Bennelongia Environmental Consultants

East Jimblebar Baseline Subterranean Fauna Survey

Prepared for:

BHP Western Australian Iron Ore

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Draft Report

Short-Range Endemics I Subterranean Fauna

Waterbirds I Wetlands

East Jimblebar Baseline Subterranean Fauna Survey

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EXECUTIVE SUMMARY

The east Jimblebar area ('the Study Area') is located 50 km east of the town of Newman, immediately east of current mining operations at the BHP Western Australian Iron Ore (WAIO) Jimblebar hub. The Study Area encompasses the Hashimoto and East Jimblebar iron ore deposits. Mining in the Study Area has the potential to impact upon subterranean fauna communities in two ways: first as a result of the direct removal of habitat during mine pit excavation, and secondly as a result of groundwater drawdown associated with dewatering around the mine pits to enable mining below the water table.

BHP WAIO commissioned Bennelongia Environmental Consultants (Bennelongia) to prepare a subterranean fauna assessment to inform the future environmental approvals process for mining. This report represents a baseline assessment that is general in nature for the Study Area as a whole. The specific aims of this assessment were to:

(1) Undertake desktop assessment of previous records and literature to determine the likelihood, based on sub-regional information, of the Study Area supporting subterranean fauna, including significant species and/or communities;
(2) Provide the results of a three-season subterranean fauna survey of the Study Area; and
(3) Determine whether there are any species that may potentially be restricted to the Study Area on the basis of current results and earlier subterranean fauna surveys conducted.

A comprehensive review of previous subterranean fauna records was conducted for an area of approximately 100 x 100 km centred on the Study Area (decimal degrees top left: 22.9°S, 119.7°E; bottom right: 23.9°S, 120.7°E). The desktop review identified at least 72 troglofauna species and 141 stygofauna species within the wider search area around the Study Area.

Three rounds of subterranean fauna sampling were conducted in 2020-2022. Troglofauna were sampled by scraping and trapping, while stygofauna were sampled by net hauling in bores. The first round of survey was conducted from 4-11 March 2020 (scrapes and net samples taken, traps set) and 11-13 May 2020 (traps collected); the second round was conducted from 25 June-2 July 2020 (scrapes and net samples taken, traps set) and 8-9 September 2020 (traps collected); and the third round was conducted from 5-11 October 2022 and traps collected between 15-16 December 2022. A total of 135 stygofauna samples and 197 troglofauna samples were collected across the three rounds (one troglofauna sample comprises both scraping and trapping with each technique contributing 0.5 of a sample).

This three-phase survey resulted in the collection of 16 species of troglofauna. Seven species are currently known only from the Study Area including the pseudoscorpion *Tyrannochthonius* `PSE057`; the isopods *Troglarmadillo* sp. B09 and nr *Andricophiloscia* `BIS509`; the centipede *Cryptops* `BSCOL066`; the symphylans *Symphylella* `BSYM114` and *Scutigerella* `BSYM113`; and the dipluran Japygidae `BDP192`.

Fifteen species of stygofauna were collected during the three-pase subterranean fauna survey. Four of these were collected as singletons and are currently only known from the Study Area. These are the annelid worms Phreodrilidae `BOL084` and Tubificidae `BOL074` and two crustaceans, the harpacticoid copepod *Schizopera* `BHA285` and the syncarid *Atopobathynella* `BSY241`

The results of the three-phase survey in 2020-22 were combined with those from surveys undertaken in 2008-2009. When combined, the total sampling effort for the Study Area is 192 stygofauna samples and 498.5 troglofauna samples.

For troglofauna, a combined total of 825 specimens belonging to 34 species have been collected. Fifteen species are currently known only from the Study Area: the pseudoscorpions *Tyrannochthonius* `PSE056` and *Tyrannochthonius* `PSE057`; the isopods *Troglarmadillo* sp. B07, *Troglarmadillo* sp. B09, and nr *Andricophiloscia* `BIS509`; the centipedes *Cryptops* `BSCOL066` and *Cryptops* sp. B09; the pauropods Pauropodidae sp. B05 and *Allopauropus* sp. B02; the symphylans *Symphylella* `BSYM114`, *Hanseniella* sp. B01, *Hanseniella* sp. B04, *Hanseniella* sp. B24, and *Scutigerella* `BSYM113`; and the dipluran Japygidae `BDP192`. The species complex Pauropodidae sp. B01 s.l. may be restricted to the Study Area as well.

These results represent a troglofauna community of moderate richness. The most likely driver of this high diversity is the geology of the Study Area, which includes weathered habitats such as Banded Iron Formation that are known to be prospective for troglofauna. The majority of restricted troglofauna were collected in bores that intersect geologies such as the Brockman Iron Formation and the Marra Mamba Formation. Assuming connectivity of these geologies between the Study Area and the surrounding landscape, it is reasonable to expect that troglofauna species known only from the Study Area in fact have wider distributions than currently documented.

For stygofauna, a combined total of 1,878 specimens from at least 15 species have been collected. Four species collected as singletons are currently known only from within the Study Area: the annelid worms Phreodrilidae `BOL084` and Tubificidae `BOL074` and two crustaceans, the harpacticoid copepod *Schizopera* `BHA285` and the syncarid *Atopobathynella* `BSY241`.

The diversity of this stygofauna community is moderately low, especially when compared with the highly diverse community hosted in the Ethel Gorge threatened ecological community to the west. The most likely reasons are that the depth to water table in the Study Area is too great to be conducive to stygofauna occurrence and that palaeovalleys and calcretes, which are particularly prospective for stygofauna, are largely absent in the Study Area. Nevertheless, such features exist close to and marginally intersect the Study Area.

Taken together, the primary finding of both surveys (2008-2009 and 2020-2022) and the desktop assessment are that there is a troglofauna community of moderate richness in the Study Area and a stygofauna community of low richness. Both findings reflect the geology of the area, and do not appear to be biased by sampling technique or effort.

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1. INTRODUCTION

The east Jimblebar area ('the Study Area') is located 50 km east of the town of Newman and immediately east of current mining operations at the BHP Western Australian Iron Ore (BHP WAIO) Jimblebar Hub (Figure 1). The Study Area encompasses the Hashimoto and East Jimblebar iron ore deposits. The Study Area was expanded eastward in 2022 (throughout this report, the original 2020 survey area is denoted in yellow and the 2022 survey area in green). Future mining at the iron ore deposits in the Study Area may potentially impact subterranean fauna occurring there through the direct removal of habitat, either through mine pit excavation or, if dewatering is necessary, through groundwater removal.

BHP WAIO commissioned Bennelongia Environmental Consultants (Bennelongia) to undertake a baseline subterranean fauna survey to inform the future approvals process for mining. This report represents a baseline account of subterranean fauna that is general in nature for the Study Area as a whole. The specific aims of this report are to:

1) Undertake desktop assessment of previous records and literature to determine the likelihood, based on sub-regional information, of the Study Area supporting subterranean fauna, including significant species and/or communities;
2) Provide the results of a three-season subterranean fauna survey of the Study Area; and
3) Determine whether there are any species that may potentially be restricted to the Study Area on the basis of current results and earlier subterranean fauna surveys conducted.

1.1. Report Structure

This report provides the results of survey during 2020-2022. It briefly describes the geology and hydrogeology of East Jimblebar (Section 2), and then presents a desktop collation of historical subterranean fauna data from the vicinity of East Jimblebar that includes results of previous survey in 2008-2009 (Section 3).

Section 3 deals with the 2020-2022 survey, unless otherwise stated. For example, sampling effort is calculated for the 2020-2022 survey; a second sampling effort value is calculated that combines sampling from both survey periods. Lists of species recovered during the 2020-2022 survey are presented in Sections 4.2.1-4.2.4. Lists of species recovered across both survey periods (2020-2022 and 2008-2009) are presented in Appendices 4 and 5.

Section 5 treats all the results from both survey periods and other subterranean fauna records as a single dataset. For example, the total number of restricted species reported is drawn from both the 2008-2009 and 2020-2022 records as well as the other records recovered in the desktop assessment.

1.2. Subterranean Fauna

The term "subterranean fauna" encompasses two distinct animal communities: aquatic stygofauna and air-breathing troglofauna. Evolution in underground habitats has given species in these communities many convergent morphological and physiological characteristics; for example, reduced or absent eyes, reduced or absent pigmentation, vermiform bodies, elongate sensory structures, loss of wings, increased lifespan, a shift towards a K-selected breeding strategy, and decreased metabolism (Gibert and Deharveng 2002). The overwhelming majority of subterranean fauna species in Western Australia are invertebrates, apart from a few species of fishes and snakes. Troglofauna species belong to a wide variety of invertebrate groups such as isopods, palpigrades, spiders, schizomids, pseudoscorpions, harvestmen, millipedes, centipedes, pauropods, symphylans, bristletails, silverfish, cockroaches, true bugs, beetles, and fungus-gnats. On the other hand, stygofauna species are mostly crustaceans, although they can also include earthworms, beetles, snails, and some other groups that have poorly defined taxonomy, such as nematodes and rotifers (Halse 2018b).

Although inconspicuous, subterranean fauna contribute markedly to the overall biodiversity of Australia. Most subterranean species satisfy Harvey's (2002) criterion for short-range endemism (SRE), having total

geographic ranges of less than 10,000 km^2 and occupying patchy or discontinuous habitats within those ranges. Given that species with small ranges are more vulnerable to extinction following habitat degradation than wider ranging species (Ponder and Colgan 2002), it follows that subterranean taxa are highly susceptible to anthropogenic threats, particularly large-scale excavation and groundwater abstraction.

Subterranean species that are only found in deeper subterranean environments throughout their life cycle are referred to as troglobites or stygobites, while species that move to the surface during one or more life stages (or have surface populations) are referred to as troglophiles or stygophiles. Troglophiles and stygophiles usually have larger distributions than troglobites and stygobites, given that there are greater dispersal opportunities at the surface. Species that use subterranean spaces only opportunistically are referred to as trogloxenes or stygoxenes and are generally much more widespread than obligate subterranean species.

Understanding of the subterranean fauna in the Pilbara has progressed immensely since the late 1990s (Humphreys 1999; Eberhard *et al.* 2005), in large part due to extensive sampling for the assessments of potential mining impacts on these communities. The diversity of the region is now recognised as globally significant, with at least 1,500 species of troglofauna and around 1,300 species of stygofauna (Halse 2018a, Halse 2018b), although reliable estimates are hindered by poor taxonomic frameworks for some of the animal groups. It is, however, well established that the diversity of subterranean fauna is closely linked to geology, because these animals can only colonise areas with appropriate habitat. Geologies supporting rich troglofauna communities include mineralised or weathered iron formations, calcrete, alluvium, and sometimes mafic volcanic rocks. Stygofauna communities are usually richest in alluvial and calcrete aquifers, especially within palaeochannels, although they may also be found in iron formations, especially detrital and channel iron, and granitic greenstone terranes (Halse 2018a). As a result of their dependence on the distribution of underground spaces, the composition and richness of both stygofauna and troglofauna communities often vary significantly over short distances. Therefore, to achieve reliable estimates of the diversity and composition of the subterranean fauna of an area, knowledge of local geology and hydrogeology needs to be coupled with biological surveys.

1.3. Conservation Framework

Native flora and fauna in Western Australia are protected at both State and Commonwealth levels. At the national level, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a legal framework to protect and manage nationally and internationally important flora, fauna and ecological communities. However, the threatened fauna lists of the EPBC Act currently place little emphasis on subterranean fauna. The legal framework for protection of flora and fauna at the state level in Western Australia is the *Biodiversity Conservation Act 2016* (BC Act). Most protection is provided for species listed under the BC Act as 'threatened' and this list includes some subterranean species. In addition to the list of threatened species under the BC Act, the Department of Biodiversity, Conservation and Attractions (DBCA) maintains a list of priority species that are of conservation importance but, for various reasons, do not meet the criteria for listing as threatened.

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

2. HABITAT

2.1. Geology

A review of the local geology within the Jimblebar tenements and surrounds was undertaken by BHP WAIO to assist with the characterisation of subterranean fauna habitat during a Regional Subterranean Fauna Survey of BHP WAIO tenements (Bennelongia 2009). This report draws on this existing information, together with regional geological mapping from the Geological Survey of Australia (Williams and Tyler 1991), to describe the geology of the Study Area with a focus on characteristics that are important for subterranean fauna.

The main iron-bearing formations in the Study and surrounding area are the Brockman Iron Formation, Weeli Wolli Formation, Marra Mamba Iron Formation, Boolgeeda Iron Formation, and Jeerinah Formations (Figure 2; Williams and Tyler 1991). The Hashimoto and East Jimblebar deposits, which fall within the Study Area, comprise banded iron of the Brockman Iron Formation (Figure 2). The other major banded-iron formation in the area is the Weeli Wolli Formation, which outcrops north of the target deposits, together with flaggy iron of the Boolgeeda Formation and some areas of Woongarra volcanic rocks. The Marra Mamba Iron and Jeerinah Formations, containing ferruginous chert, shale and sandstone, occur in the south of the Study Area (Figure 2). Weathering within iron formations may provide habitat highly conducive to troglofaunal occurrence.

Alluvial deposits of silt, sand, and gravel are also present within the tenements along floodplains and drainage channels such as Jimblebar Creek and Copper Creek. Quaternary deposits of colluvium and minor alluvium are present on the scree slopes and talus slopes adjacent to and derived from the bedrock at the valley bottoms.

