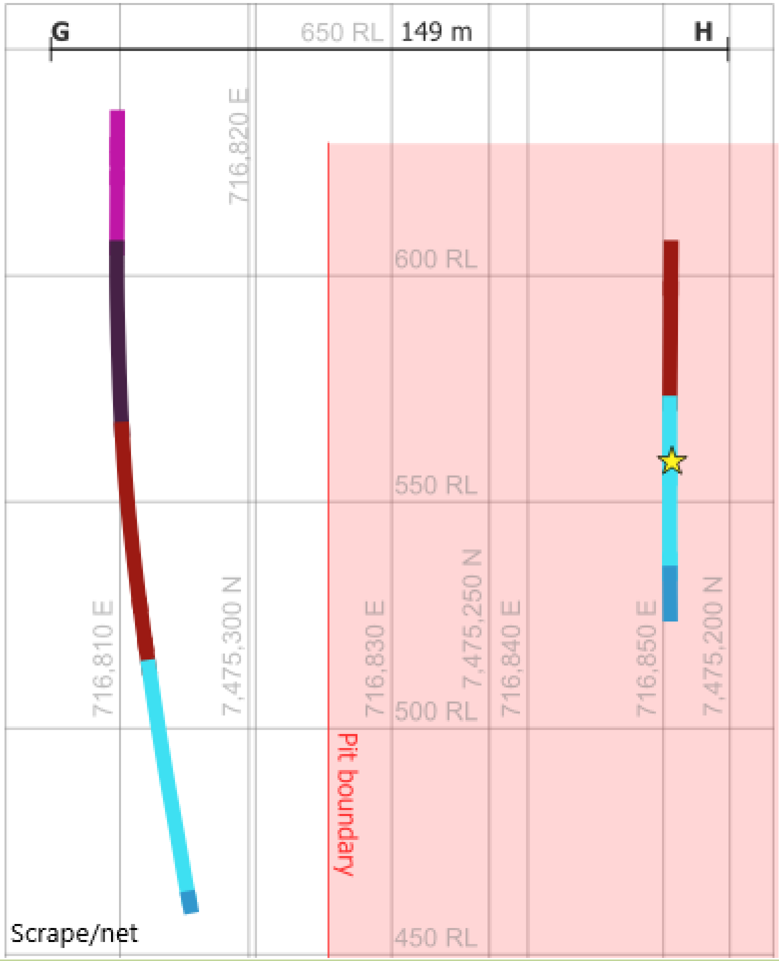
Bore geology modelling	Species	Collection method	Depth	Geology
	nr *Encoptarthria* 'BAR142'	Scrape/net	55.67 m	Brockman Iron Formation, Joffre Member (PHbj) – J2; or Brockman Iron Formation, Joffre Member (PHbj) – J1 (shaly)

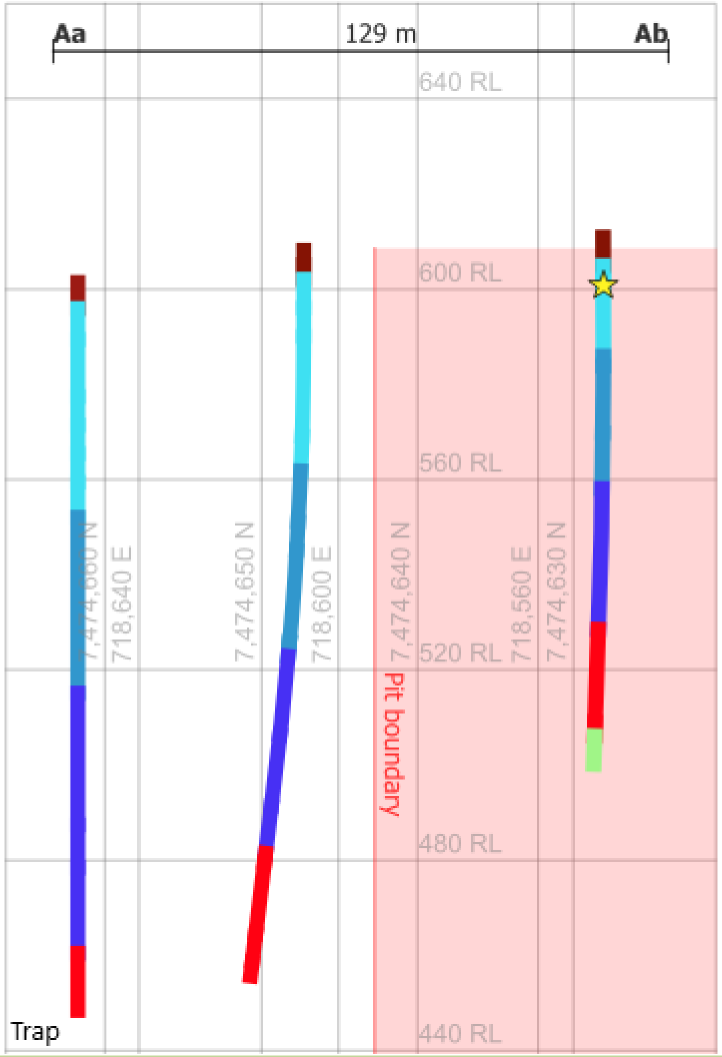
Bore geology modelling	Species	Collection method	Depth	Geology
	Scolopendridae sp. S05	Trap	36 m	Brockman Iron Formation, Dales Gorge Member (PHbd) – D2

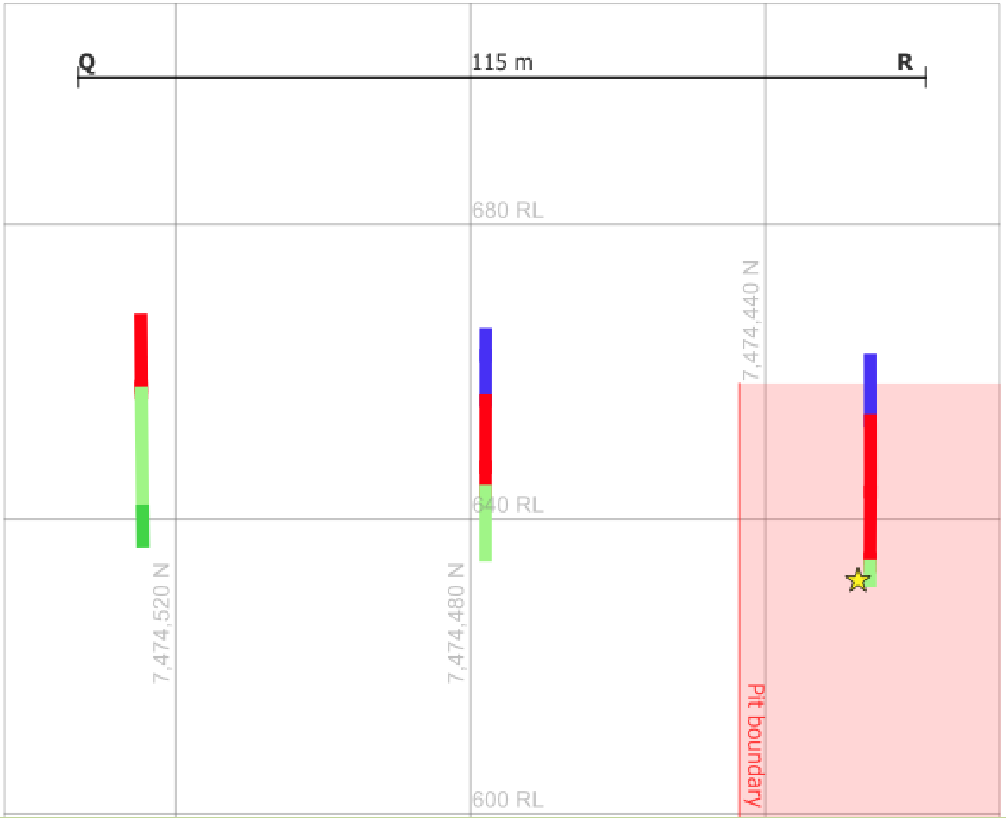
Bore geology modelling	Species	Collection method	Depth	Geology
	Pauropodidae 'BPU118'	Scrape/net	35 m	Brockman Iron Formation, Whaleback Shale (PHbw) – Undifferentiated; or Brockman Iron Formation, Dales Gorge Member (PHbd) – D4; or Brockman Iron Formation, Dales Gorge Member (PHbd) – D3 (middle shaly)

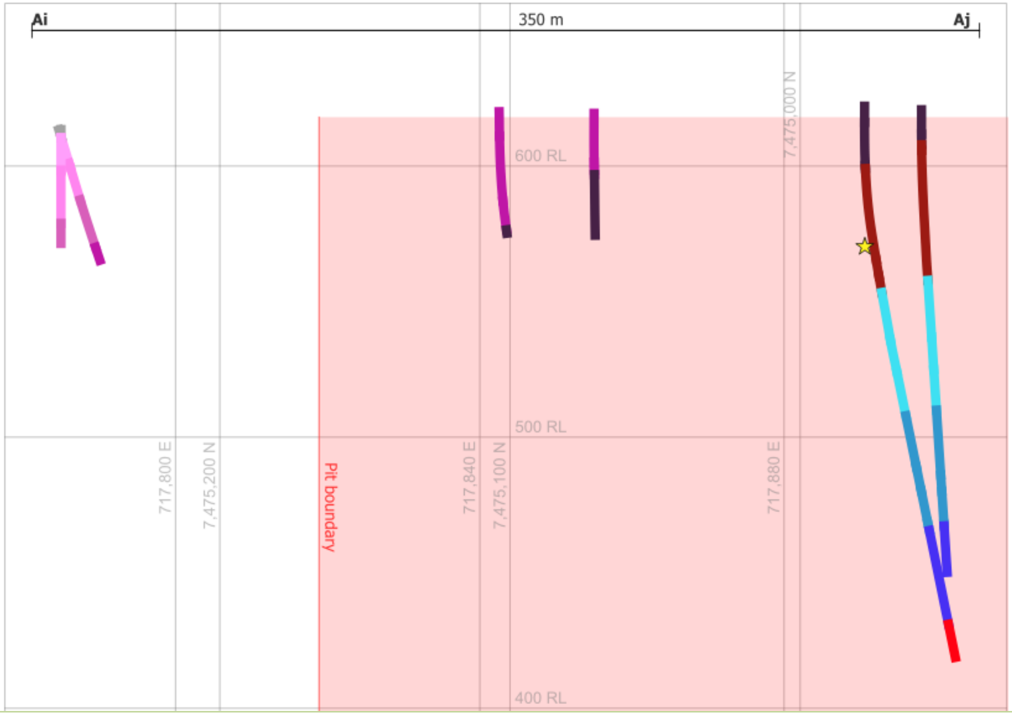
Bore geology modelling	Species	Collection method	Depth	Geology
	Pauropodidae 'BPU119'	Scrape/net	33 m	Brockman Iron Formation, Whaleback Shale (PHbw) – Undifferentiated; or Brockman Iron Formation, Dales Gorge Member (PHbd) - D4

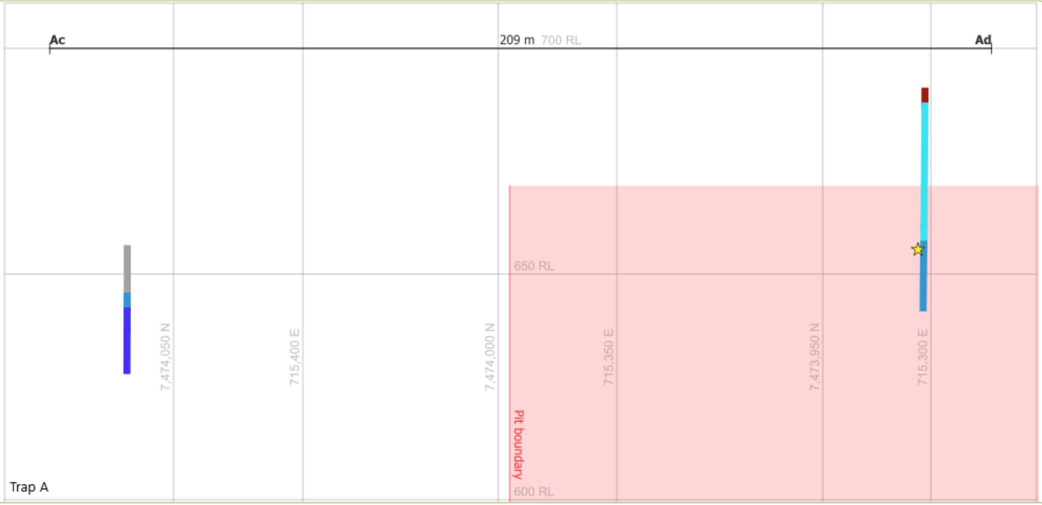
Bore geology modelling	Species	Collection method	Depth	Geology
	*Hanseniella* 'BSYM129'	Scrape/net	33 m	Brockman Iron Formation, Dales Gorge Member (PHbd) - D4; or Brockman Iron Formation, Dales Gorge Member (PHbd) – D3 (middle shaly)

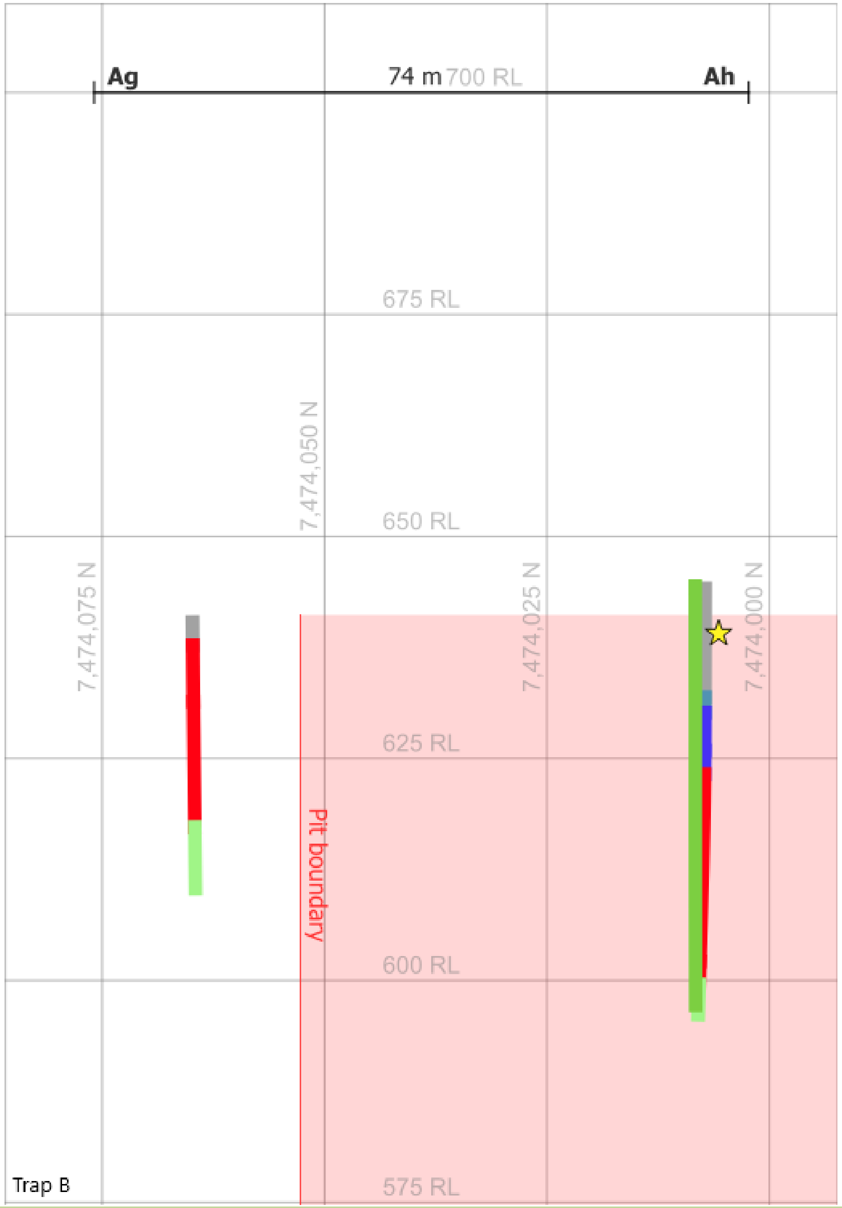
Bore geology modelling	Species	Collection method	Depth	Geology
	*Hanseniella* sp. B43-DNA	Scrape/net; Trap	47.42 m (scrape/net);10 m (trap)	Brockman Iron Formation, Whaleback Shale (PHbw) – Undifferentiated; or Brockman Iron Formation, Dales Gorge Member (PHbd) - D4

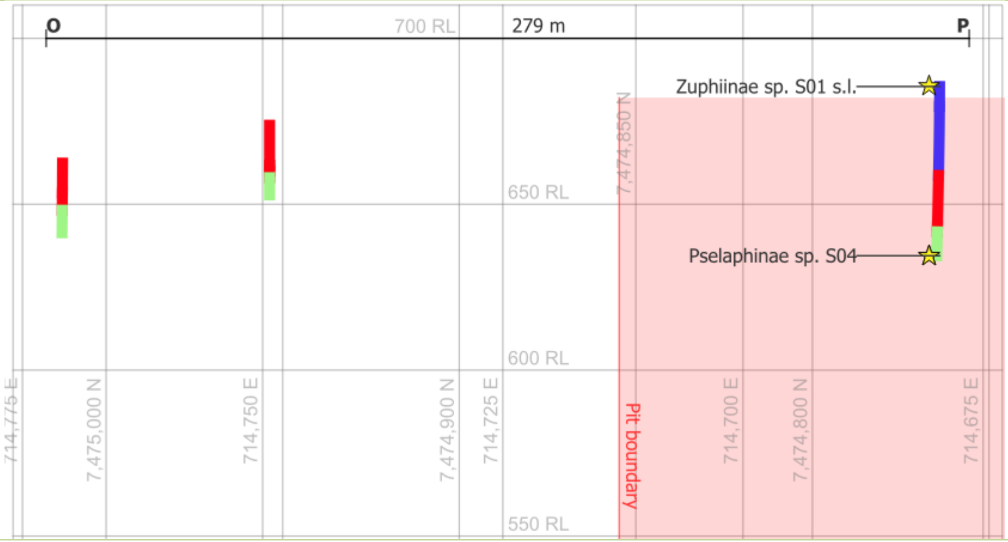
Bore geology modelling	Species	Collection method	Depth	Geology
				

Bore geology modelling	Species	Collection method	Depth	Geology
	*Phaconeura* Biologic HEMI002	Scrape/net	30 m	Brockman Iron Formation, Dales Gorge Member (PHbd) - D2; or Colonial chert Member (Ahrc); or Mt McRae Shale - Upper

Bore geology modelling	Species	Collection method	Depth	Geology
	Coleoptera \`BCO236\`	Scrape/net	52 m	Brockman Iron Formation, Joffre Member - J1 (shaly); or Brockman Iron Formation, Whaleback Shale (PHbw) - Undifferentiated

Bore geology modelling	Species	Collection method	Depth	Geology
	*Holoparamecus* `BCO255`	Trap	35 m (Trap A)/5 m (Trap B)	Brockman Iron Formation, Dales Gorge Member (PHbd) - D3 (middle shaly); and Gravelly Siltstone


Ag
74 m
700 RL
Ah
675 RL
7,474,050 N
650 RL
7,474,075 N
7,474,025 N
7,474,000 N
625 RL
Pit boundary
600 RL
Trap B
575 RL

Bore geology modelling	**Species**	**Collection method**	**Depth**	**Geology**
	Pselaphinae sp. S04; Zuphiinae sp. S01 s.l.	Scrape/net	51 m (Pselaphinae sp. S04); Unknown (Zuphiinae sp. S01 s.l)	Brockman Iron Formation, Dales Gorge Member (PHbd) - D2; or Colonial chert Member (Ahrc); or Mt McRae Shale - Upper

5.2. Troglofauna from Ministers North

The desktop review and the field survey recorded a rich troglofauna community in the Survey Area (Tables 5 and 9). The 1551 troglofauna specimens collected during the survey belong to at least 47 species (Figure 9; Table 5). The desktop and the survey identified 48 species of troglofauna potentially restricted to the Survey Area (Table 9). 18 potentially restricted species identified in the desktop search were not retrieved in the survey. The survey collected 19 new species potentially restricted to the Survey Area. Of the species potentially restricted to the Survey Area collected during the survey, eight of them were represented by single specimens, and another three species had specimens collected from single bores (Table 9), suggesting these species might have small ranges or occur in low abundance so that sampling underrepresented their ranges.

Thirty-two of the 48 species of troglofauna known only from the Survey Area were also recorded in locations outside the proposed mining pits, thus, it is unlikely that those species will be significantly impacted by the mining development (Figures 11-19). Sixteen species were only recorded inside the proposed mining pits (Figure 20): the palpigrades Palpigradi sp. B24 and Palpigradi \`BPAL054\`, the spiders *Anapistula* sp. S01, *Prethopalpus* 'BAR146', *Prethopalpus* sp. B32 and nr *Encoptarthria* 'BAR142', the chilopod Scolopendridae sp. S05, the pauropods Pauropodidae 'BPU118' and Pauropodidae 'BPU119', the symphylans *Hanseniella* 'BSYM129' and *Hanseniella* sp. B43-DNA, the hemipteran *Phaconeura* Biologic HEMI002, and the coleopterans Coleoptera \`BCO236\`, *Holoparamecus* \`BCO255\`, Pselaphinae sp. S04, and Zuphiinae sp. S01 s.l.

Palpigradi \`BPAL054\`, *Prethopalpus* 'BAR146', nr *Encoptarthria* 'BAR142', Pauropodidae 'BPU118, Pauropodidae 'BPU119', *Hanseniella* 'BSYM129', *Phaconeura* Biologic HEMI002, Coleoptera \`BCO236', and *Holoparamecus* \`BCO255\` are new species collected during the 2023/24 field survey (Table 9). Palpigradi sp. B24, *Anapistula* sp. S01, *Prethopalpus* sp. B32, Scolopendridae sp. S05, Pselaphinae sp. S04, and Zuphiinae sp. S01 s.l. were all collected during the 2009/10 survey by Subterranean Ecology (Subterranean Ecology 2010) and have not been recollected during the 2017/18 or 2023/24 field surveys (Table 9). *Hanseniella* sp. B43-DNA is the only species known only from inside the proposed mining pits that had its distribution extended by the 2023/24 field survey. *Hanseniella* sp. B43-DNA was collected 1.8 km apart from the original collection site of the species in 2017 by Bennelongia (Bennelongia 2018).

It should be noted that a few of those currently restricted species that were collected in early samplings by Subterranean Ecology (Subterranean Ecology 2010) may not have been successfully reconciled with the results of the latter sampling and are, thus, represented as two species when they are really one. *Anapistula* sp. S01 collected by Subterranean Ecology could be the same as *Anapistula* sp. 'BAR147' collected by Bennelongia. If that is the case, *Anapistula* sp. S01 would not be restricted to the mining pits. *Prethopalpus* sp. B32 collected by Subterranean Ecology could be the same as *Prethopalpus* 'BAR146' or *Prethopalpus* 'BAR145' collected by Bennelongia. If *Prethopalpus* sp. B32 is the same as *Prethopalpus* 'BAR145', it would not be a restricted species. If *Prethopalpus* sp. B32 is the same as *Prethopalpus* 'BAR146', there would exist one restricted species of *Prethopalpus* instead of two. The species nr *Encoptarthria* 'BAR142' collected by Bennelongia could be the same as Gnaphosidae sp. S03 collected by Subterranean Ecology. If that is the case, nr *Encoptarthria* 'BAR142'would not be restricted to the mining pits. The species Pauropodidae 'BPU118' and Pauropodidae 'BPU119' collected by Bennelongia could be the same as Pauropoda sp. S04 collected by Subterranean Ecology. If that is the case, there would be only one restricted species of Pauropodidae. At this point, it was not possible to confirm that the IDs of those species were the same, therefore, they were treated as different species.

Both palpigrade species, the spiders *Anapistula* sp. S01, *Prethopalpus* 'BAR146' and nr *Encoptarthria* 'BAR142', the chilopod Scolopendridae sp. S05, the pauropod Pauropodidae 'BPU118', the symphylan *Hanseniella* sp. B43-DNA, the hemipteran *Phaconeura* Biologic HEMI002, and the coleopteran *Holoparamecus* \`BCO255\` were collected in geologies also present in drill holes outside the proposed mining pits in close proximity to their respective collection locations. The pauropod Pauropodidae

'BPU119', the symphylan *Hanseniella* 'BSYM129', and the coleopterans Coleoptera `BCO236`, Pselaphinae sp. S04, and Zuphiinae sp. S01 s.l. were collected in geologies that were not retrieved in the immediate bores present outside the mining pits. However, the absence of available bores outside the mining pits with the same geology does not indicate that those species cannot occur outside the mining pits.

6. CONCLUSIONS

The stygofauna assemblage in the Survey Area is poor and has low conservation significance as a community. The low number of species of stygofauna is the result of large depth to groundwater across most of the Survey Area. In contrast, a rich troglofauna community has been found in the Survey Area, with 48 species currently known only from the Ministers North Survey Area and 16 species collected only from inside the mining pits. However, a limited number of species have the potential to be restricted to the Ministers North mining pits (Pauropodidae 'BPU119', *Hanseniella* 'BSYM129', Coleoptera `BCO236`, Pselaphinae sp. S04, and Zuphiinae sp. S01 s.l.). Although the number of species currently recognised as known only from the Survey Area is high, many of these species are unlikely to actually be restricted to the Survey Area because occurrence at low abundance is likely to lead to species ranges being under-estimated.

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8. APPENDICES

Appendix 1. Stygofauna identified in the desktop search

Higher order	Lowest identification	No. of individuals
Nematoda	Nematoda spp.	463
	Nematoda sp. 04 (PSS)	21
	Nematoda sp. 12 (PSS)	1
Rotifera		
Bdelloidea	Bdelloidea sp.	22
	Bdelloidea sp. 2:2	1
Monogononta		
Flosculariacea		
Filiniidae	*Filinia* sp.	5
Platyhelminthes		
Turbellaria	Turbellaria sp.	862
Mollusca		
Gastropoda		
Hypsogastropoda		
Hydrobiidae	Hydrobiidae sp.	1
Annelida	Annelida sp.	4
Clitellata	Oligochaeta sp.	701
Enchytraeidae	Enchytraeidae sp.	799
	Enchytraeidae `2 bundle` s.l. (long thin 2 per seg)	3
	Enchytraeidae `2 bundle` s.l. (short sclero 4 per seg)	43
	Enchytraeidae `3 bundle` s.l. (short sclero)	94
	Enchytraeidae `E06`	247
	Enchytraeidae sp. E03	1
	Enchytraeidae sp. E07	46
	Enchytraeidae sp. E09	2
	Enchytraeidae sp. E11 (2 bundle short sclero)	43
	Enchytraeus sp. AP PSS1 s.l.	409
	Enchytraeus sp. AP PSS2 s.l.	71
Tubificida		
Haplotaxidae	Haplotaxidae sp. S01	1
Naididae	Naididae sp.	7
Naididae	Naididae sp. N01	2
	Naididae sp. N02	1
	Naididae sp. N07	1
	Naididae sp. S03	9
	Ainudrilus sp.	71
	Ainudrilus sp. WA25 (PSS)	6
	Ainudrilus sp. WA26 (PSS)	70
	Allonais ranauana	3
	Dero furcata	7
	Pristina aequiseta	5

Higher order	Lowest identification	No. of individuals
	Pristina leidyi	2
	Pristina longiseta	149
	Tubificinae sp.	8
	Tubificinae `stygo type 1` (imm Ainudrilus ?WA25/26) (PSS)	45
	Tubificinae `stygo type 1A`	5
	Tubificinae `stygo type 5`	12
	Tubificinae `WA28` (SAP)	1
	Tubificinae sp. B09	2
Phreodrilidae	Phreodrilidae sp.	157
	Phreodrilidae `BOL038` (AP SVC)	7
	Phreodrilidae sp. AP DVC s.l.	266
	Phreodrilidae sp. AP SVC s.l.	144
	Phreodrilidae sp. P01-1	1
	Phreodrilidae sp. P02	2
	Phreodrilidae sp. P04	16
	Phreodrilidae sp. P12	18
	Phreodrilidae sp. P19	2
	Phreodrilus peniculus	4
	Insulodrilus sp.	21
	Insulodrilus lacustris s.l.	20
	Insulodrilus lacustris s.l. Pilbara type 2/3 (PSS)	4
Aeolosomatidae	*Aeolosoma* sp. 1 (PSS)	26
	Aeolosoma sp. 3 (PSS)	21
Arthropoda		
Crustacea		
Ostracoda	Ostracoda sp. unident.	272
Podocopida		
Candonidae	Candonidae sp.	9
	Candonidae `BOS1183`	1
	Candonidae `MJ-UM1`	71
	?Candoninae sp.	4
	Areacandona `BOS1669`	8
	Areacandona sp.	8
	Areacandona mulgae	1
	Areacandona nr *mulgae*	1
	Candonopsis sp.	1
	Candonopsis `BOS1831`	5
	Candonopsis tenuis	146
	Candonopsis nr *tenuis*	2
	?*Candonopsis williami*	1
	Deminutiocandona `1` (PSS)	1
	Deminutiocandona mica	1
	Deminutiocandona murrayi	79
	Deminutiocandona stomachosa	4
	Humphreyscandona sp.	20