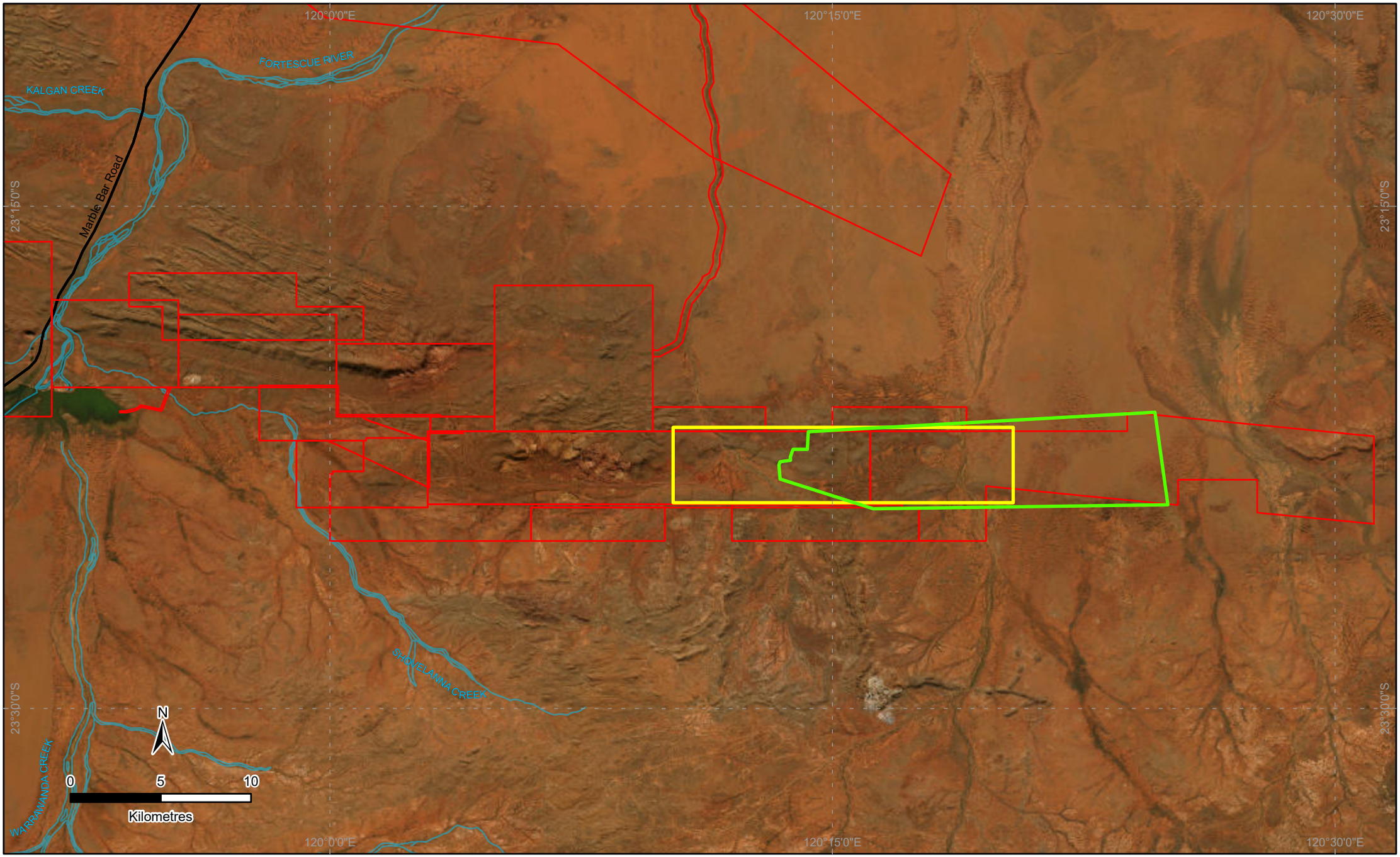
2.2. Hydrogeology

The most prospective habitat for stygofauna in the Pilbara comprises aquifers associated with deep valley-fill alluvium and colluvium, although aquifers in weathered bedrock sometimes contain moderate stygofauna communities (Halse 2018b). By contrast, localised aquifers in shallow, creek-bed alluvium outside of the main palaeovalleys become largely unsaturated in the dry season and therefore are unlikely to represent permanent stygofauna habitat. There are no substantial deposits of calcrete in the immediate vicinity of the Study Area; the nearest extensive calcrete systems are associated with the Ethel Gorge Aquifer TEC, approximately 40 km west of the Study Area (Figure 3).

BHP WAIO are currently undertaking a hydrogeological assessment which provides insight into characteristics of several aquifers (BHP In Prep) that may influence the presence and distribution of stygofauna. There are four main aquifers in the Jimblembar region: two orebody aquifers and two regional aquifers. The orebody aquifers are the Marra Mamba Formation aquifer, an almost continuous east-west running aquifer at the south of the project, and the Brockman Iron Formation aquifer, which similarly runs almost continuously east-west but in the north of the Study Area. These aquifers a separated by shale units such as the Mt McRae, Mt Sylvia, and West Angela Shales. The regional aquifers are the Weathered Paraburdoo (and Bee Gorge) Members of the Whittenoom Formation and the Sand and Gravel occurrences in the Tertiary Detritals. Both of these aquifers are high in storage and transmissivity.

There are a number of geological features within the Jimblebar area that act as barriers to the flow of groundwater, and therefore may prevent the movement of stygofauna and limit species distributions. The central fault runs in a northeast-southwest direction, and separates all aquifers in the region into western and eastern compartments (BHP In Prep). It is believed that a combination of dolerite dyke infill and clays with low permeability prevents flow across this fault. There are three other faults in the area that act as barriers or partial barriers to flow. The Comedy fault, infilled with dolerite dyke, is located

within the Marra Mamba Formation to the south, while the Monster Fault and another unnamed fault form a V shape that acts as a partial barrier to flow.



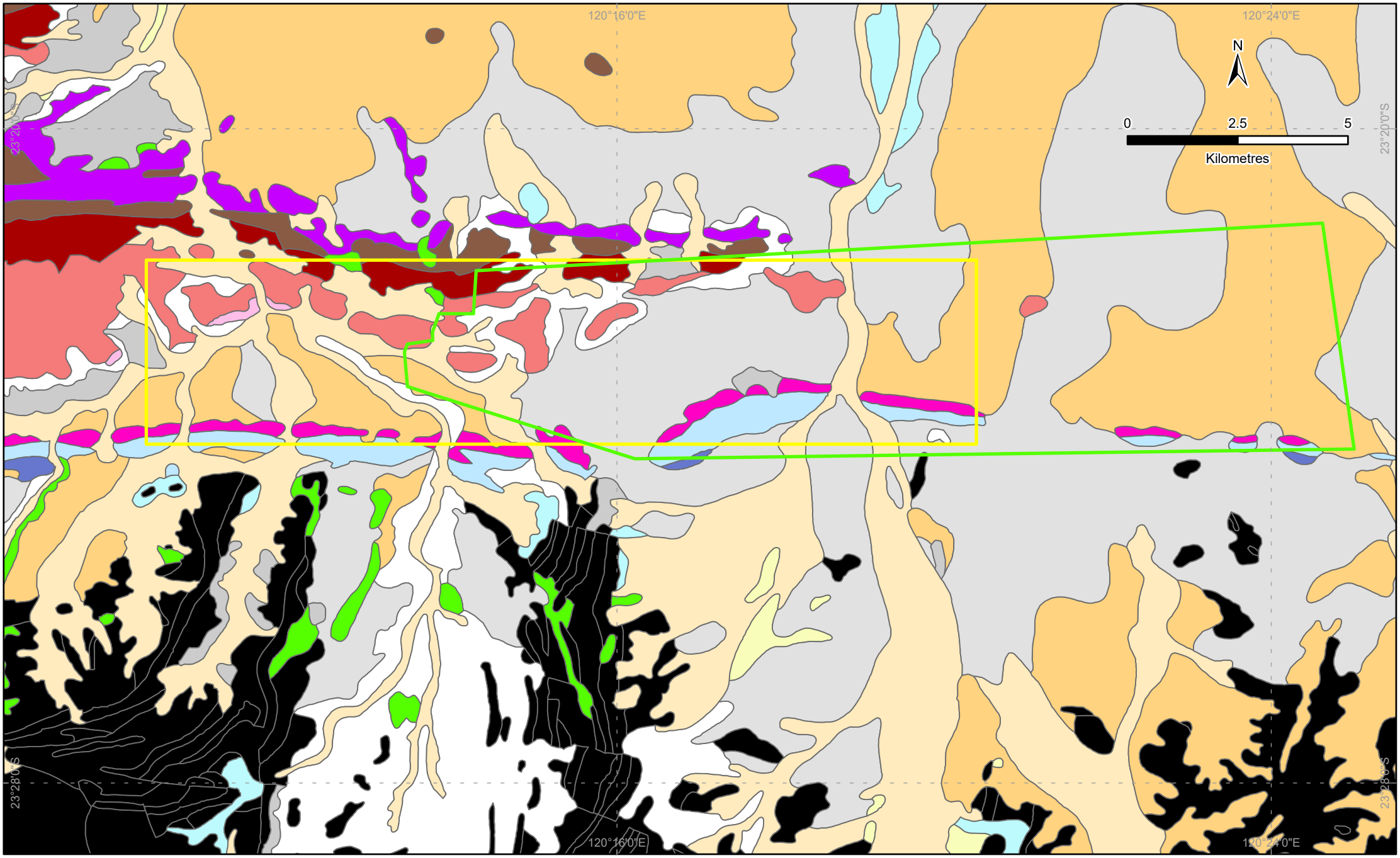
Bennelongia Environmental Consultants

GCS GDA 1994
Author: hclark
Date: 17/05/2023

Legend

- The Project
- Major roads
- Major drainage lines
- Survey Area 2020
- Survey Area 2022
- BHP Tenements

Figure 1. Location of the Project



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Legend

- The Project
- Survey Area 2020
- Survey Area 2022

Geology

- Alluvium
- Boolgeeda Iron Formation
- Brockman Iron Formation
- Calcrete
- Colluvium
- Colluvium and alluvium
- Colluvium and minor alluvium
- Eolian sand
- Jeerinah Formation
- Laterite
- Marra Mamba Iron Formation
- Mount McRae Shale and Mount Sylvia Formation
- Mixed lacustrine and eolian deposits
- Weeli Wolli Formation
- Woongarra Volcanics
- Mafic Volcanics
- Other Units

Figure 2. Geology of the Study Area

3. DESKTOP REVIEW

3.1. Methods

Prior to the field survey, a comprehensive review of previous subterranean fauna records was conducted for an area approximately 100 x 100 km centred on the Study Area (Figure 4; decimal degrees top left: 22.9°S, 119.7°E; bottom right 23.9°S, 120.7°E). Searching this area generated a list of the stygofauna and troglofauna species that may occur in the Study Area. The desktop review included a search of the Western Australian Museum (WAM) database and Bennelongia's own database, which has been compiled from over 15 years of subterranean fauna surveys and includes historical samples at Hashimoto, East Jimblebar, and surrounding BHP WAIO tenements. Additionally, lists of significant communities and species (BC Act and EPBC Act) and records in the Atlas of Living Australia were consulted.

Recordsof subterranean fauna have either been classified to the species level or to higher order. Records classified to the species level may belong to formally described species (represented by a Latin binomial, e.g. *Draculoides neoanthropus*) or may be undescribed species that that have been assigned a unique code to (e.g. *Tyrannochthonius* `PSE059`). Identifications, both to fomal species level or informal species level represented by a unique code, are based on morphological features and/or genetic sequences. Higher order identifications (i.e. those suffixed "sp." or "indet.") represent specimens that could only partially be classified, usually because the specimen is damaged or belongs to a nondiagnostic life stage (morphological identification) or did not yield a genetic sequence. Higher order identifications were not included in the final list of previous subterranean fauna records in the desktop review, unless they were likely to represent a group for which there were no species-level records.

3.2. Results

At least 72 troglofauna species and 136 stygofauna species have been collected historically in the search area (Figure 4; Appendices 1 and 2, respectively).

3.2.1. Stygofauna and the Ethel Gorge Aquifer Stygobiont Community

Many of the subterranean records recovered in the desktop review occur within the Ethel Gorge TEC. The existence of a significant stygofauna community within the Ethel Gorge aquifer first became apparent following survey work done in 1997 by Stefan Eberhard and Bill Humphreys at Orebody 23. An additional stygofauna survey was undertaken during the subsequent environmental impact assessment process for below water table mining at Orebody 23 (Eberhard and Humphreys 1999). This led to the description of multiple species of the amphipod genus *Chydaekata* at Orebody 23, with many recorded from a single bore (Bradbury 2000). These descriptions led to the Threatened Ecological Communities Scientific Committee recommending that DBCA list Ethel Gorge as containing a TEC (DEC 2010). Survey to date has documented 82 stygofauna species in the Ethel Gorge aquifer and/or adjacent local groundwater, most of which occur in the TEC. Ongoing monitoring and associated analysis within the TEC continues to allow for our understanding of the stygofauna community at the location to develop. For example, the multiple *Chydaekata* species described by Bradbury (2000) are now understood to constitute only one or two species (Finston et al. 2004). Approximately 40 species are known only from the Ethel Gorge aquifer and/or adjacent local groundwater (Subterranean Ecology 2013; Stantec 2022). While this level of endemicity would be regarded as exceptionally high for surface fauna, it is not unusual for subterranean fauna (Halse *et al.* 2014).

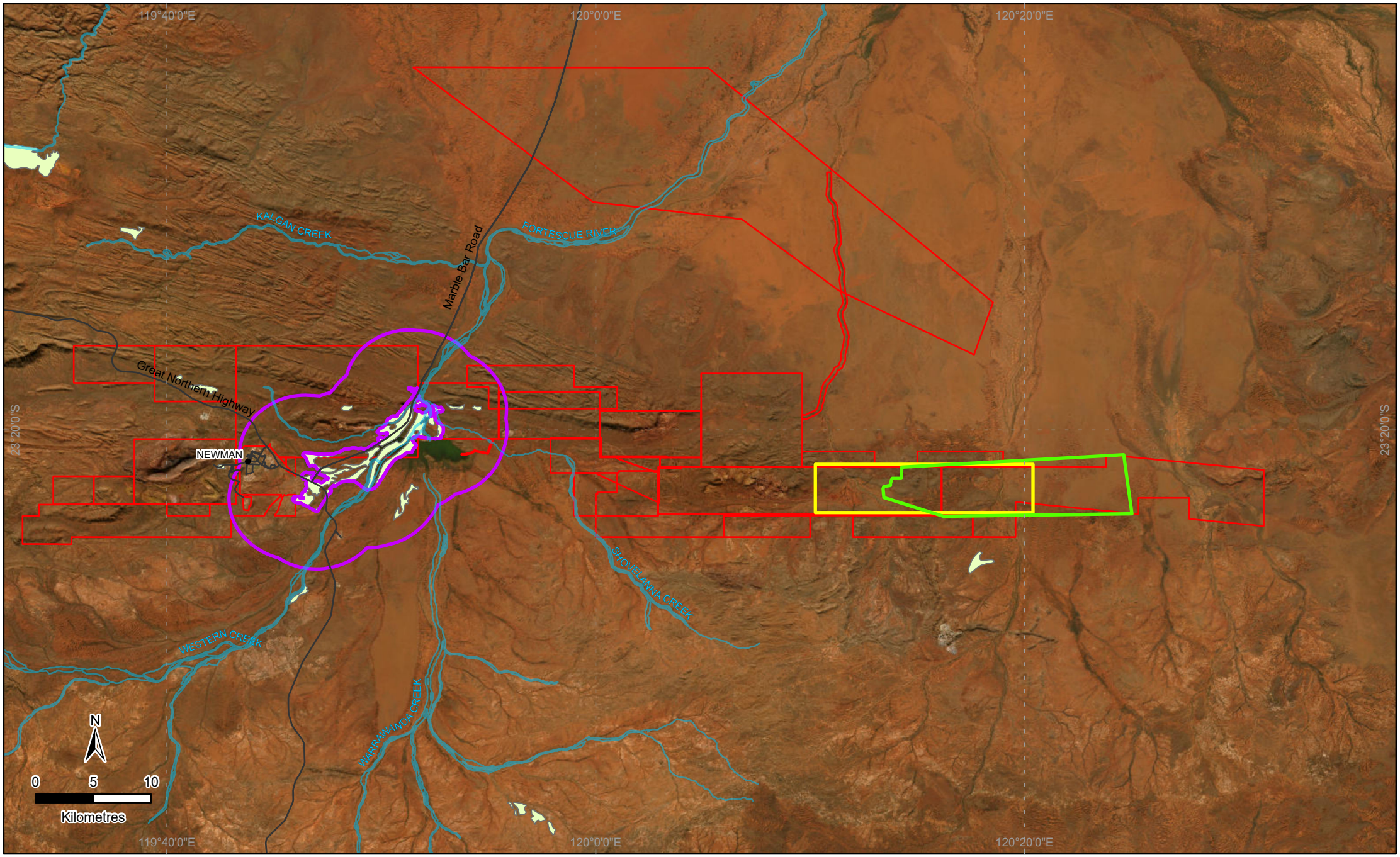
3.2.2. Historical Subterranean Fauna Sampling in the Study Area

Other historical subterranean fauna surveys include work in the Study Area conducted by Bennelongia (2009) and Ecowise (2009) (Table 1). Surveys have also been initiated by BHP in neighbouring tenements including Western Ridge, Mount Whaleback, and Orebodies 19, 29, 30, 31, and 35 (e.g., Bennelongia 2013, 2014, 2021); with ongoing monitoring conducted within the Ethel Gorge TEC (Stantec 2022).

Table 1: Historical sampling at the Study Area.

Year	Project	Consultant	Target Group	Troglofauna sample effort	Stygofauna sample effort
2009	Jimblebar	Bennelongia	Troglofauna	301.5	
2009	Jimblebar	Ecowise	Stygofauna		57

Species lists from the 2008-2009 surveys of the Study Area are presented in Tables 2 and 3. Species names in both tables have been updated to reflect progress in taxonomy since 2009. Ten of the species in these tables are currently known only from the Study Area: the pseudoscorpions *Tyrannochthonius* `PSE056` and *Tyrannochthonius* `PSE057`; the isopods *Troglarmadillo* sp. B07 and *Troglarmadillo* sp. B09; the centipede *Cryptops* sp. B09; the pauropods Pauropodidae sp. B05 and *Allopauropus* sp. B02; and the symphylans *Hanseniella* sp. B01, *Hanseniella* sp. B04, and *Hanseniella* sp. B24. Additionally, pauropods identified as Pauropodidae sp. B01 s.l. and stygofaunal crustaceans identified as *Diacyclops humphreysi* s.l. belong to species complexes that may also have restricted distributions. However, both groups appear to be locally abundant and probably have distributions extending beyond the Study Area. No other stygofauna species from this survey are known to be restricted to the Study Area.



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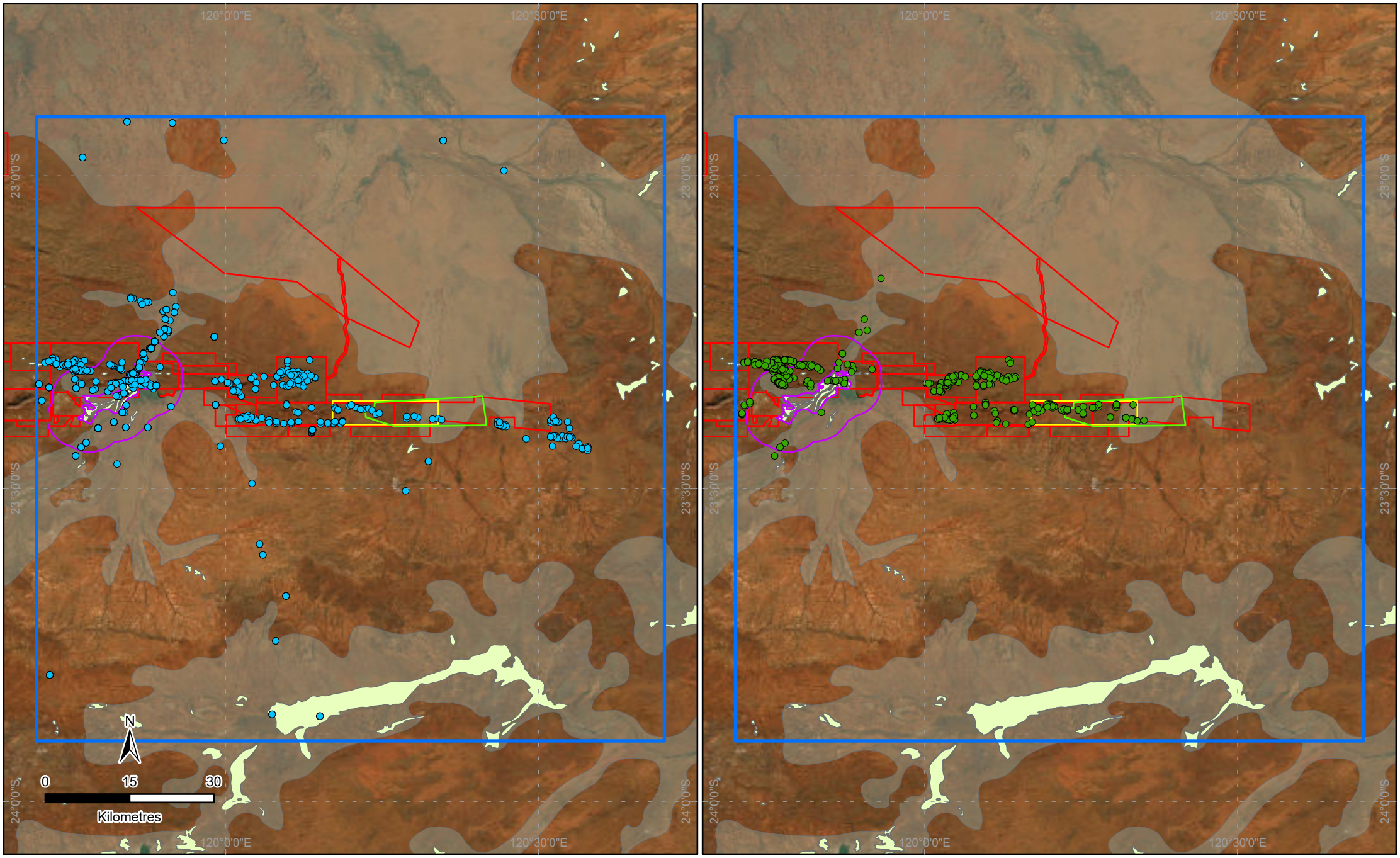
Legend

- The Project
- Towns
- Major roads
- Major drainage lines
- Survey Area 2020
- Survey Area 2022
- Ethel Gorge TEC and Buffer
- Calcrete
- BHP Tenements

Figure 3. Location of the Ethel Gorge TEC calcrete aquifer relative to the Study Area



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Date: 17/05/2023

Legend

- The Project
- BHP Tenements
- Survey Area 2020
- Survey Area 2022
- Ethel Gorge TEC and Buffer
- Calcrete
- Palaeovalleys
- Desktop search area
- Stygofauna (left panel)
- Troglofauna (right panel)

Figure 4. Location of the desktop search area and previous subterranean fauna records

Table 2: Troglofauna species recorded in 2008-2009 surveys in the Study Area. Distribution has been determined in light of data subsequently collected in the 2020-2022 survey (this report)

Higher Order Identification	Lowest Identification	Number of Specimens	In Study Area	Restricted Distribution	Previous Classification
Arthropoda					
Arachnida					
Pseudoscorpiones					
Chthoniidae					
Tyrannochthonius	*Tyrannochthonius* `PSE056`	3	Yes	Yes	*Tyrannochthonius* sp. B05
	Tyrannochthonius `PSE057`	3	Yes	Yes	*Tyrannochthonius* sp. B06
	Tyrannochthonius sp. B11	1	No	No	
Lechytiidae					
Lechytia	*Lechytia* `PSE019`	1	No	No	*Tyrannochthionus* sp B04, *Lechytia* sp. B01, and *Lechytia* sp. B02
Palpigradi	Palpigradi sp.	5	Yes	Higher Order Identification	
	Palpigradi sp. B01	9	Yes	No	
	Palpigradi sp. B03	12	Yes	No	
Araneae	Araneomorphae sp. Jim 1	1	No	No	
Gnaphosidae					
nr *Encoptarthria*	nr *Encoptarthria* sp. B03	4	Yes	No	
Oonopidae					
Prethopalpus	*Prethopalpus* sp. B05	3	No	No	Oonopidae sp. B05, Araneomorphae sp. B05
	Prethopalpus sp. B09	3	Yes	No	Araneomorphae sp. B09, Oonopidae sp. B09
	Prethopalpus sp. B10	1	No	No	
Malacostraca					
Isopoda					
Armadillidae					
Troglarmadillo	*Troglarmadillo* sp. B07	199	Yes	Yes	Armadillidae sp. B07
	Troglarmadillo sp. B09	3	Yes	Yes	
Chilopoda					
Scolopendrida					
Cryptopidae					
Cryptops	*Cryptops* sp. B09	1	Yes	Yes	

Higher Order Identification	Lowest Identification	Number of Specimens	In Study Area	Restricted Distribution	Previous Classification
Diplopoda					
Polyxenida					
Lophoproctidae	Lophoproctidae sp.	9	Yes	Higher Order Identification	
Lophoturus	*Lophoturus madecassus*	94	Yes	No	
Polyxenidae	Polyxenidae sp.	2	No	Higher Order Identification	
Pauropoda					
Tetramerocerata					
Pauropodidae	Pauropodidae sp. B01 s.l.	2	Yes	No	Pauropoda B01
	Pauropodidae sp. B05	3	Yes	Yes	
	Pauropodidae sp. B07	1	No	No	
Allopauropus	*Allopauropus* sp. B02	1	Yes	Yes	
Decapauropus	*Decapauropus* sp. B05	1	No	No	
	Decapauropus tenuis	6	No	No	Pauropodidae sp. B04 (*Decapauropus tenuis*?)
Symphyla					
Cephalostigmata					
Scolopendrellidae					
Symphylella	*Symphylella* sp. B02	2	Yes	No	
	Symphylella sp. B07	3	Yes	No	
Scutigerellidae					
Hanseniella	*Hanseniella* sp.	2	Yes	Higher Order Identification	
	Hanseniella sp. B01	9	Yes	Yes	
	Hanseniella sp. B04	5	Yes	Yes	
	Hanseniella sp. B24	1	Yes	Yes	*Hanseniella* sp. B01
	Hanseniella sp. B25	1	No	No	*Hanseniella* sp. B01
Scutigerella	*Scutigerella* sp. B06	2	No	No	
Entognatha					
Diplura	Diplura sp.	2	Yes	Higher Order Identification	
Japygidae	Japygidae `DPL002` s.l.	8	Yes	No	Japygidae sp. B04 (=S01)
	Japygidae sp. B09	1	No	No	
Parajapygidae	Parajapygidae sp. B26	1	No	No	
Insecta					
Zygentoma	Zygentoma sp.	1	Yes	Higher Order Identification	

Higher Order Identification	Lowest Identification	Number of Specimens	In Study Area	Restricted Distribution	Previous Classification
Nicoletiidae					
	Nicoletiinae sp.	3	No	Higher Order Identification	
Arthropoda					
Insecta					
Zygentoma					
Nicoletiidae					
Dodecastyla	*Dodecastyla* sp. B02	10	Yes	No	Dodecastyla sp. B02 (=*Atelurodes* sp. S02)
Trinemura	*Trinemura* sp.	1	Yes	Higher Order Identification	
	Trinemura sp. B04	2	No	No	
	Trinemura sp. B24	9	No	No	
Blattodea					
Blattidae	Blattidae sp.	3	No	Higher Order Identification	
Nocticolidae					
Nocticola	*Nocticola* sp.	5	Yes	Higher Order Identification	
Hemiptera					
Cixiidae	Cixiidae sp. B02	27	Yes	No	Hemiptera sp. B01
Meenoplidae					
Phaconeura	*Phaconeura* sp.	93	Yes	Higher Order Identification	
	Phaconeura sp. B04	77	No	No	Meenoplidae sp. B03, Meenoplidae sp. B17
Coleoptera					
Staphylinidae	Pselaphinae sp. B01	1	Yes	No	
Diptera					
Sciaridae					
Allopnyxia	*Allopnyxia* sp. B01	2	No	No	Sciaridae sp. B01

Table 3: Stygofauna species recorded in 2008-2009 surveys in the Study Area

Higher Order Identification	Lowest Identification	Number of Specimens	In Study Area	Restricted distribution	Previous classification
Nematoda	Nematoda spp.	867	Yes	No	
Annelida					
Clitellata	Oligochaeta sp.	524	Yes	Higher Order Identification	
Haplotaxida					
Phreodrilidae	Phreodrilidae sp.	4	No	Higher Order Identification	Phreodrillus sp.
Enchytraeida					
Enchytraeidae	Enchytraeidae sp.	26	Yes	Higher Order Identification	
Enchytraeus	*Enchytraeus* sp. AP PSS1 s.l.	1	No	Higher Order Identification	
	Enchytraeus sp. AP PSS2 s.l.	250	Yes	Higher Order Identification	
Arthropoda					
Ostracoda	Ostracoda sp. unident.	40	Yes	Higher Order Identification	
Podocopida					
Candonidae					
Notacandona	*Notacandona gratia*	135	No	No	
Origocandona	*Origocandona* `BOS099`	45	No	No	
Maxillopoda					
Cyclopoida	Cyclopoida sp.	1	No	Higher Order Identification	
Cyclopidae					
Diacyclops	*Diacyclops* sp.	1	Yes	Higher Order Identification	
	Diacyclops humphreysi s.l.	205	No	No	
Harpacticoida					
Parastenocarididae					
Parastenocaris	*Parastenocaris* sp.	1	No	Higher Order Identification	
	Parastenocaris `COP001`	164	No	No	*Parastenocaris* sp. B02
Malacostraca					
Syncarida					
Bathynellidae	Bathynellidae sp.	6	No	Higher Order Identification	
Parabathynellidae					
Billibathynella	*Billibathynella cassidis*	3	No	No	
Amphipoda	Amphipoda sp.	2	No	Higher Order Identification	
Paramelitidae	Paramelitidae sp. B34	1	No	No	

Higher Order Identification	Lowest Identification	Number of Specimens	In Study Area	Restricted distribution	Previous classification
Kruptus	*Kruptus* `AMP004`	10	No	No	

4. THREE-PHASE SURVEY, 2020-2022

Three rounds of subterranean fauna sampling were conducted in 2020-2022. The first round of survey was conducted from 4-11 March 2020 (scrapes collected and traps set for troglofauna, net-haul samples for stygofauna) and 11-13 May 2020 (traps collected); the second round was conducted from 25 June-2 July 2020 (scrapes and net samples collected, traps set) and 8-9 September 2020 (traps collected); and the third round was conducted from 5-11 October 2022 (scrapes and net samples collected, traps set) and traps were collected from 15-16 December 2022.

4.1. Methods

4.1.1. Troglofauna Sampling Methods

As far as possible, each troglofauna sample represented the combined results of two different, complementary sampling techniques: scraping and trapping.

Scraping is an active sampling technique that is used prior to setting traps. In each scraping event, a troglofauna net is prepared with a weighted ring net of 150-µm mesh, and a diameter closely matched to 60% of the bore diameter. This net is lowered to the bottom of a bore or to the water table, and subsequently scraped back to the surface along the hole wall at least four times. In each of these scrapes a unique and cardinally opposed section of the wall of the hole is targeted (e.g., north, south, east, and west) to maximize the number of organisms retrieved. The contents of each scrape are immediately transferred to 100% ethanol to preserve the sample and its DNA.

Trapping is a passive sampling technique used after the drill hole has been scraped. Traps of cylindrical PVC (270 x 70 mm) with holes drilled on the side and top to function as entrances are baited with microwaved leaf litter. Traps are lowered on nylon cord to the end of the bore, or to a few metres above the water table. An additional second trap is set (at half the depth of the first trap) in approximately every fourth hole (where possible; Halse *et al.* 2018). In the third round of this survey, all troglofauna samples consisted of two traps to maximise the collection rate and chances of collecting restricted species. Across all three rounds, traps were left inside bores for nine weeks. During that period, the bores were sealed to prevent the movement of surface animals into the troglofauna traps. When the traps were retrieved, their contents were transferred to a zip-lock bag and transported live to the laboratory in Perth.