Higher order	Lowest identification	No. of individuals
	Humphreyscandona janeae	3
	Humphreyscandona waldockae	1
	Humphreyscandona woutersi	1
	Meridiescandona sp.	137
	Meridiescandona `1` (PSS)	7
	Meridiescandona `3` (PSS)	8
	Meridiescandona `BOS171`	47
	Meridiescandona `BOS399`	9
	Meridiescandona facies	2178
	Meridiescandona nr *facies* (PSS)	8
	Meridiescandona lucerna	498
	Meridiescandona marillanae	270
	Notacandona sp.	1
	nr *Notacandona* sp.	1
	Neocandona `1` (PSS)	2
	?*Notacandona boultoni*	6
	Notacandona boultoni	850
	Notacandona modesta	34
	Notacandona nr *modesta* (PSS)	1
	Notacandona quasiboultoni	5
	Pilbaracandona sp.	22
	Pilbaracandona eberhardi	3
	Pilbaracandona rosa	1
	Pilbaracandona nr *rosa*	3
Cyprididae	Cyprididae sp.	15
	Cypretta sp.	16
	Cypretta seurati	15
	Cypridopsis `BOS1401`	4
	Sarscypridopsis ochracea	2
Darwinulidae	Darwinulidae sp.	11
	Vestalenula sp.	1
	Vestalenula marmonieri	7
Limnocytheridae	*Gomphodella* sp.	16
	Gomphodella `4` (PSS)	1
	Gomphodella `BOS200`	7
	Gomphodella `BOS334`	7
	Gomphodella alexanderi	130
	Gomphodella hirsuta	8
	Gomphodella yandii	247
	Limnocythere dorsosicula	11
Candonidae	Candonidae `BOS1848`	1
Maxillopoda		
Calanoida		
Ridgewayiidae	*Stygoridgewayia trispinosa*	3
Copepoda	Copepoda sp.	45

Higher order	Lowest identification	No. of individuals
Cyclopoida		
	Cyclopoida sp.	3160
Cyclopidae	*Australocyclops similis* s.l.	3
	Australoeucyclops karaytugi	4
	Bryocyclops sp. 1 (PSS)	1
	Diacyclops sp.	82
	Diacyclops \`BCY059\` (*humphreysi* s.l.)	881
	Diacyclops cockingi	1261
	Diacyclops humphreysi	27
	Diacyclops humphreysi s.l.	5105
	Diacyclops humphreysi unispinosus	62
	Diacyclops scanloni	10
	Diacyclops sobeprolatus	592
	Dussartcyclops 2222 \`BCY095\`	8
	Dussartcyclops sp. B10	3
	Ectocyclops phaleratus	2
	Fierscyclops frustratio	4
	Goniocyclops sp.	2
	Mesocyclops sp.	1
	Mesocyclops brooksi	3
	Mesocyclops darwini	97
	Mesocyclops notius	10
	Microcyclops varicans	392
	Orbuscyclops westaustraliensis	8
	Pescecyclops sp. B01 (nr *pilbaricus*)	30
	Paracyclops chiltoni	3
	Pescecyclops pilbaricus	55
	Pescecyclops pilbaricus s.l.	1
	Pilbaracyclops sp. B03 (nr *frustratio*)	3
	Pilbaracyclops frustratio	24
	Thermocyclops sp.	3
	Thermocyclops aberrans	329
	Thermocyclops decipiens	11
Harpacticoida	Harpacticoida sp.	169
Ameiridae	Ameiridae sp.	1
	Gordanitocrella trajani	474
	Inermipes sp. 1 (PSS)	23
	Megastygonitocrella bispinosa	3
	Nitokra \`BHA340\`	6
Canthocamptidae	Canthocamptidae sp. B01	69
	Canthocamptidae sp. B02	2
	Australocamptus sp.	1
	Elaphoidella \`BHA342\`	19
	Elaphoidella sp. 2 (PSS)	8
	Elaphoidella sp. 3 (PSS)	4

Higher order	Lowest identification	No. of individuals
	Elaphoidella sp. S02	1
	nr *Epactophanes* sp. B01	1
Miraciidae	*Schizopera* `BHA341`	1
	Schizopera sp. B02	8
Parastenocarididae	Parastenocarididae sp.	1
	Parastenocaris sp.	5
	Parastenocaris `BHA343`	1
	Parastenocaris `COP001`	1
	Parastenocaris sp. B09	1
	Parastenocaris sp. B25	4
	Parastenocaris jane	11
	Parastenocaris jane s.l.	3
Malacostraca		
Syncarida	Syncarida sp.	10
Bathynellidae	*Bathynella* sp. 1 (Weeli Wolli)	1
	Bathynella sp. 2 (South Flank)	4
	Bathynella sp. B23	2
	Bathynella sp. B24	3
	Pilbaranella `BSY372`	9
	Pilbaranella sp.	4
Parabathynellidae	Parabathynellidae sp.	6
	Parabathynellidae sp. (Hope Downs)	2
	Parabathynellidae sp. MJ	9
	Parabathynellidae sp. S02	2
	Atopobathynella sp.	44
	Atopobathynella sp. B04	22
	Atopobathynella sp. B07	28
	Atopobathynella sp. MJ	5
	Atopobathynella sp. S02	8
	Billibathynella `BSY187-DNA`	9
	Brevisomabathynella `BSY222`	4
	Brevisomabathynella nr *pilbaraensis*	2
	nr *Billibathynella* sp.	2
	nr *Billibathynella* sp. B01	354
	nr *Billibathynella* sp. B02 (=Parabathynellidae sp. S03)	15
	Notobathynella sp.	11
Amphipoda	Amphipoda sp.	81
Eriopisidae	Nedsia sp.	1
Neoniphargidae	Neoniphargidae sp. B03	87
Paramelitidae	Paramelitidae sp.	649
	Paramelitidae `Helix-WWA1`	40
	Paramelitidae `Helix-WWA2`	16
	Paramelitidae `Helix-WWA3`	1
	Paramelitidae `Helix-YB2`	16
	Paramelitidae `Helix-YB3`	7

Higher order	Lowest identification	No. of individuals
	Paramelitidae `Helix-YB4`	2
	Paramelitidae Genus 2 `BAM151`	2
	Paramelitidae Genus 2 sp.	3
	Paramelitidae Genus 2 sp. B01	103
	Paramelitidae Genus 2 sp. B02	1804
	Paramelitidae Genus 2 sp. B03	46
	Paramelitidae Genus 2 sp. B21 (=S06)	70
	Paramelitidae sp. 2 s.l. (PSS)	151
	Paramelitidae sp. 9 (PSS) s.l.	1
	Paramelitidae sp. B03	110
	Paramelitidae sp. B16	97
	Paramelitidae sp. B22	1
	Paramelitidae sp. B26 (Helix-AMP018)	156
	Paramelitidae sp. MJ1-UM1	1333
	Paramelitidae sp. S05	56
	Chydaekata sp.	468
	Chydaekata `2/UWA-B`	12
	Chydaekata `E`	160
	Chydaekata `UWA-C`	2
	Chydaekata sp. MJ1-UM1	1093
	Chydaekata sp. S01	2
	Maarrka sp.	1
	Maarrka `Helix-YB5`	3
	Maarrka sp. MA	2
	Maarrka sp. MJ1-UM1	37
	Maarrka weeliwollii	86
	Pilbarus millsi s.l.	59
Isopoda		
Tainisopidae	*Maarrka weeliwollii*	27
	Pygolabis weeliwolli	688
	Pygolabis sp.	31
	Pygolabis humphreysi	49
	Pygolabis sp. B06 (=BIOTA yandi sp. 1)	54
	Pygolabis sp. MJ-UM	43

Appendix 2. Troglofauna identified in the desktop search

Higher order	Lowest identification	No. of individuals
Arthropoda		
Arachnida		
Opiliones	Opiliones sp.	2
	Opiliones sp. B02	2
	Opiliones sp. B03	2
Assamiidae	*Dampetrus* sp. B01 (nr *isolatus*)	8

Higher order	Lowest identification	No. of individuals
	Dampetrus sp. B05 (nr *isolatus*)	1
Phalangodidae	Phalangodidae sp.	1
Palpigradi	Palpigradi sp.	16
	Palpigradi sp. B01	46
	Palpigradi sp. B15	1
	Palpigradi sp. B19	1
	Palpigradi sp. B23	1
	Palpigradi sp. B24	1
	Palpigradi sp. MA	9
	Palpigradi sp. UM	1
Eukoeneniidae	*Eukoenenia* sp. S01	5
Pseudoscorpiones	Pseudoscorpiones sp.	4
Chernetidae	Chernetidae sp.	4
Chthoniidae	Chthoniidae sp.	4
	Chthoniidae `Helix-PC056`	1
	Chthoniidae `Helix-PC057`	1
	Chthoniidae sp. MJ	1
	Lagynochthonius sp.	9
	Lagynochthonius `Helix-PC055`	2
	Lagynochthonius `PSE039`	52
	Lagynochthonius `PSE043`	1
	Lagynochthonius `PSE045`	4
	Lagynochthonius `PSE096`	2
	Lagynochthonius `sp. Packsaddle`	3
	Lagynochthonius `yandi`	1
	Lagynochthonius sp. B19	1
	Lagynochthonius sp. B20 (= sp. S04)	10
	Lagynochthonius sp. S03	5
	Lagynochthonius `sp. indet.`	1
	Tyrannochthonius SP.	5
	Tyrannochthonius `PSE046`	6
	Tyrannochthonius `PSE050`	8
	Tyrannochthonius `PSE055`	12
	Tyrannochthonius `PSE066`	11
	Tyrannochthonius sp. B14	1
	Tyrannochthonius sp. B37	1
	Tyrannochthonius sp. MA	1
	Tyrannochthonius sp. S05	1
	Tyrannochthonius aridus	1
Hyidae	*Indohya* sp.	1
	Indohya `BPS274`	1
	Indohya `BPS495`	1
	Indohya `PSE005`	11
	Indohya `PSE150`	1
	Indohya sp. B06	2

Higher order	Lowest identification	No. of individuals
Olpiidae	Olpiidae sp.	3
	Olpiidae `marillana`	1
	Olpiidae sp. MJ1	3
	Olpiidae sp. MJ2	1
	Olpiidae sp. MJ3	1
Schizomida	Schizomida sp.	4
Hubbardiidae	*Draculoides* sp.	116
	Draculoides `BHD2`	6
	Draculoides `BHD3`	7
	Draculoides `BHD4`	5
	Draculoides `BHD5`	3
	Draculoides `BSC001` (B2 gp)	5
	Draculoides `BSC003` (B2 gp)	4
	Draculoides `BSC007` (B2 gp)	4
	Draculoides `BSC021` (B2 gp)	3
	Draculoides `BSC022` (B2 gp)	14
	Draculoides `BSC024`	1
	Draculoides `BSC025`	1
	Draculoides `BSC026`	1
	Draculoides `BSC033` (B2 gp)	2
	Draculoides `BSC034-DNA` (B2 gp)	2
	Draculoides `BSC036` (SCH030 complex)	3
	Draculoides `BSC039`	5
	Draculoides `BSC042-DNA`	4
	Draculoides `Helix-SCH042`	9
	Draculoides `Helix-SCH043`	5
	Draculoides `Helix-SCH044`	4
	Draculoides `Helix-SCH045`	20
	Draculoides `Helix-SCH046`	14
	Draculoides `Helix-SCH048`	1
	Draculoides `Helix-SCH049`	12
	Draculoides `Helix-SCH050`	2
	Draculoides `Helix-SCH051`	6
	Draculoides `Helix-SCH052`	5
	Draculoides `Helix-SCH057`	20
	Draculoides `Helix-SCH059/SCH060`	6
	Draculoides `Helix-SCH059`	1
	Draculoides `Helix-SCH060`	3
	Draculoides `Helix-SCH061`	10
	Draculoides `Helix-WWS1`	1
	Draculoides `marillana`	2
	Draculoides `MJ`	28
	Draculoides `SCH002`	19
	Draculoides `SCH012`	61
	Draculoides `SCH013`	26

Higher order	Lowest identification	No. of individuals
	Draculoides `SCH018` (B2 gp)	9
	Draculoides `SCH020`	10
	Draculoides `SCH021`	22
	Draculoides `SCH022` (B2 gp)	57
	Draculoides `SCH023` (B2 gp)	26
	Draculoides `SCH029`	9
	Draculoides `SCH030`/`SCH107-DNA`	6
	Draculoides `SCH054`	7
	Draculoides `SCH065`	7
	Draculoides `SCH071`	1
	Draculoides `SCH092`	2
	Draculoides `SJ` (SCH054-DNA, SCH030 complex)	6
	Draculoides `SO` (SCH030 complex)	2
Araneae	Araneae sp.	6
	Araneomorphae sp.	3
?Gnaphosidae	?Gnaphosidae sp. B01	1
	?Gnaphosidae sp. MJ	4
?Theridiidae	?Theridiidae sp. B01	1
Gnaphosidae	Gnaphosidae sp. B01	1
	Gnaphosidae sp. S01	1
	Gnaphosidae sp. S03	2
	nr *Encoptarthria* sp.	5
	nr *Encoptarthria* sp. B01	13
	nr *Encoptarthria* sp. B06	1
Linyphiidae	Linyphiidae sp.	6
	Linyphiidae sp. B03 (=Araneae sp. S05)	38
	Linyphiidae sp. S01	1
Oonopidae	Oonopidae sp. B19-DNA	1
	Oonopidae sp. MJ	2
	Myrmopopaea sp.	1
	Pelicinus `BAR133`	2
	Pelicinus sp. B02	8
	Pelicinus sp. B05	1
	Prethopalpus sp.	11
	Prethopalpus `BAR116`	1
	Prethopalpus julianneae	1
	Prethopalpus maini	6
	Prethopalpus pearsoni	3
	Prethopalpus sp. (Araneae sp. S07)	1
	Prethopalpus sp. B03 (ex Araneomorphae/ Oonopidae sp. B03)	1
	Prethopalpus sp. B06	2
	Prethopalpus sp. B18 (=?Araneae sp. S05)	6
	Prethopalpus sp. B24	1
	Prethopalpus sp. B27	2
	Prethopalpus sp. B32	2