Sampling effort for troglofauna is calculated on the basis that one standard sample comprises both scraping and trapping, with scraping and trapping each comprises 0.5 of a sample. For example, if both trapping and scraping are carried out in a given hole, the sample effort would be 1. If, however, scraping is carried out and a trap is set but the trap is subsequently lost, the sample effort would be 0.5. Sample effort is calculated in this way irrespective of how many traps are set in a given hole.

4.1.2. Stygofauna Sampling Methods

Six hauls using weighted plankton nets were taken at each bore, three using a 50-µm mesh net and three using a 150-µm mesh net. During each haul, the net was lowered to the bottom of the hole and oscillated vertically to agitate the benthos, increasing the likelihood of collecting benthic species, and then slowly retrieved. Contents of the net were transferred to 100% ethanol to preserve the sample and its DNA. Nets were washed between holes to minimise site-to-site contamination.

4.1.3. Sampling Effort

A total of 135 stygofauna samples and 197 troglofauna samples were collected during the three phases of sampling (Table 4; Figure 5). A complete list of sample locations can be found at Appendix 3. When combined with historical sampling effort (Table 1), a total of 192 stygofauna samples and 498.5 troglofauna samples have been collected from the Study Area.

Table 4: Sampling effort across the three rounds of survey for subterranean fauna at the Study Area

Sampling Phase	Stygofauna	Troglofauna			
		Scrapes	Trap 1	Trap 2	Sampling Effort
2020 (R1)	45	70	61	9	65.5
2020 (R2)	45	70	53	17	61.5
2022 (R3)	45	70	70	70	70
Total	**135**	**210**	**184**	**94**	**197**

4.1.4. Laboratory Processing

All samples were sorted in the laboratory. Leaf litter retrieved from traps was processed in Tullgren funnels under halogen lamps for 72 hours, during which time the light and heat drives animals downwards and towards a vial containing 100% ethanol as a preservative. Litter was checked after removal from the funnels to ensure no invertebrates remained.

All samples (from net-hauling, scraping, and trapping) were elutriated to separate out heavy sediment particles and sieved into size fractions using 250-, 90-, and 53-µm screens. Samples were sorted and identified under a dissecting microscope and, where necessary, dissected and examined under a differential interference contrast compound microscope. During the final phase of identification, dissecting and compound microscopes were used, with the process often requiring dissection of specimens.

Specimens were identified to described species where possible using published taxonomic keys and species descriptions. In many cases among subterranean fauna, however, species descriptions and taxonomic frameworks are lacking. In these cases, specimens may be identified morphologically and/or genetically as belonging to undescribed species; such species are usually assigned unique placeholder codes (e.g. 'B01'). In other cases, when the taxonomic framework is exceptionally poor or the specimen in question is damaged or of a non-diagnostic life stage, the lowest level to which the specimen can be identified is usually genus or family.

Sequencing of DNA from 50 animals was attempted, comprising 39 specimens from the Study Area and 11 from surrounding areas, to confirm some morphological identifications, identify specimens in a nondiagnostic life stage and to enable comparison of Study Area specimens with those froom other tenements. Depending on the size of the specimens, legs or whole animals were used for DNA extractions using a Qiagen DNeasy Blood & Tissue kit (Qiagen 2006). Elute volumes were set at 30 µL determined by the age, condition, and quantity of material. Primers combinations used for PCR amplifications were: (1) LCOI490:HCO2198, C1J1718:HCO2198, and LCOI490:HCOoutout for the MT-COI gene (Folmer *et al.* 1994; Schwendinger and Giribet 2005); and (2) SRJ14197:SRN14745 for the 12S gene (Simon *et al.* 2006). Dual-direction, sanger sequencing was undertaken for PCR products by the Australian Genome Research Facility (AGRF).

The returned sequences were edited and aligned in Geneious (Kearse *et al.* 2012), where neighbour-joining phylogenetic trees were then calculated using 1000 bootstraps. Genetic distances (using the Tamura-Nei method) between unique sequences were measured as uncorrected *p*-distances (total percentage of nucleotide differences between sequences). The sequences obtained were compared with each other, as well as with sequences held in the Bennelongia database and with publicly available sequences on GenBank. Sequences on GenBank and in grey literature were included in phylogenetic analysis in order to extend the range of referents and thereby to provide greater taxonomic resolution. After the taxonomic assessment was completed, representative animals were lodged with the WAM.

4.1.5. Personnel Involved in the Survey

The qualifications or relevant experience of Bennelongia staff involved in each component of the assessment are shown in Table 5. Limitations of the survey are presented in Table 6.

Table 5: Personnel involved in the Project.

Task	Personnel	Qualifications/experience
Fieldwork	Jim Cocking	B.Sc. Grad Dip
	Louis Masarei	B.Sc.
	Huon Clark	B.Sc. (Hons) PhD
	Mike Scanlon	B.Sc. (Hons)
	Adam Barnard	B.Sc. (Hons)
Sample sorting	Heather McLetchie	B.Sc. (Hons)
	Melanie Fulcher	B.Sc. (Hons)
	Melita Pennifold	B.Sc. (Hons)
Species identification	Jane McRae (most invertebrates)	30 years of identification experience at Australian Museum, British Museum, DBCA, Bennelongia, author/co-author of 14 taxonomic papers and 9 papers on species inventory/ecology
	Stuart Halse (ostracods)	B.Sc. (Hons) Ph.D. Ostracods, 40 years experience, described numerous species, invited author of Thorp & Covich guide to Australian ostracod genera
DNA analysis	Heather McLetchie	B.Sc. (Hons)
	Melanie Fulcher	B.Sc. (Hons)
	Rowan Lymbery	B.Sc. (Hons) PhD
Mapping	Rowan Lymbery	B.Sc. (Hons) PhD
Reporting	Rowan Lymbery	B.Sc. (Hons) PhD
	Bruno Buzatto	B.Sc. (Hons) PhD
	Huon Clark	B.Sc. (Hons) PhD
	Ella Carstens	B.Sc.

Table 6: Limitations of the survey

Limitation	Rationale	Mitigation	Severity
Weak taxonomic framework for some groups	There is a very weak taxonomic framework for certain groups collected, making it hard to identify some specimens to species level.	Genetic analyses were used in 50 cases to confirm IDs, align newly collected specimens with previously sequenced species, and/or narrow down the identification of genera with poor taxonomically definition.	The implemented mitigations prevent this limitation from significantly affecting the results/survey objectives.
Difficulty in identifying females and juveniles	In most groups covered in this report, adult males are necessary for full identifications, and the majority of specimens collected are juveniles and females.	As above.	As above.

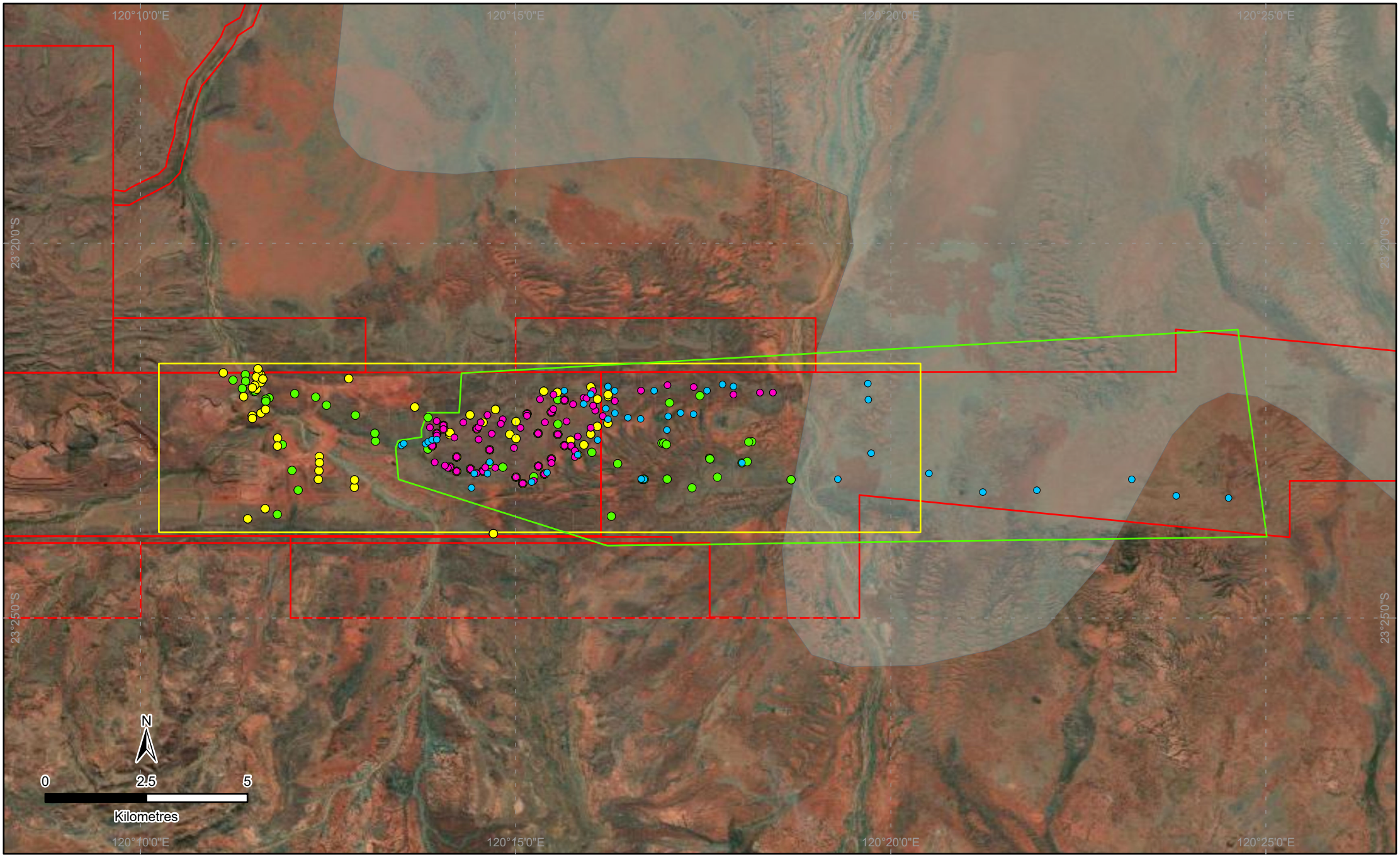


Figure 5. Sampling effort for subterranean fauna in the 2020-2022 survey

4.2. Results

4.2.1. Troglofauna Results

A total of 225 troglofauna specimens attributable to at least 16 species were collected in the three-phase survey conducted in 2020-2022 (Table 7). The majority of these species were collected in low numbers, including nine species collected as singletons (known from a single individual or single location). One, *Troglarmadillo* sp. B07, was represented by 199 individuals from two locations only 1 km apart. Groups collected within the Study Area included symphylans (three species), isopods (two species), diplurans (two species), true bugs (two species), pseudoscorpions (one species), palpigrads (one species), centipedes (one species), silverfish (one species), beetles (one species), millipedes (one species), and flies (one species).

Of the 16 species collected, four are widespread and thus not restricted to the Study Area (the polyxenid millipede *Lophoturus madecassus*, the silverfish *Dodecastyla* sp. B02, the troglobitic planthopper *Phaconeura* sp. B04, and the subterranean fly *Allopnyxia* sp. B01). Five species are more locally distributed however have been collected outside of the defined Study Area and are therefore not considered to be restricted in distribution. Seven species are currently known only from the Study Area (Figure 6): the pseudoscorpion *Tyrannochthonius* `PSE057`; the isopods *Troglarmadillo* sp. B09 and nr *Andricophiloscia* `BIS509`; the centipede *Cryptops* `BSCOL066`; the symphylans *Symphylella* `BSYM114` and *Scutigerella* `BSYM113`; and the dipluran Japygidae `BDP192`.

Combined troglofauna records from both survey periods, 2008-2009 and 2020-2022, are presented in Appendix 4. Note that Figure 6 includes records of species collected prior to the 2020-2022 surveys.

4.2.2. Stygofauna Results

A total of 171 stygofauna specimens attributable to at least 15 species were collected in the three-phase survey conducted in 2020-2022 (Table 8). Groups represented included annelid worms (up to 10 species), cyclopoid copepods (one species), ostracods (one species), harpacticoid copepods (one species), syncarids (one species), and nematode worms (higher order identification of a group not assessed in the environmental impact assessment process).

Some very widespread species were collected within the Study Area, including *Dero furcata*, *Pristina aequiseta*, *P. longiseta*, *Cyprinotus kimberleyensis* s.l., and *Microcyclops varicans*. Conversely, four of the species collected are currently known only from within the Study Area (Figure 7) and, moreover, were collected as singletons. These are the annelid worms Phreodrilidae `BOL084` and Tubificidae `BOL074` and two crustaceans, the harpacticoid copepod *Schizopera* `BHA285` and the syncarid *Atopobathynella* `BSY241`.

Combined stygofauna records from both survey periods, 2008-2009 and 2020-2022, are presented in Appendix 5.

Table 7: Troglofauna species collected during the 2020-2022 survey in the Study Area. Taxonomic ranks higher than genus are bolded. Higher order identifications that do not contribute to the number of species collected are highlighted in grey.

Higher Order Identification	Lowest Identification	Number of Specimens	Hole(s)	Restricted	Known Linear Distribution	Comments	Sequence Result	Previous Name(s)
Arthropoda								
Arachnida								
Pseudoscorpiones								
Chthoniidae								
Tyrannochthonius	*Tyrannochthonius* `PSE057`	2	EJ0833R and EJ0791R	Yes	2.8 km	Known from four locations within the Study Area	Failed	*Tyrannochthonius* sp. B06
Palpigradi	Palpigradi sp.	1	CM0089R	Higher Order Identification		Sequenced for a previous job	Failed	
	Palpigradi sp. B03	1	HH1525R	No	24 km	Also known west of the Study Area	Failed	
Malacostraca								
Isopoda								
Armadillidae								

Higher Order Identification	Lowest Identification	Number of Specimens	Hole(s)	Restricted	Known Linear Distribution	Comments	Sequence Result	Previous Name(s)
Troglarmadillo	*Troglarmadillo* sp. B09	37	EJ0886R, SJ2454RDG, HH0857R, EJ1246R and EJ1188R	Yes	9.5 km	Known from eight locations within the Study Area	Success	
Philosciidae								
nr *Andricophiloscia*	nr *Andricophiloscia* `BIS509`	1	HH3076R	Yes	Singleton	Known from a single location within the Study Area	12S only	nr *Andricophiloscia* sp.
Chilopoda								
Scolopendrida								
Cryptopidae								
Cryptops	*Cryptops* `BSCOL066`	1	EJ1211R	Yes	Singleton	Known from a single location within the Study Area		
Diplopoda								
Polyxenida								
Lophoproctidae								

Higher Order Identification	Lowest Identification	Number of Specimens	Hole(s)	Restricted	Known Linear Distribution	Comments	Sequence Result	Previous Name(s)
Lophoturus	*Lophoturus madecassus*	110	CM0077R, EJ0530RE, EJ0609R, EJ0679R, EJ0683R, EJ0889R, EJ1543R, EJ1805R, EJ2370R, HH0857R, HH0858R, HH1522R, HH2092R, HH2096R, HH3270R and HH3278R	No	Widespread	Known throughout WA		
Symphyla								
Cephalostigmata								
Scolopendrellidae								
Symphylella	*Symphylella* sp.	1	EJ1185R	Higher Order Identification		Fragment only, skin only, dead when collected. No tail. Cannot id further		

Higher Order Identification	Lowest Identification	Number of Specimens	Hole(s)	Restricted	Known Linear Distribution	Comments	Sequence Result	Previous Name(s)
	Symphylella `BSYM114`	1	CM0156R	Yes	Singleton	Known from a single location within the Study Area	Success	
	Symphylella sp. B07	1	EJ0833R	No	63 km	Known from locations west of the Study Area	Success	
Scutigerellidae								
Scutigerella	*Scutigerella* `BSYM113`	1	EJ0798R	Yes	Singleton	Known from a single location within the Study Area	Success	
Entognatha								
Diplura								
Japygidae	Japygidae sp.	1	HH2053R	Higher Order Identification		Could be any of the Japygidae species listed below	Failed	

Higher Order Identification	Lowest Identification	Number of Specimens	Hole(s)	Restricted	Known Linear Distribution	Comments	Sequence Result	Previous Name(s)
	Japygidae `BDP165`	3	EJ0679R and HH2092R	No	65 km	Also known west of the Study Area	Success	Japygidae `BDP193`
	Japygidae `BDP192`	1	PI031	Yes	Singleton	Known from a single location within the Study Area	Success	
Insecta								
Zygentoma								
Nicoletiidae								
Dodecastyla	*Dodecastyla* sp. B02	3	EJ0679R and EJ1805R	No	Widespread	Known throughout the Pilbara	Success	*Dodecastyla* sp. B02 (=*Atelurodes* sp. S02)
Hemiptera								
Meenoplidae								
Phaconeura	*Phaconeura* `BHE034`	2	EJ1258R	No	54 km	Also known west of the Study Area	Success	*Phaconeura* sp.
	Phaconeura sp. B04	5	EJ0679R and HH3076R	No	Widespread	Known throughout the Pilbara	Failed	Meenoplidae sp. B03, Meenoplidae sp. B17
Coleoptera								
Curculionidae								

Higher Order Identification	Lowest Identification	Number of Specimens	Hole(s)	Restricted	Known Linear Distribution	Comments	Sequence Result	Previous Name(s)
Curculionidae Genus 1	Curculionidae Genus 1 sp. B01	1	HH2061R	No	24 km	Also known west of the Study Area	Success	
Diptera								
Sciaridae								
Allopnyxia	*Allopnyxia* sp. B01	52	HH2093R	No	Widespread	Known throughout the Pilbara		Sciaridae B01

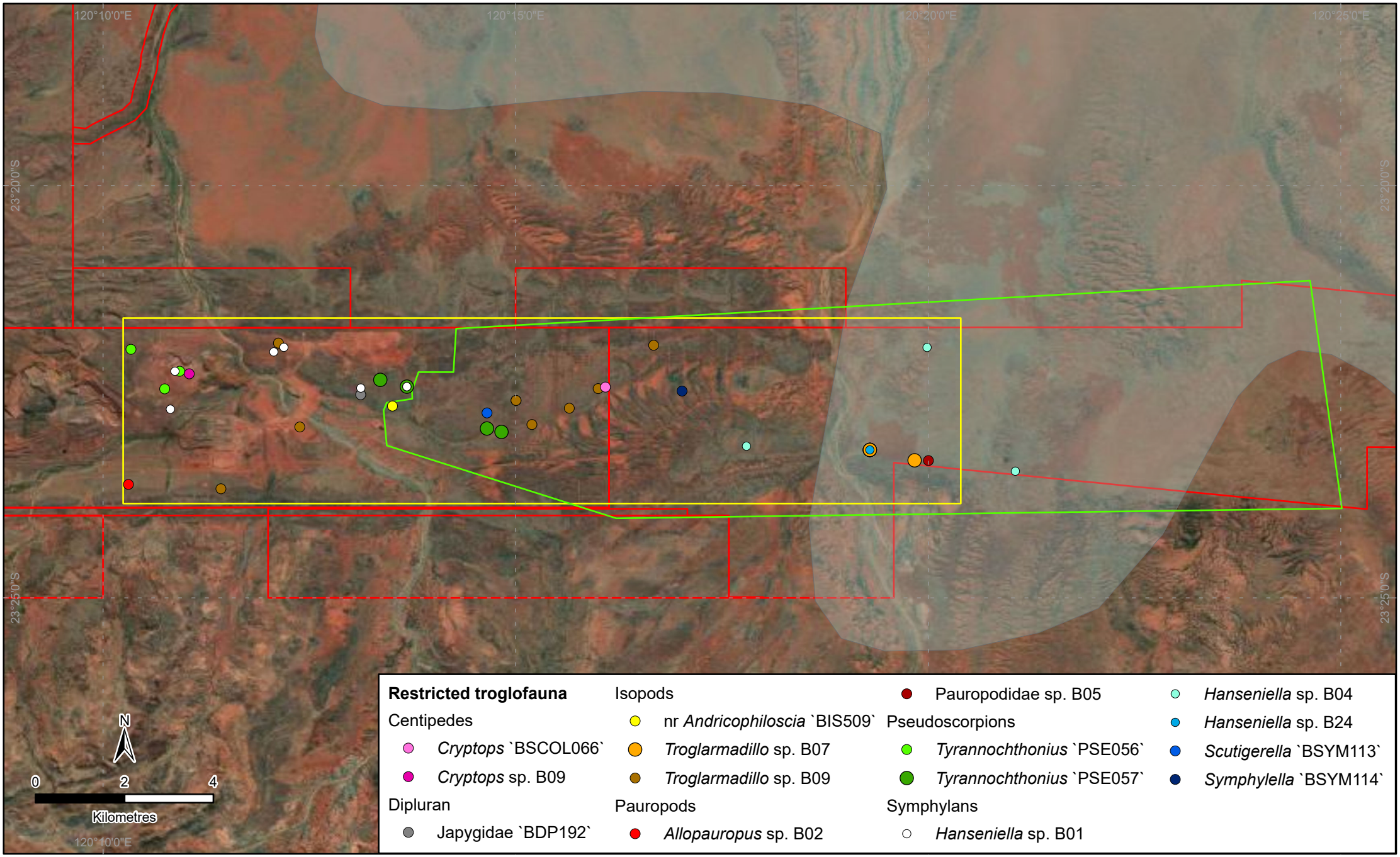
Table 8: Stygofauna species collected during the 2020-2022 survey in the Study Area. Taxonomic ranks higher than genus are bolded

Higher Order Identification	Lowest Identification	Number of Specimens	Collection Location(s)	Restricted	Known Linear Distribution	Comments	Sequence Result	Previous Name(s)
Nematoda	Nematoda spp.	34	CM0077R, HCM0007, HCM0025, HCM0052, HCM0060, HH0856R, HH1267R and HH2092R	No		Not assessed as part of the EIA process		
Annelida								
Aphanoneura								
Aeolosomatidae								
Aeolosoma	*Aeolosoma* sp.	1	HCM0021	Higher Order Identification		Only a fragment available on slide. Can not ID further, No material available for DNA		
Clitellata								
Haplotaxida								
Naididae								
Dero	*Dero furcata*	2	HH1272R	No	Widespread	Known from Northern WA	Success	*Dero (Dero) nivea*
Pristina	*Pristina aequiseta*	2	HCM0060	No	Widespread	Known throughout WA		

Higher Order Identification	Lowest Identification	Number of Specimens	Collection Location(s)	Restricted	Known Linear Distribution	Comments	Sequence Result	Previous Name(s)
	Pristina longiseta	3	HCM0021 and HH2120R	No	Widespread	Known throughout WA	Success	
Phreodrilidae	Phreodrilidae `BOL084`	1	HH1267R	Yes	Singleton	Known from a single location within the Study Area	Success	Phreodrilidae sp. AP SVC s.l.
	Phreodrilidae sp. AP SVC s.l.	1	HH2120R	No	Widespread	Known throughout WA. Likely the same as Phreodrilidae `BOL084` however is on slide, DNA not available		
Tubificidae	Tubificidae `BOL074`	2	HCM0021	Yes	Singleton	Known from a single location within the Study Area		Tubificidae sp.
Enchytraeida								
Enchytraeidae	Enchytraeidae `2 bundle` s.l. (short sclero 2 per seg)	6	HCM0053 and HH2120R	Higher Order Identification		Probably a species with a distribution extending outside the Study Area		

Higher Order Identification	Lowest Identification	Number of Specimens	Collection Location(s)	Restricted	Known Linear Distribution	Comments	Sequence Result	Previous Name(s)
	Enchytraeidae `2 bundle` s.l. (short sclero 4 per seg)	22	EJ0868R, EJ1051R, HH1272R, HH2120R, HH2121R and SJ2634DG	Higher Order Identification		Probably Enchytraeidae sp. E12-02		
	Enchytraeidae `3 bundle` s.l. (short sclero)	3	EJ0639R, HH1267R and HH2781R	Higher Order Identification		Probably Enchytraeidae sp. E06-05	Failed	
	Enchytraeidae sp. E06-05	29	EJ0618R and HH2120R	No	320 km	Known from outside the Study Area	Success	Enchytraeidae `3 bundle` s.l. (short sclero)
	Enchytraeidae sp. E12-02	30	HH2121R, EJ0532R and EJ1258R	No	39 km	Known from outside the Study Area	Success	Enchytraeidae `2 bundle` s.l. (short sclero 4 per seg), Enchytraeidae sp. OB_MC
Arthropoda								
Ostracoda								
Podocopida								
Cyprididae								
Cyprinotus	*Cyprinotus kimberleyensis* s.l.	7	PI031 and EJ1124R	No	Widespread	Known throughout WA	Failed	
Maxillopoda								
Cyclopoida								

Higher Order Identification	Lowest Identification	Number of Specimens	Collection Location(s)	Restricted	Known Linear Distribution	Comments	Sequence Result	Previous Name(s)
Cyclopidae								
Microcyclops	*Microcyclops varicans*	18	HH1272R and HH1267R	No	Widespread	Known throught WA	Failed	
Harpacticoida								
Miraciidae								
Schizopera	*Schizopera* `BHA285`	1	HCM0007	Yes	Singleton	Known from a single location within the Study Area		
Malacostraca								
Syncarida								
Parabathynellidae								
Atopobathynella	*Atopobathynella* `BSY241`	9	HH1267R	Yes	Singleton	Known from a single location within the Study Area	Success	*Atopobathynella* sp.



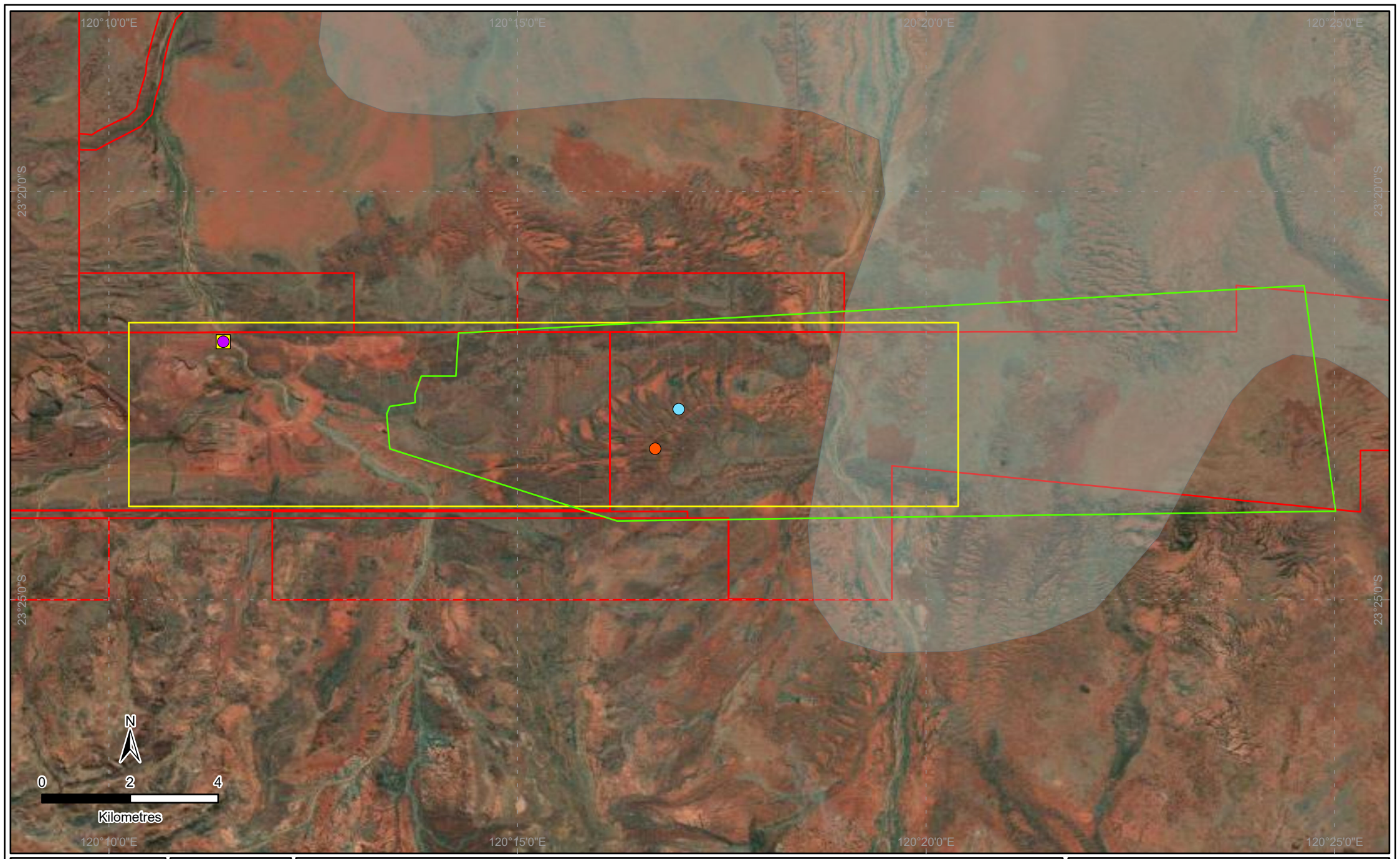
Bennelongia Environmental Consultants

GCS GDA 1994
Author: hclark
Date: 8/06/2023

Legend

- The Project
- Survey Area 2020
- Survey Area 2022
- Palaeovalleys
- BHP Tenements

Figure 6. Troglofauna species currently restricted to the Study Area



Bennelongia Environmental Consultants

GCS GDA 1994
Author: hclark
Date: 8/06/2023

Legend

- The Project
- BHP Tenements
- Survey Area 2020
- Survey Area 2022
- Palaeovalleys

Restricted stygofauna

- *Atopobathynella* `BSY241`
- Phreodrilidae `BOL084`
- *Schizopera* `BHA285`
- Tubificidae `BOL074`

Figure 7. Stygofauna species currently restricted to the Study Area

4.2.3. Troglofauna Genomic Results

Pseudoscorpions

Two pseudoscorpion specimens were sequenced in early 2023. Both individuals were collected in 2020 at the Study Area and assigned to the morphospecies code *Tyrannochthonius* `PSE057`. Unfortunately, both of these sequences were of low quality and sequencing failed; no further analysis was possible. Accordingly, the morphological identification *Tyrannochthonius* `PSE057` remains, and is reflected in the species list (Table 7).