Higher order	Lowest identification	No. of individuals
	Prethopalpus sp. MA	1
Symphytognathidae	*Anapistula* sp.	5
	Anapistula sp. B02	1
	Anapistula sp. S01	2
Crustacea		
Maxillopoda		
Cyclopoida		
Cyclopidae	*Microcyclops varicans*	2
Malacostraca		
Isopoda		
Armadillidae	Armadillidae sp.	2
	Armadillidae `ISO001`	2
	Armadillidae `marillana`	2
	Armadillidae sp. B07	4
	Armadillidae sp. B11	2
	Buddelundia sp. NT	1
	Troglarmadillo sp.	1
	Troglarmadillo `BIS345`	6
	Troglarmadillo sp. B03	12
	Troglarmadillo sp. B06	4
	Troglarmadillo sp. B11	29
	Troglarmadillo sp. B13	5
	Troglarmadillo sp. B14	12
	Troglarmadillo sp. B26	6
	Troglarmadillo sp. B36	1
	Troglarmadillo sp. B37	3
	Troglarmadillo sp. B52	2
	Troglarmadillo sp. B57	1
	Troglarmadillo sp. B59	1
	Troglarmadillo sp. B62	2
	Troglarmadillo sp. B64 (= sp. S14)	9
	Troglarmadillo sp. B65	2
Philosciidae	Philosciidae sp. B03	17
	Philosciidae sp. B10	1
	Philosciidae sp. B15	1
	Philosciidae sp. MA	1
	nr *Andricophiloscia* sp. B03	1
	nr *Andricophiloscia* sp. B16	1
Chilopoda	Chilopoda sp.	6
Scolopendrida	Scolopendrida sp.	2
	Scolopendrida sp. B01	1
Cryptopidae	*Cryptops* SP.	7
	Cryptops `troglobitic`	2
	Cryptops `BSCOL059-DNA`	1
	Cryptops `BSCOL091`	2

Higher order	Lowest identification	No. of individuals
	Cryptops `BSCOL111`	1
	Cryptops sp. B07 (=*Scolopendrida* sp. S02)	10
	Cryptops sp. B10 (=*Scolopendrida* sp. S05)	1
	Cryptops sp. B15 (moved to)	2
	Cryptops sp. B39	1
	Cryptops sp. indet. MJ	1
	nr *Cryptops* sp. B11	1
Scolopendridae	Scolopendridae sp. S05	1
	Cormocephalus `blind, sp. B02`	1
	Cormocephalus `CHI003`	1
	Cormocephalus `sagmus`	1
Geophilida	Geophilida sp.	3
Chilenophilidae	Chilenophilidae `BGE053`	1
	Chilenophilidae sp. B04	1
	Chilenophilidae sp. B07	1
	Ribautia sp. B02	1
Schendylidae	*Australoschendyla* sp. B06	2
Diplopoda		
Polyxenida	Polyxenida sp.	10
	Polyxenida `marillana`	7
Lophoproctidae	Lophoproctidae sp.	11
	Lophoturus madecassus	715
Polyxenidae	Polyxenidae sp.	1
Polydesmida	Polydesmida sp. B03 (nr *Lissodesmus*)	1
	Polydesmida sp. B11	2
Dalodesmidae	Dalodesmidae sp. B01	25
Haplodesmidae	Haplodesmidae `BDI080`	1
Spirobolida		
Trigoniulidae	Trigoniulidae sp.	3
	Trigoniulidae `BDI075`	12
	Trigoniulidae `BDI079`	1
	Trigoniulidae sp. B03	34
	Trigoniulidae sp. B06	2
	Iulomorphidae SP.	6
Pauropoda	Pauropoda sp.	77
	Pauropoda sp. MA	3
	Pauropoda sp. MJ	1
	Pauropoda sp. S04	2
	Pauropoda sp. UM	6
Tetramerocerata	Tetramerocerata sp.	1
Pauropodidae	Pauropodidae sp.	1
	Pauropodidae `BPU076`	2
	Pauropodidae `BPU078`	1
	Pauropodidae `BPU114`	3
	Pauropodidae sp. B01 s.l.	25

Higher order	Lowest identification	No. of individuals
	Pauropodidae sp. B06	2
	Pauropodidae sp. B07	4
	Pauropodidae sp. B12	1
	Pauropodidae sp. B13	1
	Pauropodidae sp. B14	5
	Pauropodidae sp. B15	1
	Pauropodidae sp. B16	1
	Allopauropus sp. B11	1
	Decapauropus sp. B01	2
	Decapauropus sp. B02	14
	Decapauropus tenuis	6
Symphyla	Symphyla sp.	17
	Symphyla sp. MJ	1
	Symphyla sp. UM	2
Cephalostigmata	Cephalostigmata SP.	3
Scolopendrellidae	*Symphylella* sp.	4
	Symphylella `BSYM120`	1
	Symphylella `BSYM121`	1
	Symphylella sp. B03	1
	Symphylella sp. B05	2
	Symphylella sp. B13	1
Scutigerellidae	*Hanseniella* sp.	2
	Hanseniella sp. B07	7
	Hanseniella sp. B08	6
	Hanseniella sp. B09	1
	Hanseniella sp. B14	8
	Hanseniella sp. B21	3
	Hanseniella sp. B34	1
	Hanseniella sp. B35	9
	Hanseniella sp. B36-DNA	1
	Hanseniella sp. B37-DNA	1
	Hanseniella sp. B42-DNA	1
	Hanseniella sp. B43-DNA	1
	Hanseniella sp. MA	4
Entognatha		
Diplura	Diplura sp.	23
Japygidae	Japygidae sp.	10
	Japygidae `BDP155` (DPL002)	3
	Japygidae `BDP157`	1
	Japygidae `BDP159`	4
	Japygidae `BDP164`	1
	Japygidae `DPL002` s.l.	30
	Japygidae `DPL005`	2
	Japygidae `DPL007`	3
	Japygidae `DPL017`	3

Higher order	Lowest identification	No. of individuals
	Japygidae sp. B34	4
	Japygidae sp. S02_MJ	2
Parajapygidae	Parajapygidae sp.	18
	Parajapygidae `BDP173`	1
	Parajapygidae `DPL020`	4
	Parajapygidae `DPL023`	2
	Parajapygidae `DPL024`	1
	Parajapygidae sp. B09	1
	Parajapygidae sp. B25	1
	Parajapygidae sp. B27	1
	Parajapygidae sp. MJ1	1
	Parajapygidae sp. MJ2	1
	Parajapygidae sp. S03	1
Projapygidae	Projapygidae `BDP218`	1
	Projapygidae `MJ` (DPR001)	2
	Projapygidae `UM` (DPR002)	1
	Projapygidae sp. B02	2
	Projapygidae sp. B05	1
	Projapygidae sp. B09	1
	Projapygidae sp. B10	1
Insecta		
Zygentoma		
Nicoletiidae	Nicoletiidae sp.	2
	Nicoletiinae sp.	4
	Atelurinae sp.	7
	Ateluridae `MJ_UM_MA`	7
	Atelurinae sp. B04	1
	Atelurinae sp. B08	2
	Dodecastyla sp.	10
	Dodecastyla `BZY084` (nr *crypta*)	1
	Dodecastyla crypta	77
	Dodecastyla sp. B02 (=*Atelurodes* sp. S02)	72
	Trinemura sp.	7
	Trinemura `BZY105`	2
	Trinemura sp. ?UM	1
	Trinemura sp. B02 (nr *watsoni*)	11
	Trinemura sp. B03	3
	Trinemura sp. B09	7
	Trinemura sp. B25	1
	Trinemura sp. B32	1
	Trinemura sp. UM	1
Blattodea		
Blattidae	Blattidae sp.	255
	Blattodea sp.	159
	Blattidae `Helix-BNA`	2

Higher order	Lowest identification	No. of individuals
	Blattidae sp. B06 (= sp. S02)	113
Nocticolidae	*Nocticola* sp.	435
	Nocticola `BBL038` (cockingi s.l.)	31
	Nocticola `Helix-BNN`	4
	Nocticola cockingi	52
	Nocticola cockingi s.l.	253
	Nocticola quartermainei	25
	Nocticola quartermainei s.l.	92
	Nocticola sp. B09	3
	Nocticola sp. B10	30
	Nocticola sp. B31	8
	Nocticola `BBL038 / B10` (cockingi s.l.)	119
Hemiptera	Hemiptera sp.	32
Cixiidae	Cixiidae sp. B02	110
Meenoplidae	Meenoplidae sp.	1
	Meenoplidae sp. WAM-PHAC001/H-HEM003	127
	Phaconeura sp.	535
	Phaconeura `BHE030`	20
	Phaconeura sp. B02 (B form)	56
	Phaconeura sp. B02 (D form)	23
	Phaconeura sp. B02 s.l. (=Meenoplidae sp. S01)	213
	Phaconeura sp. B03 (winged, remnant eyes)	44
	Phaconeura sp. B06	98
	Phaconeura sp. B08	27
	Phaconeura sp. B13	121
	Phaconeura sp. B19	38
Reduviidae	Emesinae `marillana`	1
Coleoptera	Coleoptera sp.	39
	Coleoptera `marillana1`	5
	Coleoptera `marillana2`	6
	Coleoptera gen 1 sp. B06	2
	Coleoptera sp. B09	3
Brentidae	Brentidae sp. B02	1
Carabidae	Carabidae sp. B01	2
	Bembidiinae sp. B01	1
	Bembidiinae sp. B02	1
	Bembidiinae sp. B08	3
	Gilesdytes vixsulcatus	2
	Gracilanillus `BCO220`	1
	Hesperanillus `BCO247`	1
	Typhlozuphium sp. B02	7
	Typhlozuphium sp. B03	1
	Typhlozuphium sp. B04	1
	Typhlozuphium humicolum	9
	Typhlozuphium longipenne	1

Higher order	Lowest identification	No. of individuals
	Zuphiinae sp. S01 s.l.	1
	Zuphiini sp.	24
	Zuphiini sp. B04	1
	Zuphiini sp. UM	1
Curculionidae	Curculionidae sp.	1
	Curculionidae Genus 1 sp.	6
	Curculionidae Genus 1 sp. B02 (=Curculionidae sp. S02)	74
	Curculionidae Genus 1 sp. B14	4
	Curculionidae Genus 1 sp. B15 (B02=S02 clade)	6
	Curculionidae sp. UM	1
	Cryptorhynchinae sp.	3
	Cryptorhynchinae sp. B10	4
	Cryptorhynchinae sp. B19	1
	Cryptorhynchinae sp. B20 (=sp. MA)	3
	Cryptorhynchinae sp. MJ	2
	Cryptorhynchinae sp. S03	1
	Cyclominae sp. MA	2
Ptiliidae	*Ptinella* sp. B01 (=MC)	205
	Rodwayia sp. B02	1
Staphylinidae	Staphylinidae sp.	2
	nr *Claviger* sp. B01	1
	Pselaphinae sp. B01	13
	Pselaphinae sp. B02	2
	Pselaphinae sp. B12	1
	Pselaphinae sp. S04	3
	Pselaphinae sp. UM	4
Zopheridae	?Colydiinae `BCO256`	1
	?Colydiinae sp. MJ1	1
	?Colydiinae sp. MJ2	6
Diptera		
Phoridae	*Metopina* sp. B03	4
	Metopina sp. B05	1
Sciaridae	Sciaridae sp.	3
	Allopnyxia sp. B01	1108

Appendix 3. Details of the holes sampled for stygofauna or troglofauna in the Survey Area in 2023 and 2024

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN1673R	Scrape	-22.83426	119.1203	26/04/2023		33				
MN1699R	Scrape	-22.83422	119.1239	26/04/2023		90				
MN2589R	Scrape	-22.83386	119.1219	26/04/2023	97	108				
MN1587R	Scrape	-22.83583	119.1077	27/04/2023		48				
MN1603R	Scrape	-22.8345	119.109	27/04/2023		54				

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN2499R	Scrape	-22.83366	119.1128	27/04/2023	123	168				
MN1662R	Scrape	-22.83163	119.1179	27/04/2023	82	129				
MN2417R	Scrape	-22.83142	119.1072	27/04/2023		78				
MN2586R	Scrape	-22.83118	119.1217	27/04/2023		47				
MN1635R	Scrape	-22.83112	119.1137	27/04/2023	82	102				
MN0810R	Scrape	-22.83095	119.1102	27/04/2023		81				
MN2388R	Scrape	-22.83045	119.1055	27/04/2023		54				
MN2570R	Scrape	-22.83028	119.1199	27/04/2023	69	96				
MN2532R	Scrape	-22.82981	119.1157	27/04/2023		78				
MN2376R	Scrape	-22.82904	119.1042	27/04/2023		33				
MN1549R	Scrape	-22.82897	119.1016	27/04/2023		39				
MN1547R	Scrape	-22.82868	119.1001	27/04/2023		36				
MN2382R	Scrape	-22.82863	119.1056	27/04/2023		30				
MN2338R	Scrape	-22.82779	119.0969	27/04/2023		42				
MN2313R	Scrape	-22.82732	119.0942	27/04/2023		36				
MN2424R	Scrape	-22.82713	119.1083	27/04/2023		30				
MN2307R	Scrape	-22.82479	119.0936	27/04/2023		78				
MN0307R	Scrape	-22.8206	119.0904	27/04/2023		33				
MN1510R	Scrape	-22.82681	119.0921	28/04/2023		50				
MN0345R	Scrape	-22.82633	119.0959	28/04/2023		59				
MN2349R	Scrape	-22.82417	119.0981	28/04/2023		15				
MN0310R	Scrape	-22.82274	119.0915	28/04/2023		69				
MN0350R	Scrape	-22.82256	119.0959	28/04/2023		33				
MN0291R	Scrape	-22.81946	119.0869	28/04/2023		45				
MN0323R	Scrape	-22.8194	119.0924	28/04/2023		21				
MN0296R	Scrape	-22.81792	119.0884	28/04/2023		14				
MN0337R	Scrape	-22.8175	119.0943	28/04/2023		21				
MN0313R	Scrape	-22.81717	119.0915	28/04/2023		9				
MN0314R	Scrape	-22.81614	119.0914	28/04/2023		87				
MN2640R	Scrape	-22.81578	119.0789	28/04/2023		30				
MN0879R	Scrape	-22.81573	119.088	28/04/2023		30				
MN2652R	Scrape	-22.81549	119.0832	28/04/2023		39				
MN0340R	Scrape	-22.81515	119.0943	28/04/2023	75	87				
MN0878R	Scrape	-22.81492	119.0879	28/04/2023		30				
MN0889R	Scrape	-22.81438	119.0905	28/04/2023		51				
MN0875R	Scrape	-22.8142	119.0838	28/04/2023		42				
MN0872R	Scrape	-22.81402	119.0808	28/04/2023		60				
MN0299R	Scrape	-22.81373	119.0887	28/04/2023		69				
MN2650R	Scrape	-22.81211	119.0791	28/04/2023		51				
MN2627R	Scrape	-22.81157	119.0799	28/04/2023		66				
MN2397R	Scrape	-22.83639	119.1064	29/04/2023		60				
MN2612R	Scrape	-22.83427	119.1257	29/04/2023	89	174				
MN2647R	Scrape	-22.82828	119.1191	29/04/2023		30				
MN1751R	Scrape	-22.82572	119.106	29/04/2023		21				
MN0417R	Scrape	-22.82056	119.1046	29/04/2023		33				

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN1152R	Scrape	-22.82045	119.1109	29/04/2023		33				
MN1045R	Scrape	-22.81888	119.1036	29/04/2023		48				
MN0985R	Scrape	-22.81869	119.0996	29/04/2023		33				
MN0977R	Scrape	-22.81834	119.0992	29/04/2023		45				
MN1123R	Scrape	-22.81807	119.1083	29/04/2023	77	105				
MN1188R	Scrape	-22.81798	119.1138	29/04/2023	40.5	111				
MN1007R	Scrape	-22.8165	119.1011	29/04/2023		78				
MN0365R	Scrape	-22.8161	119.0972	29/04/2023		69				
MN1061R	Scrape	-22.81604	119.104	29/04/2023	93	99				
MN1089R	Scrape	-22.81597	119.1065	29/04/2023	87					
MN1128R	Scrape	-22.81595	119.1093	29/04/2023		63				
MN1185R	Scrape	-22.81588	119.1138	29/04/2023		51				
MN1174R	Scrape	-22.81539	119.1127	29/04/2023		33				
MN1097R	Scrape	-22.81493	119.107	29/04/2023		33				
MN0983R	Scrape	-22.81471	119.0996	29/04/2023	77	102				
MN0359R	Scrape	-22.81343	119.0958	29/04/2023		44				
MN0644R	Scrape	-22.83178	119.1251	30/04/2023		81				
MN1742R	Scrape	-22.82733	119.1284	30/04/2023		21				
MN0737R	Scrape	-22.82681	119.134	30/04/2023		25				
MN1490R	Scrape	-22.82677	119.1329	30/04/2023		27				
MN0731R	Scrape	-22.8264	119.1324	30/04/2023		63				
MN2655R	Scrape	-22.82604	119.1353	30/04/2023	32	42				
MN0739R	Scrape	-22.82582	119.1338	30/04/2023	27	99				
MN1479R	Scrape	-22.82559	119.1305	30/04/2023	57	75				
MN0732R	Scrape	-22.82548	119.1324	30/04/2023		153				
MN0703R	Scrape	-22.82449	119.1295	30/04/2023		8				
MN1373R	Scrape	-22.82385	119.1246	30/04/2023		27				
MN1402R	Scrape	-22.82341	119.1264	30/04/2023		37				
MN1495R	Scrape	-22.82296	119.1343	30/04/2023	40	147				
MN1476R	Scrape	-22.8224	119.1304	30/04/2023	48	135				
MN1369R	Scrape	-22.82205	119.1246	30/04/2023		39				
MN1445R	Scrape	-22.82196	119.129	30/04/2023		11				
MN0634R	Scrape	-22.82076	119.1235	30/04/2023	61	123				
MN1219R	Scrape	-22.82034	119.1168	30/04/2023		57				
MN0597R	Scrape	-22.82029	119.1207	30/04/2023		81				
MN1396R	Scrape	-22.8202	119.1261	30/04/2023	57	165				
MN1331R	Scrape	-22.81893	119.1226	30/04/2023		15				
MN1378RE	Scrape	-22.81839	119.1255	30/04/2023	51	90				
MN1444R	Scrape	-22.81838	119.1288	30/04/2023		39				
MN0032R	Scrape	-22.81812	119.1205	30/04/2023	75	192				
MN0713R	Scrape	-22.81779	119.1293	30/04/2023		33				
MN1341R	Scrape	-22.8176	119.123	30/04/2023		33				
MN0674R	Scrape	-22.81757	119.1264	30/04/2023		33				
EXR0406	Scrape	-22.8165	119.1185	30/04/2023	61	154				
MN1264R	Scrape	-22.81445	119.1187	30/04/2023		27				

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
HMN0042	Net	-22.83381	119.1368	1/05/2023	28.7	104		27.6	481	7.29
HMN0045	Net	-22.83103	119.1368	1/05/2023	8.7	50		25.3	600	7.17
MN1471R	Net	-22.82606	119.13	1/05/2023	59.2	117		27.1	1887	6.79
MN1491R	Net	-22.82589	119.1332	1/05/2023	25	39		26.3	874	6.85
MN1478R	Net	-22.82422	119.1306	1/05/2023	55.2	65		27.9	678	7.14
MN1489R	Net	-22.82419	119.1314	1/05/2023	52.7	64		27.3	813	7.18
MN1464R	Net	-22.82297	119.1299	1/05/2023	55.3	92		27.3	709	7.21
MN1673R	Trap 1	-22.83426	119.1203	26/06/2023		33	15			
MN1699R	Trap 1	-22.83422	119.1239	26/06/2023		90	20			
MN2589R	Trap 1	-22.83386	119.1219	26/06/2023	97	108	30			
MN2499R	Trap 1	-22.83366	119.1128	26/06/2023	123	168	50			
MN1662R	Trap 1	-22.83163	119.1179	26/06/2023	82	129	10			
MN1662R	Trap 2	-22.83163	119.1179	26/06/2023	82	129	45			
MN2586R	Trap 1	-22.83118	119.1217	26/06/2023		47	5			
MN2586R	Trap 2	-22.83118	119.1217	26/06/2023		47	25			
MN1635R	Trap 1	-22.83112	119.1137	26/06/2023	82	102	30			
MN2570R	Trap 1	-22.83028	119.1199	26/06/2023	69	96	10			
MN2532R	Trap 1	-22.82981	119.1157	26/06/2023		78	35			
MN2612R	Trap 1	-22.83427	119.1257	26/06/2023	89	174	15			
MN2612R	Trap 2	-22.83427	119.1257	26/06/2023	89	174	30			
MN2647R	Trap 1	-22.82828	119.1191	26/06/2023		30	10			
MN0644R	Trap 1	-22.83178	119.1251	26/06/2023		81	25			
MN2417R	Trap 1	-22.83142	119.1072	27/06/2023		78	15			
MN0810R	Trap 1	-22.83095	119.1102	27/06/2023		81	5			
MN0810R	Trap 2	-22.83095	119.1102	27/06/2023		81	25			
MN2388R	Trap 1	-22.83045	119.1055	27/06/2023		54	5			
MN2388R	Trap 2	-22.83045	119.1055	27/06/2023		54	40			
MN2376R	Trap 1	-22.82904	119.1042	27/06/2023		33	30			
MN1549R	Trap 1	-22.82897	119.1016	27/06/2023		39	35			
MN1547R	Trap 1	-22.82868	119.1001	27/06/2023		36	5			
MN1547R	Trap 2	-22.82868	119.1001	27/06/2023		36	30			
MN2382R	Trap 1	-22.82863	119.1056	27/06/2023		30	20			
MN2338R	Trap 1	-22.82779	119.0969	27/06/2023		42	25			
MN2313R	Trap 1	-22.82732	119.0942	27/06/2023		36	15			
MN2424R	Trap 1	-22.82713	119.1083	27/06/2023		30	20			
MN2307R	Trap 1	-22.82479	119.0936	27/06/2023		78	40			
MN1510R	Trap 1	-22.82681	119.0921	27/06/2023		50	20			
MN0345R	Trap 1	-22.82633	119.0959	27/06/2023		59	10			
MN2349R	Trap 1	-22.82417	119.0981	27/06/2023		15	10			
MN0310R	Trap 1	-22.82274	119.0915	27/06/2023		69	15			
MN0350R	Trap 1	-22.82256	119.0959	27/06/2023		33	10			
MN0350R	Trap 2	-22.82256	119.0959	27/06/2023		33	17			
MN0291R	Trap 1	-22.81946	119.0869	27/06/2023		45	15			
MN0323R	Trap 1	-22.8194	119.0924	27/06/2023		21	5			
MN0323R	Trap 2	-22.8194	119.0924	27/06/2023		21	10			

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN0296R	Trap 1	-22.81792	119.0884	27/06/2023		14	5			
MN0337R	Trap 1	-22.8175	119.0943	27/06/2023		21	10			
MN0313R	Trap 1	-22.81717	119.0915	27/06/2023		9	7			
MN0314R	Trap 1	-22.81614	119.0914	27/06/2023		87	30			
MN2640R	Trap 1	-22.81578	119.0789	27/06/2023		30	5			
MN2640R	Trap 2	-22.81578	119.0789	27/06/2023		30	15			
MN0879R	Trap 1	-22.81573	119.088	27/06/2023		30	10			
MN0879R	Trap 2	-22.81573	119.088	27/06/2023		30	20			
MN2652R	Trap 1	-22.81549	119.0832	27/06/2023		39	15			
MN0340R	Trap 1	-22.81515	119.0943	27/06/2023	75	87	10			
MN0878R	Trap 1	-22.81492	119.0879	27/06/2023		30	5			
MN0878R	Trap 2	-22.81492	119.0879	27/06/2023		30	15			
MN0889R	Trap 1	-22.81438	119.0905	27/06/2023		51	25			
MN0875R	Trap 1	-22.8142	119.0838	27/06/2023		42	20			
MN0872R	Trap 1	-22.81402	119.0808	27/06/2023		60	15			
MN0299R	Trap 1	-22.81373	119.0887	27/06/2023		69	20			
MN2650R	Trap 1	-22.81211	119.0791	27/06/2023		51	20			
MN2627R	Trap 1	-22.81157	119.0799	27/06/2023		66	15			
MN1751R	Trap 1	-22.82572	119.106	27/06/2023		21	15			
MN0417R	Trap 1	-22.82056	119.1046	27/06/2023		33	15			
MN1152R	Trap 1	-22.82045	119.1109	27/06/2023		33	15			
MN1045R	Trap 1	-22.81888	119.1036	27/06/2023		48	5			
MN0977R	Trap 1	-22.81834	119.0992	27/06/2023		45	10			
MN0977R	Trap 2	-22.81834	119.0992	27/06/2023		45	20			
MN1123R	Trap 1	-22.81807	119.1083	27/06/2023	77	105	15			
MN1188R	Trap 1	-22.81798	119.1138	27/06/2023	40.5	111	15			
MN1188R	Trap 2	-22.81798	119.1138	27/06/2023	40.5	111	25			
MN1007R	Trap 1	-22.8165	119.1011	27/06/2023		78	20			
MN0365R	Trap 1	-22.8161	119.0972	27/06/2023		69	15			
MN1061R	Trap 1	-22.81604	119.104	27/06/2023	93	99	15			
MN1061R	Trap 2	-22.81604	119.104	27/06/2023	93	99	30			
MN1128R	Trap 1	-22.81595	119.1093	27/06/2023		63	15			
MN1185R	Trap 1	-22.81588	119.1138	27/06/2023		51	20			
MN1174R	Trap 1	-22.81539	119.1127	27/06/2023		33	10			
MN1097R	Trap 1	-22.81493	119.107	27/06/2023		33	5			
MN1097R	Trap 2	-22.81493	119.107	27/06/2023		33	18			
MN0983R	Trap 1	-22.81471	119.0996	27/06/2023	77	102	35			
MN0359R	Trap 1	-22.81343	119.0958	27/06/2023		44	20			
MN1742R	Trap 1	-22.82733	119.1284	27/06/2023		21	15			
MN1479R	Trap 1	-22.82559	119.1305	27/06/2023	57	75	15			
MN0703R	Trap 1	-22.82449	119.1295	27/06/2023		8	7			
MN1476R	Trap 1	-22.8224	119.1304	27/06/2023	48	135	20			
MN1445R	Trap 1	-22.82196	119.129	27/06/2023		11	9			
MN0634R	Trap 1	-22.82076	119.1235	27/06/2023	61	123	20			
MN1219R	Trap 1	-22.82034	119.1168	27/06/2023		57	10			