Palpidrads

A single specimen of Palpigradi sp. B03 was sequenced. This individual was collected in 2020 at the Study Area. Unfortunately, this sequenced failed and no further analysis was possible. The morphological identification remains, and is reflected in the species list (Table 7).

Isopods

Six isopods from two genera were sequenced: *Troglarmadillo* and nr *Andricophiloscia*. To clarify the range of *Troglarmadillo* collected, two individuals from the Study Area assigned morphologically to *Troglarmadillo* sp. B09 were sequenced, as well as two reference individuals from surrounding areas (*Troglarmadillo* sp. B38 and *Troglarmadillo* sp. B40). There was a 1% difference between the two *Troglarmadillo* sp. B09 specimens, confirming these animals belong to a single species. Conversely, the reference species diverged substantially from the target species: *Troglarmadillo* sp. B38 was 23.3% divergent from *Troglarmadillo* sp. B09 and *Troglarmadillo* sp. B40 was 42.0% divergent from *Troglarmadillo* sp. B09 (Figure 8). Accordingly, the specimens from the Study Area retain the morphospecies identification of *Troglarmadillo* sp. B09.

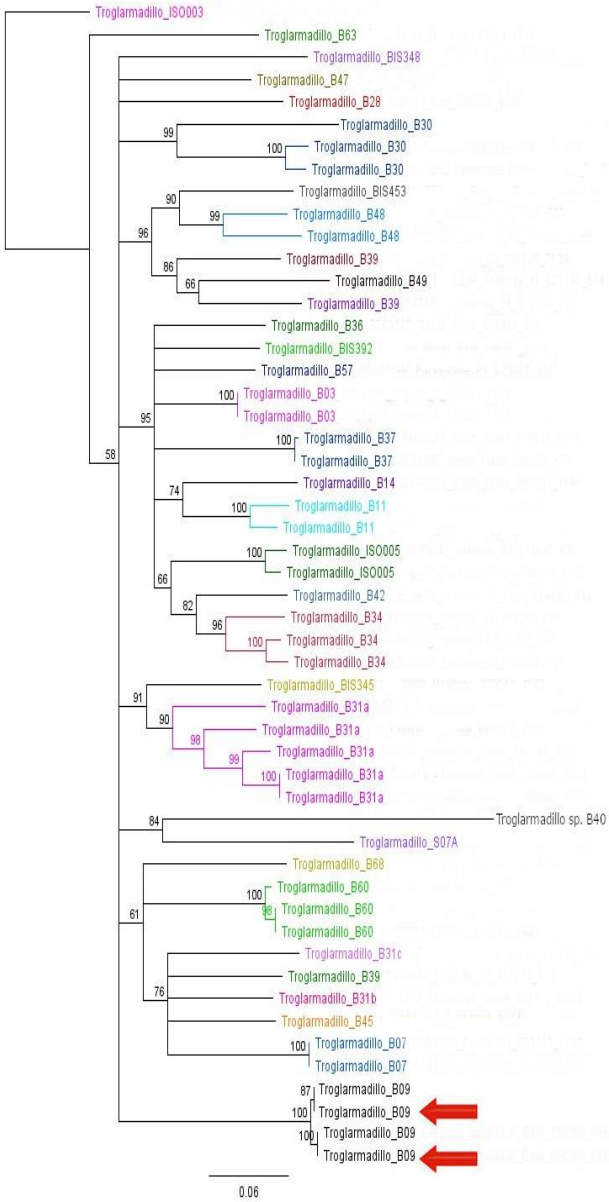


Figure 8: Neighbour joining tree of *Troglarmadillo* spp. Based on MT-COI

Two specimens of nr *Andricophiloscia* were sequenced: one (nr *Andricophiloscia* sp.) collected from the Study Area in 2022 and another (nr *Andricophiloscia* sp. B17) collected from the surrounding area in 2014. Unfortunately, COI sequencing failed in the 2022 individual and 12S sequencing failed in the 2014, preventing genomic comparison between the specimens. No other sequences are available for nr *Andricophiloscia*. Morphological analysis indicates the 2022 specimen is a novel morphospecies; accordingly, this species has been updated to nr *Andricophiloscia* `BIS509` (Table 7).

Symphylans

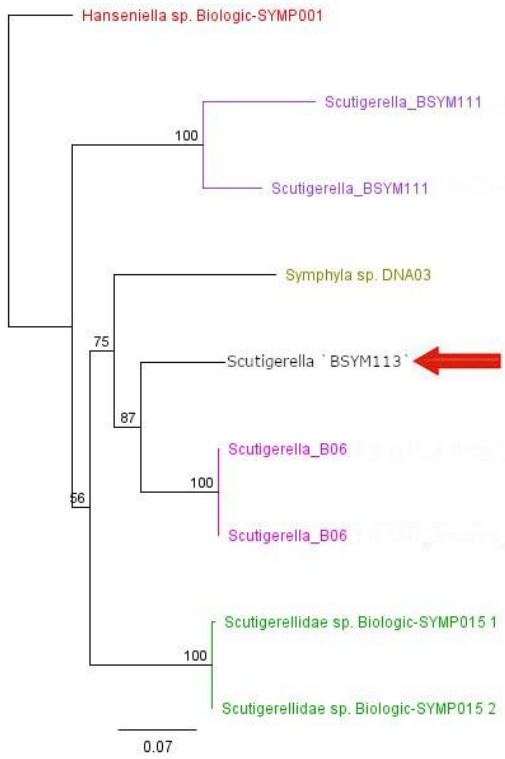


Figure 9: Neighbour joining tree of *Scutigerella* spp. Based on MT-COI

A total of eight symphylans (Arthropoda: Myriapoda: Symphyla) from two genera were sequenced: *Scutigerella* and *Symphylella*. Two specimens of *Scutigerella* were sequenced, one from the Study Area and one from surrounding deposits, the latter of which failed to return usable sequences. The individual from the Study Area was sequenced successfully (Figure 9); the closest match was to *Scutigerella* sp. B06 (12.7% divergent). The Study Area individual thus constitutes a new species and has been assigned a new code, *Scutigerella* `BSYM113`.

Six specimens of the genus *Symphylella* were sequenced. Four of these individuals were from 2009-2010 and failed to return positive sequences, presumably due to degradation over time. Two others were sequenced successfully but did not match any other available sequences (Figure 10). Based on morphology, these specimens have been assigned the species codes *Symphylella* sp. B07 (17.2% divergent from its nearest neighbour; collected in 2020) and *S.* `BSY114` (13.8% divergent; collected 2022).

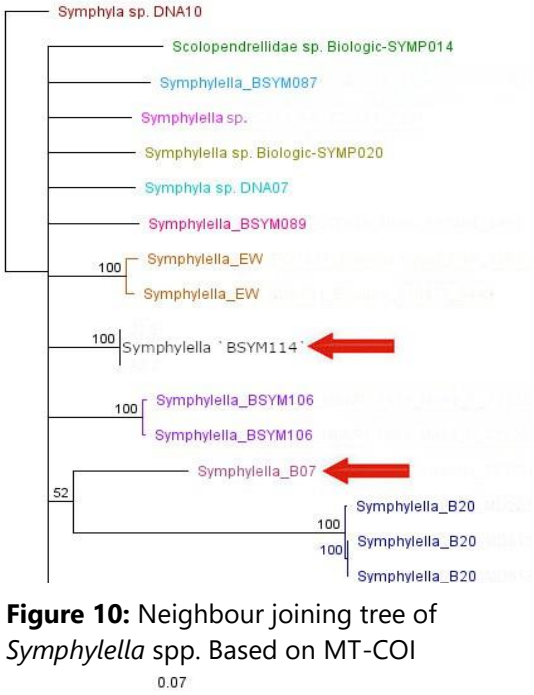


Figure 10: Neighbour joining tree of *Symphylella* spp. Based on MT-COI

Diplurans

Eight japygid diplurans were sequenced; seven of these were collected from the Study Area. Two individuals did not return successful sequences and have been removed from the analysis. Five individuals (including one from Western Ridge) were compared to and matched individuals previously sequenced and designated Japygidae `BDP165` (Figure 11). Based on these genomic results, the five sequenced individuals are now assigned to this species.

The final dipluran was morphologically distinct from the others and was 16.5% divergent from its nearest neighbour. As a result, this has been assigned a novel code, Japygidae sp. `BDP192` (Figure 11).

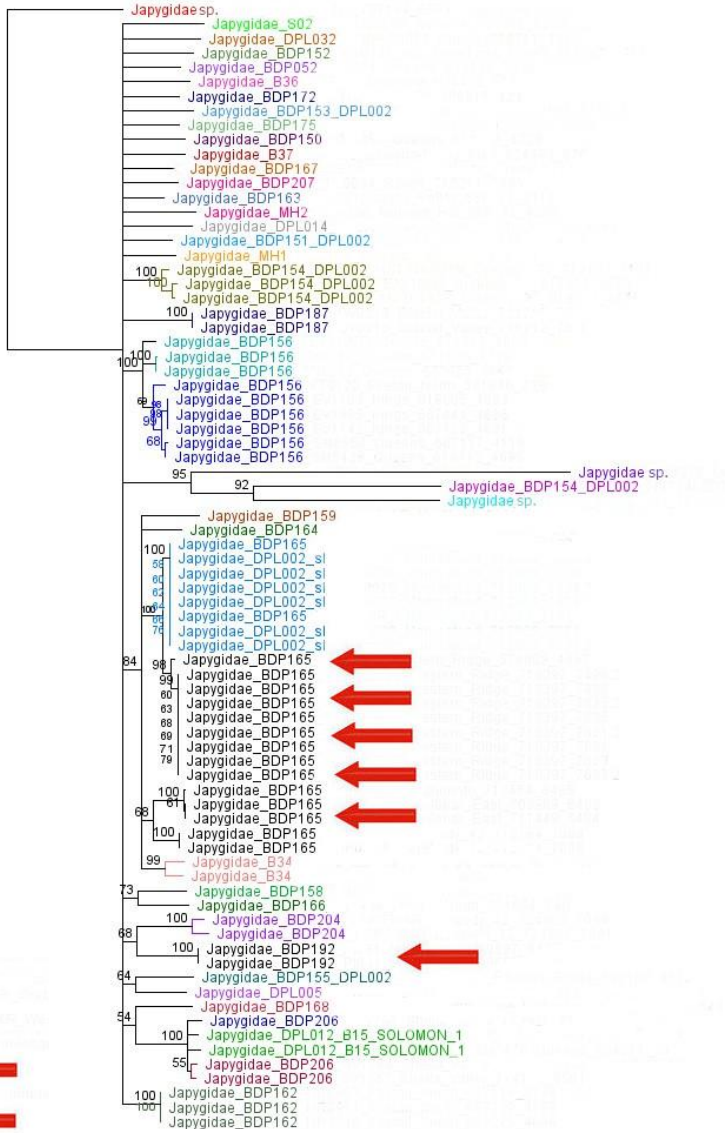


Figure 11: Neighbour joining tree of Japygidae spp. Based on MT-COI

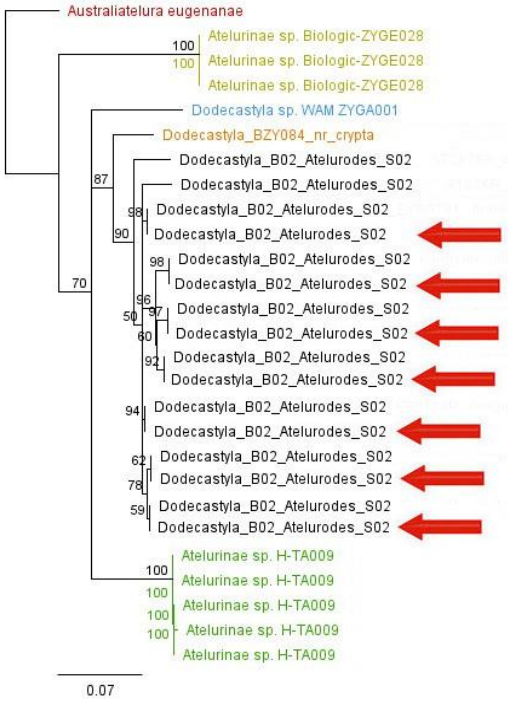


Figure 12: Neighbour joining tree of *Dodecastyla* spp. Based on MT-COI

Silverfish

Four silverfish specimens from the Study Area and three from surrounding locations were sequenced to verify the putative morphological identification of *Dodecastyla* sp. B02. All seven specimens aligned with existing sequences of *Dodecastyla* sp. B02, with a maximum divergence of 2.9%, confirming the morphological diagnosis (Figure 12).

True Bugs (Insecta: Hemiptera)

Three true bugs from the Study Area were sequenced, two identified as *Phaconeura* sp. B04 and one juvenile identified only as *Phaconeura* sp.

Molecular analysis confirmed the morphological diagnosis of the two specimens of *Phaconeura* sp. B04 and they are retained as such in Table 7 and Figure 13.

The juvenile specimen matched genomically with two other individuals, both designated *Phaconeura* sp. One of the matching individuals was found in the Bennelongia database; the other was found on GenBank (accession number KF227249). These specimens have now been assigned the novel morphospecies code *Phaconeura* `BHE034` (Table 7, Figure 13). The known distribution of this novel morphospecies is at least 54 km (Table 7).

Figure 13: Neighbour joining tree of *Phaconeura* spp. Based on MT-COI

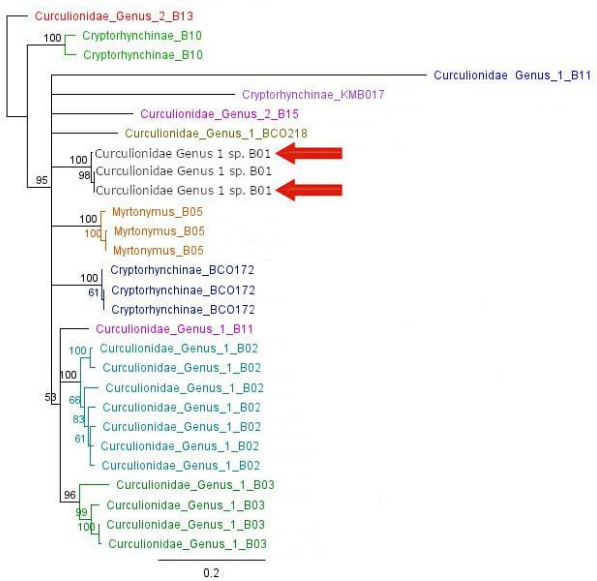


Figure 14: Neighbour joining tree of Curculionidae spp. Based on MT-COI

Beetles

Two beetle specimens, both identified morphologically as Curculionidae Genus 1 sp. B01, were sequenced. One of these individuals was collected from the Study Area in 2022; the other was collected from the surrounding region in 2013. Genomic analysis confirmed the morphological diagnosis (Figure 14). Curculionidae Genus 1 sp. B01 has a known linear distribution of approximately 24 km (Table 7) with a maximum diverge of 0.9% among individuals. The nearest molecular neighbour is Curculionidae Genus 1 sp. B14, with a divergence of 11.7% (Figure 14).