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN1396R	Trap 1	-22.8202	119.1261	27/06/2023	57	165	10			
MN1396R	Trap 2	-22.8202	119.1261	27/06/2023	57	165	20			
MN1331R	Trap 1	-22.81893	119.1226	27/06/2023		15	10			
MN1378RE	Trap 1	-22.81839	119.1255	27/06/2023	51	90	15			
MN1444R	Trap 1	-22.81838	119.1288	27/06/2023		39	15			
MN0032R	Trap 1	-22.81812	119.1205	27/06/2023	75	192	20			
MN0713R	Trap 1	-22.81779	119.1293	27/06/2023		33	10			
MN1341R	Trap 1	-22.8176	119.123	27/06/2023		33	10			
MN1341R	Trap 2	-22.8176	119.123	27/06/2023		33	20			
MN0674R	Trap 1	-22.81757	119.1264	27/06/2023		33	5			
EXR0406	Trap 1	-22.8165	119.1185	27/06/2023	61	154	10			
EXR0406	Trap 2	-22.8165	119.1185	27/06/2023	61	154	20			
MN1264R	Trap 1	-22.81445	119.1187	27/06/2023		27	15			
MN1587R	Trap 1	-22.83583	119.1077	28/06/2023		48	10			
MN1603R	Trap 1	-22.8345	119.109	28/06/2023		54	35			
MN2397R	Trap 1	-22.83639	119.1064	28/06/2023		60	20			
MN1089R	Trap 1	-22.81597	119.1065	28/06/2023	87		20			
MN0737R	Trap 1	-22.82681	119.134	28/06/2023		25	10			
MN1490R	Trap 1	-22.82677	119.1329	28/06/2023		27	15			
MN0731R	Trap 1	-22.8264	119.1324	28/06/2023		63	20			
MN0739R	Trap 1	-22.82582	119.1338	28/06/2023	27	99	17			
MN0732R	Trap 1	-22.82548	119.1324	28/06/2023		153	15			
MN1495R	Trap 1	-22.82296	119.1343	28/06/2023	40	147	12			
MN1495R	Trap 2	-22.82296	119.1343	28/06/2023	40	147	24			
MN0756R	Net	-22.82728	119.1412	28/06/2023	36	57		29.4	570	7.25
MN0736R	Net	-22.82717	119.1339	28/06/2023	27	39		27.5	315	6.46
MN0745R	Net	-22.8269	119.1353	28/06/2023	31.1	45		28.4	464	7.01
MN0738R	Net	-22.82618	119.1339	28/06/2023	26.9	67		26.7	574	7.31
MN2625R	Net	-22.82579	119.1356	28/06/2023	41	59		26.1	644	7.19
MN0740R	Net	-22.82543	119.1339	28/06/2023	25.6	35		22.8	638	7.25
MN1495R	Net	-22.82296	119.1343	28/06/2023	42.6	105		23.9	633	7.24
MN1144R	Net	-22.81786	119.1103	28/06/2023	52.3	68		29.5	589	7.04
MN1160R	Net	-22.81773	119.1114	28/06/2023	49.2	97		29.2	694	7.19
MN0848DTM	Net	-22.81759	119.1125	28/06/2023	43.6	84		28.4	628	7.15
MN1373R	Trap 1	-22.82385	119.1246	29/06/2023		27	10			
MN1373R	Trap 2	-22.82385	119.1246	29/06/2023		27	20			
MN1402R	Trap 1	-22.82341	119.1264	29/06/2023		37	20			
MN1369R	Trap 1	-22.82205	119.1246	29/06/2023		39	15			
MN0597R	Trap 1	-22.82029	119.1207	29/06/2023		81	10			
HMN0043	Net	-22.82761	119.1386	29/06/2023	46.7	104		26.6	552	7.63
MN1472R	Net	-22.82647	119.13	29/06/2023	55.4	60		27.5	377	6.72
HMN0044	Net	-22.82546	119.1423	29/06/2023	61	110		24.9	562	7.21
MN0704R	Net	-22.82401	119.1295	29/06/2023	58.3	77		29.3	778	7.39
MN1436R	Net	-22.82241	119.1285	29/06/2023	58	74		29.6	585	7.26
MN1418R	Net	-22.82186	119.1274	29/06/2023	64	75		28.4	653	7.28

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN1368R	Net	-22.82118	119.1246	29/06/2023	57.6	68		30.4	707	7.24
MN1187R	Net	-22.81724	119.1137	29/06/2023	41.5	129		28.4	478	6.97
MN1178R	Net	-22.81678	119.1128	29/06/2023	47.1	68		28.1	536	6.98
HMN0037	Net	-22.82333	119.1304	30/06/2023	49.2	87		26	641	7.4
MN0683R	Net	-22.82294	119.1281	30/06/2023	60	76		25.7	807	7.31
MN1377R	Net	-22.81885	119.1255	30/06/2023	54.6	63		28.2	324	6.88
MN0752R	Scrape	-22.82684	119.1368	28/07/2023	36	57				
EXR0512	Scrape	-22.82217	119.134	28/07/2023		39				
MN1702R	Scrape	-22.83396	119.1269	29/07/2023		44				
MN1751R	Scrape	-22.82572	119.106	29/07/2023		17				
MN2288R	Scrape	-22.82135	119.092	29/07/2023		16				
MN2286R	Scrape	-22.82028	119.0919	29/07/2023		23				
MN1507R	Scrape	-22.81969	119.091	29/07/2023		42				
MN0295R	Scrape	-22.81844	119.0885	29/07/2023		11				
MN0292R	Scrape	-22.81722	119.087	29/07/2023		56				
MN0913R	Scrape	-22.81714	119.0918	29/07/2023		41				
MN0935R	Scrape	-22.81659	119.0948	29/07/2023		44				
MN0314R	Scrape	-22.81614	119.0914	29/07/2023		68				
MN0365R	Scrape	-22.8161	119.0972	29/07/2023		57				
MN0945R	Scrape	-22.81528	119.0965	29/07/2023	61	87				
MN0878R	Scrape	-22.81492	119.0879	29/07/2023		24				
MN0287R	Scrape	-22.81489	119.081	29/07/2023		34				
MN0905R	Scrape	-22.81482	119.0912	29/07/2023		29				
MN0343R	Scrape	-22.81296	119.094	29/07/2023		6				
MN0285R	Scrape	-22.81278	119.0782	29/07/2023		21				
MN0286R	Scrape	-22.81004	119.0796	29/07/2023		24		27.372		
MN2379R	Scrape	-22.8305	119.1047	30/07/2023		48				
MN2430R	Scrape	-22.82975	119.1084	30/07/2023		37				
MN0391R	Scrape	-22.82941	119.1017	30/07/2023		39				
MN2364R	Scrape	-22.82891	119.1002	30/07/2023		33				
MN2382R	Scrape	-22.82863	119.1056	30/07/2023		27				
MN2346R	Scrape	-22.82853	119.0979	30/07/2023		39				
MN1550R	Scrape	-22.82811	119.1018	30/07/2023		27				
MN2411R	Scrape	-22.82776	119.1071	30/07/2023		23				
MN0735R	Scrape	-22.82763	119.134	30/07/2023		23				
MN0371R	Scrape	-22.82739	119.0991	30/07/2023		22				
MN2316R	Scrape	-22.82738	119.0948	30/07/2023		24				
MN0345R	Scrape	-22.82633	119.0959	30/07/2023		34				
MN0514R	Scrape	-22.82606	119.1136	30/07/2023		14				
MN2307R	Scrape	-22.82479	119.0936	30/07/2023		63				
MN0862DTM	Scrape	-22.82478	119.0916	30/07/2023		63				
MN1544R	Scrape	-22.82443	119.0998	30/07/2023		28				
MN2359R	Scrape	-22.82358	119.0993	30/07/2023		19				
MN2277R	Scrape	-22.82333	119.0904	30/07/2023		67				
MN2323R	Scrape	-22.82311	119.0953	30/07/2023		24				

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN2314R	Scrape	-22.82233	119.0942	30/07/2023		12				
MN1222R	Scrape	-22.82165	119.1169	31/07/2023		22				
MN1158R	Scrape	-22.82127	119.1113	31/07/2023		21				
MN1172R	Scrape	-22.8204	119.1124	31/07/2023		34				
MN1058R	Scrape	-22.81997	119.104	31/07/2023		27				
MN1100R	Scrape	-22.81873	119.107	31/07/2023		47				
MN0985R	Scrape	-22.81869	119.0996	31/07/2023		27				
MN0977R	Scrape	-22.81834	119.0992	31/07/2023		36				
MN1059R	Scrape	-22.81832	119.1042	31/07/2023		59				
MN1204R	Scrape	-22.81801	119.1158	31/07/2023	57	159				
MN1179R	Scrape	-22.8177	119.1128	31/07/2023	35	108				
MN0004R	Scrape	-22.81746	119.109	31/07/2023	65	117				
MN1010R	Scrape	-22.81736	119.1011	31/07/2023		56				
MN1291R	Scrape	-22.8167	119.1201	31/07/2023		32		27.372	648	7.138
MN0857DTM	Scrape	-22.816	119.106	31/07/2023		28				
MN1238R	Scrape	-22.81559	119.1175	31/07/2023		34				
MN0986R	Scrape	-22.81543	119.0996	31/07/2023	59	84				
MN1191R	Scrape	-22.81538	119.1143	31/07/2023		11				
MN0471R	Scrape	-22.81497	119.1088	31/07/2023		31				
MN1004R	Scrape	-22.81425	119.1011	31/07/2023		47				
MN2397R	Scrape	-22.83639	119.1064	1/08/2023		48				
MN2392R	Scrape	-22.83603	119.1058	1/08/2023		16				
MN2473R	Scrape	-22.83524	119.1109	1/08/2023		28				
MN0445RE	Scrape	-22.83508	119.1074	1/08/2023		86				
MN1603R	Scrape	-22.8345	119.109	1/08/2023		42				
MN1666R	Scrape	-22.83348	119.1184	1/08/2023		40				
MN0866DTM	Scrape	-22.83333	119.1137	1/08/2023		18				
MN1705R	Scrape	-22.83312	119.1052	1/08/2023		53				
MN2607R	Scrape	-22.83229	119.1242	1/08/2023		47				
MN0834R	Scrape	-22.83095	119.1112	1/08/2023		61				
MN2534R	Scrape	-22.83089	119.1157	1/08/2023	72	120				
MN1671R	Scrape	-22.83071	119.1194	1/08/2023		46				
MN0541R	Scrape	-22.82943	119.1164	1/08/2023		56				
MN2576R	Scrape	-22.82904	119.1204	1/08/2023		34				
MN1668R	Scrape	-22.82892	119.1193	1/08/2023		25				
MN0511R	Scrape	-22.82879	119.1136	1/08/2023		16				
MN0478R	Scrape	-22.82864	119.1107	1/08/2023		17				
MN2463R	Scrape	-22.82781	119.1101	1/08/2023		29				
MN0570R	Scrape	-22.83504	119.1197	2/08/2023		41				
MN0603R	Scrape	-22.83469	119.1223	2/08/2023		35				
MN2613R	Scrape	-22.83238	119.1259	2/08/2023		31				
MN0607R	Scrape	-22.83083	119.1221	2/08/2023	59	99				
MN2580R	Scrape	-22.82844	119.1213	2/08/2023		41				
MN1472R	Scrape	-22.82647	119.13	2/08/2023	43	69				
MN0682R	Scrape	-22.82344	119.1281	2/08/2023		52				

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN1327R	Scrape	-22.82208	119.1216	2/08/2023		26				
MN1369R	Scrape	-22.82205	119.1246	2/08/2023		30				
MN0708R	Scrape	-22.82182	119.1294	2/08/2023	42	111				
MN0596R	Scrape	-22.82122	119.1206	2/08/2023	62	129				
MN0711R	Scrape	-22.81904	119.1294	2/08/2023		37				
EXR0765	Scrape	-22.81876	119.123	2/08/2023	52	207				
MN1284R	Scrape	-22.81844	119.1197	2/08/2023	67	183				
MN1392RE	Scrape	-22.81842	119.1259	2/08/2023	46	90				
MN1434R	Scrape	-22.81836	119.1284	2/08/2023		28				
MN0675R	Scrape	-22.81668	119.1264	2/08/2023		25				
MN1072R	Scrape	-22.81492	119.1055	31/08/2023	0	34				
MN0752R	Trap 1	-22.82684	119.1368	16/10/2023	36	57	20			
EXR0512	Trap 1	-22.82217	119.134	16/10/2023		39	10			
EXR0512	Trap 2	-22.82217	119.134	16/10/2023		39	37			
MN1702R	Trap 1	-22.83396	119.1269	16/10/2023		44	40			
MN0735R	Trap 1	-22.82763	119.134	16/10/2023		23	10			
MN0735R	Trap 2	-22.82763	119.134	16/10/2023		23	20			
MN1666R	Trap 1	-22.83348	119.1184	16/10/2023		40	35			
MN2607R	Trap 1	-22.83229	119.1242	16/10/2023		47	45			
MN1671R	Trap 1	-22.83071	119.1194	16/10/2023		46	25			
MN0541R	Trap 1	-22.82943	119.1164	16/10/2023		56	20			
MN0541R	Trap 2	-22.82943	119.1164	16/10/2023		56	50			
MN0603R	Trap 1	-22.83469	119.1223	16/10/2023		35	33			
MN2613R	Trap 1	-22.83238	119.1259	16/10/2023		31	25			
MN0607R	Trap 1	-22.83083	119.1221	16/10/2023	59	99	25			
MN0607R	Trap 2	-22.83083	119.1221	16/10/2023	59	99	55			
MN2580R	Trap 1	-22.82844	119.1213	16/10/2023		41	40			
MN1751R	Trap 1	-22.82572	119.106	17/10/2023		17	5			
MN1751R	Trap 2	-22.82572	119.106	17/10/2023		17	15			
MN2288R	Trap 1	-22.82135	119.092	17/10/2023		16	15			
MN2286R	Trap 1	-22.82028	119.0919	17/10/2023		23	20			
MN1507R	Trap 1	-22.81969	119.091	17/10/2023		42	30			
MN0295R	Trap 1	-22.81844	119.0885	17/10/2023		11	10			
MN0292R	Trap 1	-22.81722	119.087	17/10/2023		56	50			
MN0913R	Trap 1	-22.81714	119.0918	17/10/2023		41	35			
MN0314R	Trap 1	-22.81614	119.0914	17/10/2023		68	60			
MN0365R	Trap 1	-22.8161	119.0972	17/10/2023		57	40			
MN0945R	Trap 1	-22.81528	119.0965	17/10/2023	61	87	15			
MN0945R	Trap 2	-22.81528	119.0965	17/10/2023	61	87	60			
MN0878R	Trap 1	-22.81492	119.0879	17/10/2023		24	22			
MN0287R	Trap 1	-22.81489	119.081	17/10/2023		34	32			
MN0905R	Trap 1	-22.81482	119.0912	17/10/2023		29	27			
MN0343R	Trap 1	-22.81296	119.094	17/10/2023		6	5			
MN0285R	Trap 1	-22.81278	119.0782	17/10/2023		21	10			
MN0285R	Trap 2	-22.81278	119.0782	17/10/2023		21	20			