4.2.4. Stygofauna Genomic Results

Annelid Worms

Nine annelid worms attributed morphologically to five species were passed on for sequencing.

One specimen of *Pristina longiseta* was successfully analysed and was <1% divergent at the 12S gene and 7.2% divergent at the COI gene from other sequences of *P. longiseta*. As a result, the morphological diagnosis of *Pristina longiseta* was confirmed (Figure 15).

A single specimen of Phreodrilidae sp. was sequenced and no genetic match was found (Figure 16). The nearest match on GenBank (accession number KM206342) was 11.2% divergent at the 12S gene. As a result, the specimen in question was assigned the novel morphospecies code Phreodrilidae `BOL084`.

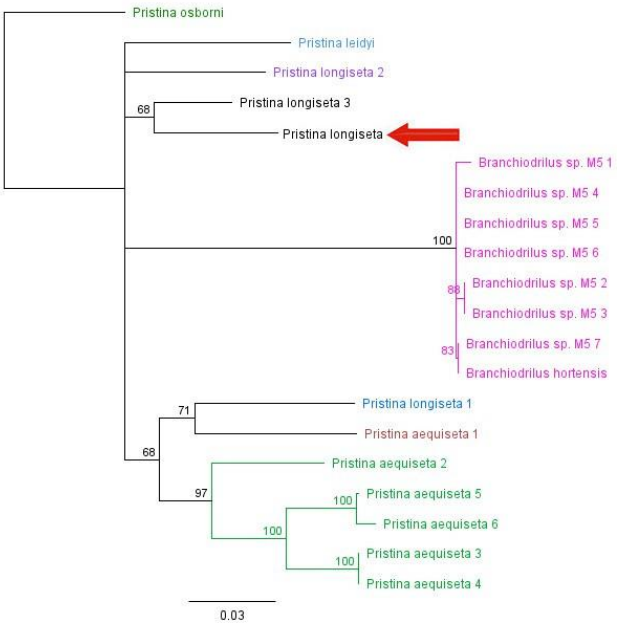


Figure 15: Neighbour joining tree of *Pristina longiseta* spp. Based on MT-COI

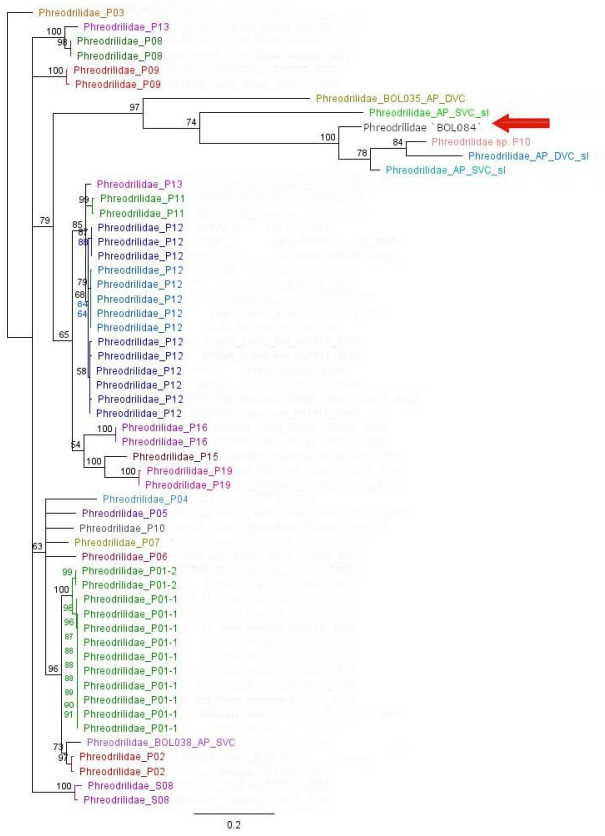


Figure 16: Neighbour joining tree of Phreodrilidae spp. Based on MT-COI

Six specimens of Enchytreaeidae worms were sequenced. One of the six specimens failed to produce a sequence and was removed from the analysis. Two specimens were matched on GenBank (4.9-5% divergent; Figure 17) with the existing morphospecies Enchytraeidae sp. E06-05 (accession numbers OP242141 and MT621157), described by Brown *et al.* (2015). Three specimens were matched on GenBank (1.6-2.7% divergent; Figure 17) with another morphospecies described by Brown *et al.* (2015), Enchytraeidae sp. E12-02 (accession number KM206492).

Finally, a single specimen identified morphologically as *Dero* (*Dero*) *nivea* was sequenced and was found to be 4.3% divergent at the 12S gene from *Dero furcata*. This specimen has now been updated to *Dero furcata*.

Ostracods

Two specimens identified as *Cyprinotus kimberleyensis* s.l., both collected at the Study Area in 2020, were sequenced. Both specimens failed to return a positive sequence and as a result their identification could not be refined.

Copepods

A single specimen of cyclopoid copepod identified morphologically as *Microcyclops varicans* was sequenced but failed to return a positive result. The morphological identification is retained.

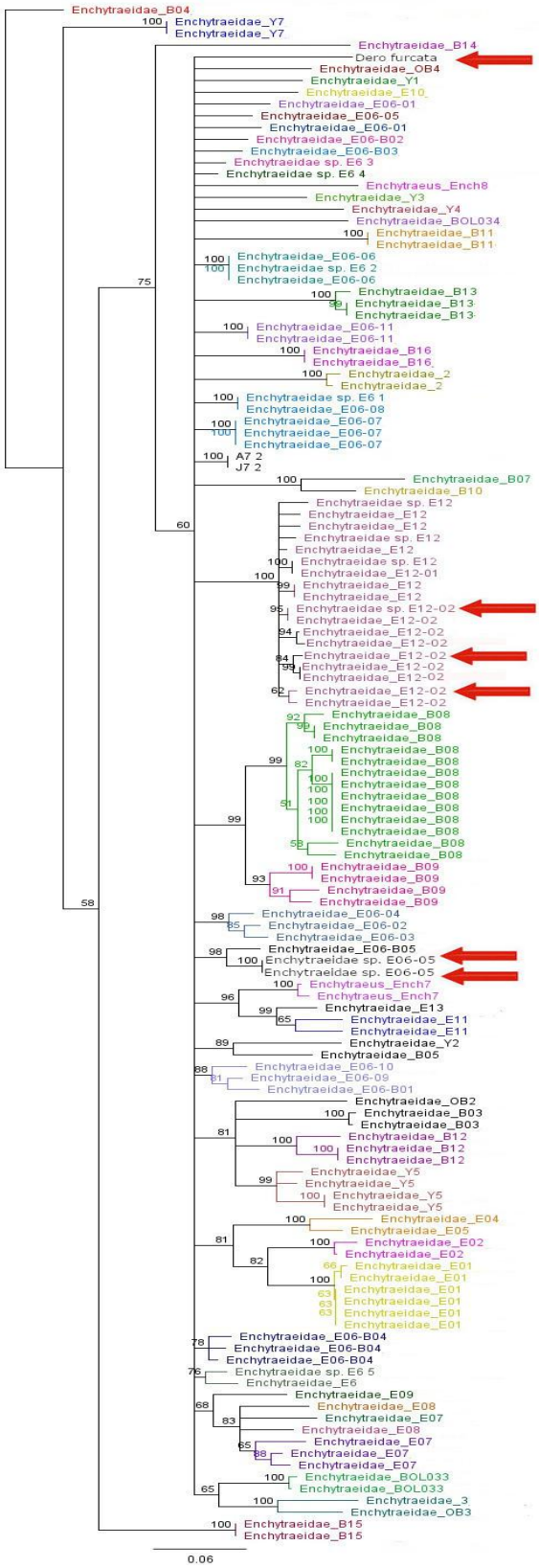


Figure 17: Neighbour joining tree of Enchytraeidae spp. Based on MT-COI

Syncarids

A single specimen of *Atopobathynella* sp. was sequenced. The closest match found (12.2% divergence at COI) was with another specimen designated *Atopobathynella* sp. in the Bennelongia database (Figure 18). As a result, a new species code, *Atopobathynella* `BSY241`, was generated for the specimen collected in the three-phase survey.

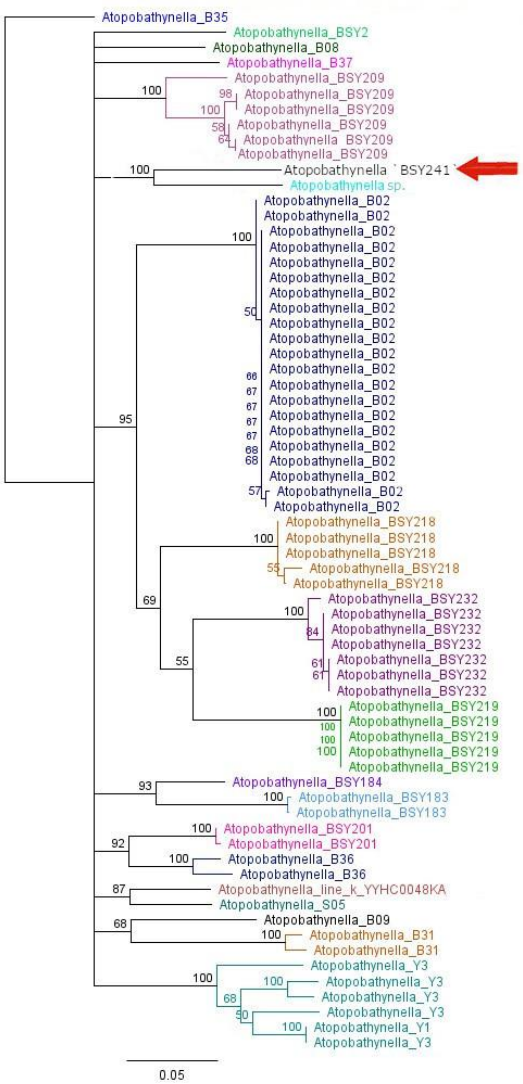


Figure 18: Neighbour joining tree of *Atopobathynella* spp. Based on MT-COI

5. DISCUSSION

Including data from both historical and recent surveys, the Study Area contains subterranean fauna communities of moderate diversity, with 34 species of troglofauna (Appendix 4) and 15 species of stygofauna (Appendix 5).

5.1. Troglofauna in the Study Area

The deposits contained within the Study Area are characterised by weathered and mineralised Brockman Iron Formation, which is highly prospective for troglofauna in particular. Not as many troglofauna species have been collected here as in central Pilbara deposits of comparable size (e.g. Bennelongia 2015), probably because the species richness of troglofauna is generally much lower in the eastern Pilbara than in the central Pilbara (Mokany *et al.* 2017; see Figure 3 for comparisons of species richness in central and eastern Pilbara). Nevertheless, the presence of spiders, pseudoscorpions, and cockroaches suggests a well developed troglofauna community, which is further supported by the fact that 15 of the 34 species of troglofauna (44%) are known only from the Study Area.

The 'restricted' troglofauna species are the pseudoscorpions *Tyrannochthonius* `PSE056` and *Tyrannochthonius* `PSE057`; the isopods *Troglarmadillo* sp. B07, *Troglarmadillo* sp. B09, and nr *Andricophiloscia* `BIS509`; the centipedes *Cryptops* `BSCOL066` and *Cryptops* sp. B09; the pauropods Pauropodidae sp. B05 and *Allopauropus* sp. B02; the symphylans *Symphylella* `BSYM114`, *Hanseniella* sp. B01, *Hanseniella* sp. B04, *Hanseniella* sp. B24, and *Scutigerella* `BSYM113`; and the dipluran Japygidae `BDP192` (Figure 6). The species vary from being singletons to being collected in high numbers, and at multiple locations, within the Study Area (Table 7).

Pseudoscorpiones

Two pseudoscorpion species currently have known distributions restricted to the Stuydy Area. Subterranean pseudoscorpions have highly variable ranges of between 1 and 145994 km^2 (Halse and Pearson 2014) and a median linear range of 5.3 km (Halse 2018b). Halse (2018b) notes that the major habitats for pseudoscopions include mineralised rock and calcrete detritals.

Three specimens of *Tyrannochthonius* `PSE056` were collected across 2008/09 from three bores (Figure 6), each of which intersects the, giving the species a known linear range of 1.1 km. Each of these bores intersect the Brockman Iron Formation, a geology known to be prospective fpr troglofauna and the likely geology from which these animals were collected. The samples were taken from depths ranging from 23-65 m bgl; but as the samples were collected by scraping it is difficult to understand the exact depth of collection.

Tyrannochthonius `PSE057` is represented by five specimens collected from four bores (Figure 6). Three individuals were collected in 2008 while the remaining two were collected in 2020. With a known linear range of 2.8 km, these specimens were collected in scape samples and as by-catch in stygofauna net hauls. The depth to water in these holes ranged from 56 to 63 m bgl at the time of sampling and these bores intersect the Brockman Iron Formation or associated alluvials.

Isopods

Three isopods are currently known only from within the Study Area. Most commonly collected within mineralised rock and calcrete detritals, isopods are believed to have a median linear range of 1.8 km (Halse 2018b). overall ranges for isopods are highly variable, with species having known distributions ranging from 1 to 1462 km^2 (Halse and Pearson 2014).

Despite being collected from only two bores 950 m apart, *Troglarmadillo* sp. B07 is represented in high numbers with a total of 199 specimens collected in 2009. All specimens except one were collected from bore EXR1356 from scrapes and a single trap set at a depth of 19 m bgl. This bore was noted as having

a root mat blockage at 20 m bgl, which likely provided suitable habitat for the species. A single specimen was collected from a scrape sample from bore EXR1568R which had a depth to water of 54 m. These bores intersect the Marra Mamba Formation and neighbouring Aeolian Sands.

The related species *Troglarmadillo* sp. B09 was represented by 40 individuals collected primarily in traps (38/40) and rarely in scrapes (2/40), from eight bores across 2009, 2020, and 2022. The depth of the traps ranged from 5-14 m bgl, giving a likely range of the species' preferred depth. *Troglarmadillo* sp. B09 has a known linear range of 9.5 km and has been collected from bores that intersect the Brockman Iron Formation as well as colluvium and associated geologies.

The isopod nr *Andricophiloscia* `BIS509` was collected as a singleton as by-catch during a stygofauna net haul. This bore had a standing water level of 68 m bgl at the time of sampling and intersects the Brockman Iron Formation.

Centipedes

Two centipede species, both from the genus cryptops have distributions that are currently restricted to the surveys area. Known to inhabit mineralised rock and calcrete detritals, this group of animals has a median linear distribution of 6.2 km (Halse 2018b), and a known distribution ranging from 1 to 2166 km^2.

Two centipedes were collected as singletons. *Cryptops* `BSCOL066` was collected from a bore that was 53 m deep. This individual was collected from a trap positioned 23 m bgl. The bore intersects colluvium that borders outcropping Brockman Iron Formation. The congener *Cryptops* sp. B09 was collected by a trap positioned 40 m bgl in a bore that also intersects the Brockman Iron Formation.

Pauropods

Two Pauropoda taxa were collected as singletons in 2008 / 09 (Bennelongia). Pauropoda have highly variable known species ranges, from as low as 1 and up to 7148 km^2 (Halse and Pearson 2014) and a median linear distribution of 6.6 km (Halse 2018b). Pauropoda are noted as inhabiting detritals and mineralised calcrete rock (Halse 2018b).