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN0286R	Trap 1	-22.81004	119.0796	17/10/2023		24	22			
MN2379R	Trap 1	-22.8305	119.1047	17/10/2023		48	45			
MN2430R	Trap 1	-22.82975	119.1084	17/10/2023		37	35			
MN0391R	Trap 1	-22.82941	119.1017	17/10/2023		39	20			
MN0391R	Trap 2	-22.82941	119.1017	17/10/2023		39	35			
MN2364R	Trap 1	-22.82891	119.1002	17/10/2023		33	30			
MN2382R	Trap 1	-22.82863	119.1056	17/10/2023		27	10			
MN2382R	Trap 2	-22.82863	119.1056	17/10/2023		27	25			
MN2346R	Trap 1	-22.82853	119.0979	17/10/2023		39	35			
MN1550R	Trap 1	-22.82811	119.1018	17/10/2023		27	25			
MN2411R	Trap 1	-22.82776	119.1071	17/10/2023		23	20			
MN0371R	Trap 1	-22.82739	119.0991	17/10/2023		22	20			
MN2316R	Trap 1	-22.82738	119.0948	17/10/2023		24	10			
MN2316R	Trap 2	-22.82738	119.0948	17/10/2023		24	20			
MN0345R	Trap 1	-22.82633	119.0959	17/10/2023		34	15			
MN0345R	Trap 2	-22.82633	119.0959	17/10/2023		34	30			
MN0514R	Trap 1	-22.82606	119.1136	17/10/2023		14	10			
MN2307R	Trap 1	-22.82479	119.0936	17/10/2023		63	60			
MN0862DTM	Trap 1	-22.82478	119.0916	17/10/2023		63	60			
MN1544R	Trap 1	-22.82443	119.0998	17/10/2023		28	25			
MN2359R	Trap 1	-22.82358	119.0993	17/10/2023		19	15			
MN2277R	Trap 1	-22.82333	119.0904	17/10/2023		67	30			
MN2277R	Trap 2	-22.82333	119.0904	17/10/2023		67	60			
MN2323R	Trap 1	-22.82311	119.0953	17/10/2023		24	20			
MN2314R	Trap 1	-22.82233	119.0942	17/10/2023		12	10			
MN1222R	Trap 1	-22.82165	119.1169	17/10/2023		22	20			
MN1158R	Trap 1	-22.82127	119.1113	17/10/2023		21	5			
MN1158R	Trap 2	-22.82127	119.1113	17/10/2023		21	20			
MN1172R	Trap 1	-22.8204	119.1124	17/10/2023		34	32			
MN1058R	Trap 1	-22.81997	119.104	17/10/2023		27	8			
MN1058R	Trap 2	-22.81997	119.104	17/10/2023		27	20			
MN1100R	Trap 1	-22.81873	119.107	17/10/2023		47	45			
MN0985R	Trap 1	-22.81869	119.0996	17/10/2023		27	25			
MN0977R	Trap 1	-22.81834	119.0992	17/10/2023		36	35			
MN1059R	Trap 1	-22.81832	119.1042	17/10/2023		59	50			
MN1204R	Trap 1	-22.81801	119.1158	17/10/2023	57	159	15			
MN1204R	Trap 2	-22.81801	119.1158	17/10/2023	57	159	40			
MN1179R	Trap 1	-22.8177	119.1128	17/10/2023	35	108	33			
MN0004R	Trap 1	-22.81746	119.109	17/10/2023	65	117	50			
MN1010R	Trap 1	-22.81736	119.1011	17/10/2023		56	50			
MN0857DTM	Trap 1	-22.816	119.106	17/10/2023		28	25			
MN0986R	Trap 1	-22.81543	119.0996	17/10/2023	59	84	5			
MN0986R	Trap 2	-22.81543	119.0996	17/10/2023	59	84	55			
MN1191R	Trap 1	-22.81538	119.1143	17/10/2023		11	10			
MN0471R	Trap 1	-22.81497	119.1088	17/10/2023		31	30			

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN1072R	Trap 1	-22.81492	119.1055	17/10/2023	0	34	30			
MN1004R	Trap 1	-22.81425	119.1011	17/10/2023		47	40			
MN2397R	Trap 1	-22.83639	119.1064	17/10/2023		48	40			
MN2392R	Trap 1	-22.83603	119.1058	17/10/2023		16	15			
MN2473R	Trap 1	-22.83524	119.1109	17/10/2023		28	25			
MN0445RE	Trap 1	-22.83508	119.1074	17/10/2023		86	40			
MN0445RE	Trap 2	-22.83508	119.1074	17/10/2023		86	80			
MN1603R	Trap 1	-22.8345	119.109	17/10/2023		42	35			
MN0866DTM	Trap 1	-22.83333	119.1137	17/10/2023		18	15			
MN1705R	Trap 1	-22.83312	119.1052	17/10/2023		53	50			
MN0834R	Trap 1	-22.83095	119.1112	17/10/2023		61	25			
MN2534R	Trap 1	-22.83089	119.1157	17/10/2023	72	120	60			
MN1668R	Trap 1	-22.82892	119.1193	17/10/2023		25	20			
MN0511R	Trap 1	-22.82879	119.1136	17/10/2023		16	10			
MN0478R	Trap 1	-22.82864	119.1107	17/10/2023		17	15			
MN2463R	Trap 1	-22.82781	119.1101	17/10/2023		29	25			
MN1369R	Trap 1	-22.82205	119.1246	17/10/2023		30	28			
MN1479R	Net	-22.82559	119.1305	18/10/2023	60.2	66		28	543	6.17
MN1489R	Net	-22.82419	119.1314	18/10/2023	53	58		30.6	682	7.18
MN1465R	Net	-22.82375	119.13	18/10/2023	46	72		28.5	662	7.18
HMN0037	Net	-22.82333	119.1304	18/10/2023	49.2	87		29.4	638	7.23
MN1449R	Net	-22.82333	119.1289	18/10/2023	60.6	71		31.1	705	7.09
MN1486R	Net	-22.82309	119.1314	18/10/2023	49	117		29.9	178	6.24
MN1437R	Net	-22.82298	119.1285	18/10/2023	61.2	81		30.1	678	7.05
MN1729DTM	Net	-22.82281	119.1295	18/10/2023	55.4	57		30.8	758	7.07
MN1428R	Net	-22.82156	119.1277	18/10/2023	59.4	81		28.9	629	7.02
MN1414R	Net	-22.82112	119.1269	18/10/2023	61.7	99		30.2	633	7.02
MN1291R	Trap 1	-22.8167	119.1201	18/10/2023		32	32	27.896		
MN1238R	Trap 1	-22.81559	119.1175	18/10/2023		34	5			
MN1238R	Trap 2	-22.81559	119.1175	18/10/2023		34	30			
MN1472R	Trap 1	-22.82647	119.13	18/10/2023	43	69	5			
MN1472R	Trap 2	-22.82647	119.13	18/10/2023	43	69	40			
MN0682R	Trap 1	-22.82344	119.1281	18/10/2023		52	50			
MN1327R	Trap 1	-22.82208	119.1216	18/10/2023		26	5			
MN1327R	Trap 2	-22.82208	119.1216	18/10/2023		26	25			
MN0708R	Trap 1	-22.82182	119.1294	18/10/2023	42	111	15			
MN0708R	Trap 2	-22.82182	119.1294	18/10/2023	42	111	40			
MN0596R	Trap 1	-22.82122	119.1206	18/10/2023	62	129	50			
MN0711R	Trap 1	-22.81904	119.1294	18/10/2023		37	10			
MN0711R	Trap 2	-22.81904	119.1294	18/10/2023		37	35			
EXR0765	Trap 1	-22.81876	119.123	18/10/2023	52	207	15			
EXR0765	Trap 2	-22.81876	119.123	18/10/2023	52	207	50			
MN1284R	Trap 1	-22.81844	119.1197	18/10/2023	67	183	65			
MN1392RE	Trap 1	-22.81842	119.1259	18/10/2023	46	90	40			
MN1434R	Trap 1	-22.81836	119.1284	18/10/2023		28	25			

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN0675R	Trap 1	-22.81668	119.1264	18/10/2023		25	23			
MN1368R	Net	-22.82118	119.1246	19/10/2023	57.8	68		31.5	711	6.96
MN1393R	Net	-22.81929	119.126	19/10/2023	56.8	75		32	719	6.94
MN1404RE	Net	-22.81886	119.1265	19/10/2023	55.7	60		32.6	816	6.69
MN1421R	Net	-22.81881	119.1275	19/10/2023	59.1	63		30.8	713	6.56
MN1231R	Net	-22.81839	119.1172	19/10/2023	58.2	70		29.7	652	7.01
MN1378RE	Net	-22.81839	119.1255	19/10/2023	55.7	90		30.4	653	6.88
MN1409R	Net	-22.81838	119.127	19/10/2023	56.6	60		31.4	920	6.68
MN1162R	Net	-22.81814	119.1114	19/10/2023	58.9	99		29.4	441	6.6
MN1137R	Net	-22.81812	119.1098	19/10/2023	63	73		28.8	664	6.91
MN1195R	Net	-22.81807	119.1152	19/10/2023	46.3	107		30.8	888	6.17
MN1188R	Net	-22.81798	119.1138	19/10/2023	43.5	54		29.9	648	6.92
MN1178R	Net	-22.81678	119.1128	19/10/2023	47.4	68		29.3	552	6.65
MN0738R	Net	-22.82618	119.1339	20/10/2023	26.2	67		27.5	575	6.97
MN1491R	Net	-22.82589	119.1332	20/10/2023	27.5	37		28.7	809	6.83
MN2625R	Net	-22.82579	119.1356	20/10/2023	42.1	59		27.8	653	7.1
HMN0044	Net	-22.82546	119.1423	20/10/2023	61.2	110		28.3	556	7.01
MN1698R	Scrape	-22.83382	119.1238	21/11/2023		84				
MN2614R	Scrape	-22.83342	119.1259	21/11/2023		48				
MN2606R	Scrape	-22.83101	119.1242	21/11/2023		60				
MN1690R	Scrape	-22.83021	119.1232	21/11/2023		60				
MN1604R	Scrape	-22.8349	119.1092	22/11/2023		42				
MN1627R	Scrape	-22.83489	119.1121	22/11/2023		133				
MN2416R	Scrape	-22.83481	119.1071	22/11/2023		60				
MN2422R	Scrape	-22.83406	119.1082	22/11/2023		66				
MN2564R	Scrape	-22.83375	119.1189	22/11/2023		30				
MN0536R	Scrape	-22.83368	119.1166	22/11/2023		57				
MN2390R	Scrape	-22.8327	119.1055	22/11/2023		42				
MN0573R	Scrape	-22.83208	119.1194	22/11/2023	82					
MN2536R	Scrape	-22.83177	119.1157	22/11/2023	99					
MN2596R	Scrape	-22.8316	119.1228	22/11/2023		60				
MN2450R	Scrape	-22.83125	119.1097	22/11/2023		101				
MN2505R	Scrape	-22.83079	119.113	22/11/2023	93					
MN2368R	Scrape	-22.82971	119.1031	22/11/2023		10				
MN2481R	Scrape	-22.82943	119.1113	22/11/2023		48				
MN2459R	Scrape	-22.82934	119.1097	22/11/2023		31				
MN2385R	Scrape	-22.82917	119.1055	22/11/2023		30				
MN2375R	Scrape	-22.8287	119.1044	22/11/2023		20				
MN1608R	Scrape	-22.82834	119.1077	22/11/2023		36				
MN2520R	Scrape	-22.82764	119.1145	22/11/2023		22				
MN2412R	Scrape	-22.82715	119.1071	22/11/2023		30				
MN2519R	Scrape	-22.82711	119.1145	22/11/2023		30				
MN0051R	Scrape	-22.82953	119.1204	23/11/2023		9				
MN1650R	Scrape	-22.829	119.1164	23/11/2023		57				
MN2565R	Scrape	-22.82887	119.1198	23/11/2023		72				

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN1546R	Scrape	-22.82832	119.1003	23/11/2023		45				
MN2643R	Scrape	-22.82822	119.1179	23/11/2023		30				
MN2345R	Scrape	-22.82783	119.0979	23/11/2023		30				
MN0480R	Scrape	-22.82679	119.1107	23/11/2023		21				
MN2312R	Scrape	-22.82646	119.0939	23/11/2023		36				
MN0394R	Scrape	-22.8263	119.1016	23/11/2023		51				
MN2337R	Scrape	-22.82603	119.097	23/11/2023		42				
MN1748R	Scrape	-22.82449	119.1016	23/11/2023		33				
MN2358R	Scrape	-22.82406	119.0993	23/11/2023		30				
MN2278R	Scrape	-22.82382	119.0905	23/11/2023		96				
MN1525R	Scrape	-22.82291	119.0959	23/11/2023		36				
MN2324R	Scrape	-22.82262	119.0952	23/11/2023		30				
MN2289R	Scrape	-22.82085	119.0921	23/11/2023		30				
MN0892R	Scrape	-22.818	119.0904	23/11/2023		33				
MN0336R	Scrape	-22.81797	119.0942	23/11/2023		21				
MN0927R	Scrape	-22.8173	119.0933	23/11/2023		39				
MN0885R	Scrape	-22.81573	119.0898	23/11/2023		33				
MN0890R	Scrape	-22.81527	119.0905	23/11/2023		33				
MN0918R	Scrape	-22.8149	119.0923	23/11/2023		63				
MN0680R	Scrape	-22.82431	119.1281	24/11/2023		12				
MN1464R	Scrape	-22.82297	119.1299	24/11/2023	55					
MN1463R	Scrape	-22.82246	119.1299	24/11/2023		6				
MN1317R	Scrape	-22.82211	119.1211	24/11/2023		33				
MN1254R	Scrape	-22.82129	119.1183	24/11/2023		39				
MN1157R	Scrape	-22.82089	119.1113	24/11/2023		39				
MN1208R	Scrape	-22.82085	119.1158	24/11/2023		33				
MN1131R	Scrape	-22.81985	119.1095	24/11/2023		33				
MN1056R	Scrape	-22.81959	119.1041	24/11/2023		33				
MN1092R	Scrape	-22.81957	119.1065	24/11/2023		33				
MN1002R	Scrape	-22.8192	119.1007	24/11/2023		30				
MN1182R	Scrape	-22.81852	119.1128	24/11/2023	61					
MN0361R	Scrape	-22.81792	119.0972	24/11/2023		39				
MN1194R	Scrape	-22.81779	119.1152	24/11/2023	46					
MN1021R	Scrape	-22.817	119.1021	24/11/2023		14				
MN1108R	Scrape	-22.81687	119.1079	24/11/2023		104				
MN1177R	Scrape	-22.81628	119.1128	24/11/2023		15				
MN1146R	Scrape	-22.81595	119.1108	24/11/2023		57				
MN1125R	Scrape	-22.81549	119.1092	24/11/2023		39				
MN0876R	Scrape	-22.81531	119.0874	24/11/2023		11				
MN1105R	Scrape	-22.815	119.108	24/11/2023		21				
MN1051R	Scrape	-22.81492	119.104	24/11/2023		39				
MN0993R	Scrape	-22.81471	119.1007	24/11/2023	85					
MN0880R	Scrape	-22.81443	119.0884	24/11/2023		42				
MN0954R	Scrape	-22.81427	119.0972	24/11/2023	78					
MN0305RE	Scrape	-22.81365	119.0898	24/11/2023	63					

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN0332R	Scrape	-22.81347	119.0928	24/11/2023		17				
MN1448R	Scrape	-22.8238	119.1289	25/11/2023		57				
MN1466R	Scrape	-22.82333	119.1299	25/11/2023	52	91				
MN1483R	Scrape	-22.82292	119.1304	25/11/2023		6				
MN1371R	Scrape	-22.82254	119.1245	25/11/2023		33				
MN1725DTM	Scrape	-22.82245	119.1308	25/11/2023	56	122				
MN0726R	Scrape	-22.82212	119.1308	25/11/2023	43	135				
MN1462R	Scrape	-22.82157	119.13	25/11/2023	52	153				
MN1460R	Scrape	-22.821	119.1299	25/11/2023		40				
MN1413R	Scrape	-22.82066	119.127	25/11/2023	62	135				
MN1312R	Scrape	-22.81987	119.1211	25/11/2023	78	93				
MN1363R	Scrape	-22.8189	119.1245	25/11/2023		42				
MN1407R	Scrape	-22.81795	119.127	25/11/2023		33				
MN1318R	Scrape	-22.81758	119.1217	25/11/2023		39				
MN1302R	Scrape	-22.8167	119.1206	25/11/2023		27				
MN1275R	Scrape	-22.81629	119.1197	25/11/2023		33				
MN1215R	Scrape	-22.81582	119.1166	25/11/2023		10				
MN1240R	Scrape	-22.8158	119.1183	25/11/2023		39				
MN1261R	Scrape	-22.8158	119.1187	25/11/2023		39				
MN1276R	Scrape	-22.81578	119.1197	25/11/2023		33				
MN1262R	Scrape	-22.81539	119.1187	25/11/2023		21				
MN1241R	Scrape	-22.81538	119.1182	25/11/2023		33				
MN1457R	Net	-22.82247	119.1294	26/11/2023	53	96		31.5	677	6.72
MN1476R	Net	-22.8224	119.1304	26/11/2023	51.4	120		30.5	673	6.8
MN1435R	Net	-22.82204	119.1285	26/11/2023	56.3	77		30.2	477	6.72
MN1381R	Net	-22.82071	119.1255	26/11/2023	63	72				
MN1433RE	Net	-22.81886	119.1284	26/11/2023	59.8	61				
MN1392RE	Net	-22.81842	119.1259	26/11/2023	55.3	90		31.3	652	6.65
MN1422R	Net	-22.81837	119.1275	26/11/2023	56	69				
MN1211R	Net	-22.81822	119.1162	26/11/2023	55.1	84		30.3	643	6.71
MN1167R	Net	-22.81707	119.1124	26/11/2023	44.5	57				
MN1698R	Trap 1	-22.83382	119.1238	30/01/2024		84	40			
MN2614R	Trap 1	-22.83342	119.1259	30/01/2024		48	20			
MN2606R	Trap 1	-22.83101	119.1242	30/01/2024		60	10			
MN2606R	Trap 2	-22.83101	119.1242	30/01/2024		60	25			
MN1690R	Trap 1	-22.83021	119.1232	30/01/2024		60	30			
MN2564R	Trap 1	-22.83375	119.1189	30/01/2024		30	15			
MN0536R	Trap 1	-22.83368	119.1166	30/01/2024		57	20			
MN0573R	Trap 1	-22.83208	119.1194	30/01/2024	82		40			
MN2536R	Trap 1	-22.83177	119.1157	30/01/2024	99		10			
MN2536R	Trap 2	-22.83177	119.1157	30/01/2024	99		40			
MN2596R	Trap 1	-22.8316	119.1228	30/01/2024		60	25			
MN2450R	Trap 1	-22.83125	119.1097	30/01/2024		101	14			
MN2450R	Trap 2	-22.83125	119.1097	30/01/2024		101	35			
MN2505R	Trap 1	-22.83079	119.113	30/01/2024	93		30			

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN2368R	Trap 1	-22.82971	119.1031	30/01/2024		10	10			
MN2481R	Trap 1	-22.82943	119.1113	30/01/2024		48	5			
MN2459R	Trap 1	-22.82934	119.1097	30/01/2024		31	15			
MN2385R	Trap 1	-22.82917	119.1055	30/01/2024		30	6			
MN2385R	Trap 2	-22.82917	119.1055	30/01/2024		30	12			
MN2375R	Trap 1	-22.8287	119.1044	30/01/2024		20	18			
MN1608R	Trap 1	-22.82834	119.1077	30/01/2024		36	10			
MN2520R	Trap 1	-22.82764	119.1145	30/01/2024		22	5			
MN2520R	Trap 2	-22.82764	119.1145	30/01/2024		22	12			
MN2412R	Trap 1	-22.82715	119.1071	30/01/2024		30	20			
MN2519R	Trap 1	-22.82711	119.1145	30/01/2024		30	9			
MN0051R	Trap 1	-22.82953	119.1204	30/01/2024		9	9			
MN1650R	Trap 1	-22.829	119.1164	30/01/2024		57	40			
MN2565R	Trap 1	-22.82887	119.1198	30/01/2024		72	50			
MN1546R	Trap 1	-22.82832	119.1003	30/01/2024		45	40			
MN2643R	Trap 1	-22.82822	119.1179	30/01/2024		30	5			
MN2643R	Trap 2	-22.82822	119.1179	30/01/2024		30	25			
MN2345R	Trap 1	-22.82783	119.0979	30/01/2024		30	10			
MN2345R	Trap 2	-22.82783	119.0979	30/01/2024		30	20			
MN0480R	Trap 1	-22.82679	119.1107	30/01/2024		21	15			
MN2312R	Trap 1	-22.82646	119.0939	30/01/2024		36	30			
MN0394R	Trap 1	-22.8263	119.1016	30/01/2024		51	45			
MN2337R	Trap 1	-22.82603	119.097	30/01/2024		42	40			
MN1748R	Trap 1	-22.82449	119.1016	30/01/2024		33	30			
MN2358R	Trap 1	-22.82406	119.0993	30/01/2024		30	10			
MN2278R	Trap 1	-22.82382	119.0905	30/01/2024		96	20			
MN2278R	Trap 2	-22.82382	119.0905	30/01/2024		96	50			
MN1525R	Trap 1	-22.82291	119.0959	30/01/2024		36	30			
MN2324R	Trap 1	-22.82262	119.0952	30/01/2024		30	25			
MN2289R	Trap 1	-22.82085	119.0921	30/01/2024		30	25			
MN0892R	Trap 1	-22.818	119.0904	30/01/2024		33	10			
MN0892R	Trap 2	-22.818	119.0904	30/01/2024		33	30			
MN0336R	Trap 1	-22.81797	119.0942	30/01/2024		21	17			
MN0927R	Trap 1	-22.8173	119.0933	30/01/2024		39	35			
MN0885R	Trap 1	-22.81573	119.0898	30/01/2024		33	15			
MN0890R	Trap 1	-22.81527	119.0905	30/01/2024		33	30			
MN0918R	Trap 1	-22.8149	119.0923	30/01/2024		63	55			
MN1157R	Trap 1	-22.82089	119.1113	30/01/2024		39	15			
MN1131R	Trap 1	-22.81985	119.1095	30/01/2024		33	20			
MN1056R	Trap 1	-22.81959	119.1041	30/01/2024		33	15			
MN1092R	Trap 1	-22.81957	119.1065	30/01/2024		33	25			
MN1002R	Trap 1	-22.8192	119.1007	30/01/2024		30	8			
MN1002R	Trap 2	-22.8192	119.1007	30/01/2024		30	28			
MN1182R	Trap 1	-22.81852	119.1128	30/01/2024	61		50			
MN0361R	Trap 1	-22.81792	119.0972	30/01/2024		39	20			

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN1194R	Trap 1	-22.81779	119.1152	30/01/2024	46		8			
MN1194R	Trap 2	-22.81779	119.1152	30/01/2024	46		25			
MN1021R	Trap 1	-22.817	119.1021	30/01/2024		14	12			
MN1108R	Trap 1	-22.81687	119.1079	30/01/2024		104	50			
MN1177R	Trap 1	-22.81628	119.1128	30/01/2024		15	4			
MN1177R	Trap 2	-22.81628	119.1128	30/01/2024		15	12			
MN1146R	Trap 1	-22.81595	119.1108	30/01/2024		57	10			
MN1125R	Trap 1	-22.81549	119.1092	30/01/2024		39	35			
MN0876R	Trap 1	-22.81531	119.0874	30/01/2024		11	9			
MN1105R	Trap 1	-22.815	119.108	30/01/2024		21	5			
MN1105R	Trap 2	-22.815	119.108	30/01/2024		21	15			
MN1051R	Trap 1	-22.81492	119.104	30/01/2024		39	25			
MN0993R	Trap 1	-22.81471	119.1007	30/01/2024	85		20			
MN0993R	Trap 2	-22.81471	119.1007	30/01/2024	85		45			
MN0880R	Trap 1	-22.81443	119.0884	30/01/2024		42	5			
MN0954R	Trap 1	-22.81427	119.0972	30/01/2024	78		10			
MN0954R	Trap 2	-22.81427	119.0972	30/01/2024	78		40			
MN0305RE	Trap 1	-22.81365	119.0898	30/01/2024	63		30			
MN0332R	Trap 1	-22.81347	119.0928	30/01/2024		17	15			
MN1604R	Trap 1	-22.8349	119.1092	31/01/2024		42	8			
MN1604R	Trap 2	-22.8349	119.1092	31/01/2024		42	30			
MN1627R	Trap 1	-22.83489	119.1121	31/01/2024		133	6			
MN2416R	Trap 1	-22.83481	119.1071	31/01/2024		60	15			
MN2422R	Trap 1	-22.83406	119.1082	31/01/2024		66	20			
MN2390R	Trap 1	-22.8327	119.1055	31/01/2024		42	30			
MN1464R	Trap 1	-22.82297	119.1299	31/01/2024	55		10			
MN1464R	Trap 2	-22.82297	119.1299	31/01/2024	55		20			
MN1463R	Trap 1	-22.82246	119.1299	31/01/2024		6	5			
MN1317R	Trap 1	-22.82211	119.1211	31/01/2024		33	5			
MN1254R	Trap 1	-22.82129	119.1183	31/01/2024		39	8			
MN1208R	Trap 1	-22.82085	119.1158	31/01/2024		33	5			
MN1448R	Trap 1	-22.8238	119.1289	31/01/2024		57	50			
MN1466R	Trap 1	-22.82333	119.1299	31/01/2024	52	91	20			
MN1466R	Trap 2	-22.82333	119.1299	31/01/2024	52	91	50			
MN1483R	Trap 1	-22.82292	119.1304	31/01/2024		6	5			
MN1371R	Trap 1	-22.82254	119.1245	31/01/2024		33	30			
MN1725DTM	Trap 1	-22.82245	119.1308	31/01/2024	56	122	5			
MN1725DTM	Trap 2	-22.82245	119.1308	31/01/2024	56	122	30			
MN0726R	Trap 1	-22.82212	119.1308	31/01/2024	43	135	25			
MN1462R	Trap 1	-22.82157	119.13	31/01/2024	52	153	30			
MN1460R	Trap 1	-22.821	119.1299	31/01/2024		40	35			
MN1413R	Trap 1	-22.82066	119.127	31/01/2024	62	135	50			
MN1312R	Trap 1	-22.81987	119.1211	31/01/2024	78	93	40			
MN1363R	Trap 1	-22.8189	119.1245	31/01/2024		42	15			
MN1407R	Trap 1	-22.81795	119.127	31/01/2024		33	10			

Site code	Sample type	Latitude	Longitude	Collection date	SWL	EOH	Trap depth (m)	Temp. (°C)	EC (µS/cm)	pH
MN1407R	Trap 2	-22.81795	119.127	31/01/2024		33	30			
MN1318R	Trap 1	-22.81758	119.1217	31/01/2024		39	15			
MN1302R	Trap 1	-22.8167	119.1206	31/01/2024		27	5			
MN1302R	Trap 2	-22.8167	119.1206	31/01/2024		27	25			
MN1275R	Trap 1	-22.81629	119.1197	31/01/2024		33	25			
MN1215R	Trap 1	-22.81582	119.1166	31/01/2024		10	10			
MN1240R	Trap 1	-22.8158	119.1183	31/01/2024		39	5			
MN1240R	Trap 2	-22.8158	119.1183	31/01/2024		39	35			
MN1261R	Trap 1	-22.8158	119.1187	31/01/2024		39	30			
MN1276R	Trap 1	-22.81578	119.1197	31/01/2024		33	20			
MN1262R	Trap 1	-22.81539	119.1187	31/01/2024		21	15			
MN1241R	Trap 1	-22.81538	119.1182	31/01/2024		33	30			
MN1472R	Net	-22.82647	119.13	2/02/2024	55.7	60				
MN1489R	Net	-22.82419	119.1314	2/02/2024	53.2	58				
MN1436R	Net	-22.82241	119.1285	2/02/2024	58.4	74		31.1	743	6.7
MN1428R	Net	-22.82156	119.1277	2/02/2024	59.4	81				
MN1368R	Net	-22.82118	119.1246	2/02/2024	58	68				
MN1377R	Net	-22.81885	119.1255	2/02/2024	55	63		31.7	459	6.36
MN1231R	Net	-22.81839	119.1172	2/02/2024	58.4	70		31.6	692	6.73
MN1422R	Net	-22.81837	119.1275	2/02/2024	59.2	69		31.2	654	6.66
MN1137R	Net	-22.81812	119.1098	2/02/2024	63	73				
MN1188R	Net	-22.81798	119.1138	2/02/2024	43.7	54				
MN1167R	Net	-22.81707	119.1124	2/02/2024	47.8	57		31.6	796	6.69
MN0307R	Trap 1	-22.8206	119.0904	Trap missing		33	33			
MN0345R	Trap 2	-22.82633	119.0959	Trap lost		59	30			
MN0985R	Trap 1	-22.81869	119.0996	Trap missing		33	15			
MN2655R	Trap 1	-22.82604	119.1353	Bore collapsed	32	42	10			
MN2655R	Trap 2	-22.82604	119.1353	Bore collapsed	32	42	20			
MN0935R	Trap 1	-22.81659	119.0948	Trap lost		44	40			
MN0834R	Trap 2	-22.83095	119.1112	Trap lost		61	55			
MN2576R	Trap 1	-22.82904	119.1204	Trap lost		34	15			
MN2576R	Trap 2	-22.82904	119.1204	Trap lost		34	30			
MN0570R	Trap 1	-22.83504	119.1197	Trap lost		41	40			
MN2358R	Trap 2	-22.82406	119.0993	Trap missing		30	20			
MN0680R	Trap 1	-22.82431	119.1281	Bait missing		12	8			