Pauropodidae sp. B05 was collected in a scrape sample from a hole that was 20 m deep and did not intersect the water table. This bore intersects the Marra Mamba Formation in the south of the Study Area. *Allopauropus* sp. B02 was collected from a scrape sample in a bore that had a standing water level of 56 m bgl. This bore intersects Aeolian Sand on the northern edge of the Marra Mamba Formation.

Symphylans

Collected predominately from detritals and mineralised calcrete rock, symphylans have relatively low known distributions with a median linear range of 3.2 km (Halse 2018b). despite this, the known distributions of individual species can be highly variuable with known ranges of between 1 and 1368 km^2 (Halse and Pearson 2014).

Five symphylans currently have distributions restricted to the Study Area. *Symphylella* `BSYM114` was collected as by-catch during a stygofauna net haul in a hole drilled to 105 m bgl and a SWL of 53 m. The individual was collected in 2022 in a bore located centrally within the Study Area that intersects colluvium and alluvium. Nine individuals of *Hanseniella* sp. B01 were collected from six bores, providing a known linear distribution of 4.9 km. All nine specimens were collected during scrape sampling in holes that ranged in depth between 38 and 85 m deep. Three of these bores struck water (two at 60 mbgl and one at 80 mbgl) *Hanseniella* sp. B01 was collected primarily in bores that intersected Brockman Iron Formation. Five specimens of *Hanseniella* sp. B04 were collected from three bores, providing a known linear distribution of 5.6 km. All five specimens were collected in scrape samples from maximum depths ranging from 40-50 m bgl. These bores intersect colluvium and alluvium and one of these bores is in close proximity to the Marra Mamba Formation. *Hanseniella* sp. B24 was collected as a singleton from a

scrape sample in a bore 20 m deep. This bore interscts Aeolian Sand marginally to the north of the Marra Mamba Formation. Finally, *Scutigerella* `BSYM113` was also collected a a singleton, from a scrape sample in a bore with a SWL of 65 m bgl. The bore intersects colluvium that lies between two sections of outcropping Brockman Iron Formation.

Diplurans

Diplurans have highly variable known distributions with Halse and Pearson (2014) reporting known ranges of between 1 and 12282 km^2 and Halse (2018b) reporting a known linear range of 4.5 km. Major habitats of diplurans include mineralise drock and calcrete detritals (Halse 2018b).

A single specimen of Japygidae `BDP192` was collected as by-catch from a stygofauna net haul from a hole with a SWL of 68 m bgl. This bore intersects the Brockman Iron Formation, indicating this is the likely host geology for this species.

The moderate richness of the troglofauna community is probably driven primarily by the availability of weathered Banded Iron Formation. Weathering results in vugs and voids and makes the Banded Iron Formation prospective for troglofauna species and communities (Morris 1983). Additionally, the relatively large depth to water also provides ample space for troglofauna, particularly since below ground humidity and temperature is relatively constant and well suited to troglofauna (Moldovan *et al.* 2018).

Geological units suitable for troglofauna follow ridgelines throughout the Study Area and extend beyond its boundaries, particulary to the west (Figure 2). With connectivity of these geologies between the Study Area and the surrounding landscape, it is reasonable to expect that troglofauna species known only from the Study Area in fact have wider distributions than currently documented.

5.2. Styofauna in the Study Area

The stygofauna community in the Study Area has relatively low diversity, especially in comparison with the community hosted in the Ethel Gorge TEC less than 50 km west of the Study Area. Most rich stygofauna communities are dominated by stygobitic crustaceans (Halse 2018b); in the Study Area two thirds of the stygofauna community is composed of species with strong surface affinities, especially among the worms and crustaceans *(*e.g. *Dero nivea*, *Pristina longiseta*, *Microcyclops varicans*, and *Cyprinotus kimberleyensis*). Nevertheless, there are four stygofauna species, all collected as singletons, that are currently known only from the Study Area: the worms Phreodrilidae `BOL084` and Tubificidae `BOL074` and two crustaceans, the copepod *Schizopera* 'BHA285' and the syncarid *Atopobathynella* `BSY241`. Unusually, these four species were collected from a fractured rock aquifer where depth to the water table exceeded 50 m.

Worms, copepods and syncarids are occasionally collected, apparently at low abundance, from deep fractured rock aquifers throughout the Pilbara but explanations of the factors controlling occurrence in this situation are speculative. One possibility is that small numbers of species occur, perhaps in the rock in moderate abundance in a few large fractures that are hydrologically well connected to the surface, so that oxygen, carbon and nutrients are not limiting. These species are rarely collected because very few holes will encounter the populated rock fractures – even holes a few metres from a hole that yielded will not intersect the populated fractures.

Overall, sampling results from the Study Area indicate a stygofauna community that does not have strong conservation values. There are two likely reasons. First, rich stygofauna communities are rarely collected in the Pilbara where the watertable is much further than 30 m below ground level (mbgl; Halse *et al.* 2014). The shallowest depth to watertable in the Study Area was 43 m and most holes had standing water levels of 50-90 mbgl. Second, the Study Area does not contain hydrogeological features that typically support rich stygofauna communities. For example, the Ethel Gorge TEC is associated with the

Sylvania Palaeovalley and connected calcretes (Figure 4), geological features known to support diverse stygofauna communities. Palaeovalleys occur north of the Study Area and marginally intersect its eastern end but do not occur in the majority of the Study Area (Figure 4).

5.3. Conclusion

Taken together, the primary finding of both surveys (2008-2009 and 2020-2022) and the desktop assessment are that there is a troglofauna community of moderate richness in the Study Area and a stygofauna community of low richness. Both findings reflect the geology of the area, and do not appear to be biased by sampling technique or effort.

The surveys identified several species known only from the Study Area. If the four 'restricted' stygofauna species occur only in a small number of significant fractures, documenting their full ranges is likely to be difficult using additional sampling or habitat characterisation. Documenting ranges of the 15 troglofauna species should be easier but occurrence at low abundance reduces the efficiency of field sampling.

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Appendix 1 – Troglofauna species identified during the desktop review

Higher Order Identification	Lowest Identification
Arthropoda	
Arachnida	
Araneae	
Gnaphosidae	
nr *Encoptarthria*	nr *Encoptarthria* sp.
	nr *Encoptarthria* sp. B02
Oonopidae	
Prethopalpus	*Prethopalpus* sp.
	Prethopalpus sp. B22
	Prethopalpus sp. B29
	Prethopalpus sp. B30
Opiliones	
	Opiliones sp. B05
Assamiidae	
Dampetrus	*Dampetrus* sp. B03 (nr *isolatus*)
Palpigradi	Palpigradi sp.
	Palpigradi sp. B01
	Palpigradi sp. B16
	Palpigradi sp. B17
	Palpigradi sp. indet. OB
Eukoeneniidae	
Eukoenenia	*Eukoenenia* sp.
Pseudoscorpiones	
Chthoniidae	
Lagynochthonius	*Lagynochthonius* `PSE040`
	Lagynochthonius `PSE097`
Tyrannochthonius	*Tyrannochthonius* `PSE052`
	Tyrannochthonius `PSE059`
	Tyrannochthonius aridus
	Tyrannochthonius sp. B28
	Tyrannochthonius sp. OP
Scizomida	
Hubbardiidae	
Draculoides	*Draculoides* SCH034
	Draculoides SCH055
	Draculoides SCH067
	Draculoides neoanthropus
Chilopoda	
Geophilida	
Chilenophilidae	Chilenophilidae sp. B08
Schendylidae	
nr *Australoschendyla*	nr *Australoschendyla* sp. B02

Higher Order Identification	Lowest Identification
Scolopendrida	
Cryptopidae	
Cryptops	*Cryptops* sp. B10 (=Scolopendrida sp. S05)
	Cryptops sp. B43
Diplopoda	
Polydesmida	
Dalodesmidae	Dalodesmidae sp. B06
Polyxenida	
Lophoproctidae	Lophoproctidae sp.
Lophoturus	*Lophoturus madecassus*
Spirobolida	
Trigoniulidae	Trigoniulidae sp.
?*Speleostrophus*	?*Speleostrophus* `DIP051`
Entognatha	
Diplura	
Japygidae	Japygidae `BDP154` (DPL002)
	Japygidae `DPL002` s.l.
	Japygidae sp.
Parajapygidae	Parajapygidae `BDP189`
	Parajapygidae sp. B05 (Parajapyx swani group)
Insecta	
Blattodea	
Nocticolidae	
Nocticola	*Nocticola quartermainei* s.l.
	Nocticola sp.
Coleoptera	
Curculionidae	
Curculionidae Genus 1	Curculionidae Genus 1 sp.
	Curculionidae Genus 1 sp. B01
Ptiliidae	
Ptinella	*Ptinella* sp. B01 (=MC)
Rodwayia	*Rodwayia* sp. B01
Staphylinidae	Staphylinidae sp.
	Pselaphinae sp. B01
Diptera	
Sciaridae	Sciaridae sp. B01
Hemiptera	Hemiptera sp.
Cixiidae	Cixiidae sp. B02
Meenoplidae	
Phaconeura	*Phaconeura* sp.
	Phaconeura sp. B03 (winged, remnant eyes)
	Phaconeura sp. B04
Zygentoma	Zygentoma sp.
Nicoletiidae	Nicoletiidae sp.

Higher Order Identification	Lowest Identification
	Atelurinae sp.
	Atelurinae sp. (=?Atelurodes sp.)
	Atelurinae sp. B09
Dodecastyla	*Dodecastyla* sp. B02
Trinemura	*Trinemura* sp.
	Trinemura sp. B13
	Trinemura sp. B26
Malacostraca	
Isopoda	
?Stenoniscidae	?Stenoniscidae sp. OB
Armadillidae	
?*Buddelundia*	?*Buddelundia* sp. B01
Buddelundia	*Buddelundia* sp.
Troglarmadillo	*Troglarmadillo* sp.
	Troglarmadillo sp. B34
	Troglarmadillo sp. B38
	Troglarmadillo sp. B39
	Troglarmadillo sp. B42
	Troglarmadillo sp. B48
	Troglarmadillo sp. B49
	Troglarmadillo sp. B
Philosciidae	
nr *Andricophiloscia*	nr *Andricophiloscia* sp. B17
Stenoniscidae	
Stenoniscidae gen. nov.	Stenoniscidae gen. nov. sp. B01
	Stenoniscidae gen. nov. sp. B06
Pauropoda	Pauropoda sp.
Tetramerocerata	
Pauropodidae	Pauropodidae `BPU097`
	Pauropodidae sp. B01 s.l.
	Pauropodidae sp. B09
	Pauropodidae sp. B28 (B04 group)
	Pauropodidae sp. B32
Decapauropus	*Decapauropus* sp. B04
	Decapauropus sp. B05
Symphyla	Symphyla sp.
Cephalostigmata	
Scolopendrellidae	
Symphylella	*Symphylella* sp.
Scutigerellidae	
Hanseniella	*Hanseniella* sp.
	Hanseniella sp. B19
	Hanseniella sp. B20
	Hanseniella sp. B26

Higher Order Identification	Lowest Identification
	Hanseniella sp. B27

Appendix 2 – Stygofauna species identified during the desktop search

Higher Order Identification	Lowest Identification
Annelida	
Aphanoneura	
Aeolosomatidae	
Aeolosoma	Aeolosoma sp.
	Aeolosoma sp. 1 (PSS)
	Aeolosoma sp. 2 (PSS)
	Aeolosoma sp. OB
Clitellata	Oligochaeta sp.
Enchytraeida	
Enchytraeidae	
	Enchytraeidae `Biota1`
	Enchytraeidae `PST1` s.l. (E06)
	Enchytraeidae sp.
	Enchytraeidae sp. E06-B05
	Enchytraeidae sp. E08
	Enchytraeidae sp. E12
	Enchytraeidae sp. E12-02
	Enchytraeidae sp. OB2
	Enchytraeidae sp. OB3
	Enchytraeidae sp. OB4
Achaeta	Achaeta sp.
Enchytraeus	Enchytraeus sp.
	Enchytraeus sp. AP PSS1 s.l.
	Enchytraeus sp. AP PSS2 s.l.
	Enchytraeidae sp.
Haplotaxida	
Naididae	Naididae sp.
	Naididae sp. N03
Allonais	Allonais pectinata
Dero	Dero (Dero) nivea
Pristina	Pristina aequiseta
	Pristina longiseta
	Pristina sp. OB
Phreodrilidae	
Antarctodrilus	Antarctodrilus sp. OB4
Insulodrilus	Insulodrilus `WA31`
	Insulodrilus sp.
Phreodrilus	Phreodrilus peniculus
	Phreodrilus sp.
	Phreodrilidae sp.
	Phreodrilidae sp. ?P11
	Phreodrilidae sp. AP DVC s.l.

Higher Order Identification	Lowest Identification
	Phreodrilidae sp. AP SVC s.l.
	Phreodrilidae sp. B05
	Phreodrilidae sp. OB2_sp. 4 (OP2)
	Phreodrilidae sp. OB3
	Phreodrilidae sp. P10
	Phreodrilidae sp. P11
	Phreodrilidae sp. P15
	Phreodrilidae sp. WAM indet. 1
	Phreodrilidae_sp._1
	Phreodrilidae_sp._2
	Phreodrilidaesp. OB
Tubificidae	Tubificidae `stygo type 1A`
	Tubificidae `stygo type 4`
	Tubificidae `stygo type 5`
	Tubificidae sp.
Ainudrilus	Ainudrilus sp. WA27 (PSS)
Arthropoda	
Arachnida	
Trombidiformes	
Mideopsidae	
Guineaxonopsis	Guineaxonopsis sp. S01 group (PSS)
Pezidae	
Peza	Peza `ACA001`
Insecta	
Coleoptera	
Dytiscidae	
Limbodessus	Limbodessus sp.
Malacostraca	
Amphipoda	
?Paramelitidae	?Paramelitidae sp.
Melitidae	Melitidae sp.
Paramelitidae	
Chydaekata	Chydaekata `AMP005`
	Chydaekata `E`
	Chydaekata acuminata
	Chydaekata sp.
	Chydaekata sp. OB1_AMP005
Kruptus	Kruptus `AMP004`
Maarrka	Maarrka etheli
	Maarrka sp.
Paramelitidae gen. nov. 1	Paramelitidae gen. nov. 1 `AMP001`
	Paramelitidae gen. nov. 1 `AMP001`/`AMP002`
	Paramelitidae gen. nov. 1 `AMP002`
	Paramelitidae gen. nov. 1 `AMP003`

Higher Order Identification	Lowest Identification
	Paramelitidae sp.
	Paramelitidae sp. 2 s.l. (PSS)
	Paramelitidae sp. B34
	Paramelitidae sp. OB2 AMP001
	Paramelitidae sp. OB2 AMP002
Pilbarus	Pilbarus millsi s.l.
	Pilbarus sp. S01 (PSS)
	Amphipoda sp.
Isopoda	Isopoda sp.
Microcerberidae	
	Microcerberidae sp.
Coxicerberus	Coxicerberus `ISO019`
	Coxicerberus sp. OB2
Tainisopidae	
Pygolabis	Pygolabis humphreysi
	Pygolabis sp.
Spelaeogriphacea	
Spelaeogriphidae	
Mangkurtu	Mangkurtu kutjarra
Syncarida	Syncarida sp.
Bathynellidae	Bathynellidae sp.
Pilbaranella	Pilbaranella `A`
	Pilbaranella `B`
	Pilbaranella `C`
	Pilbaranella ethelensis
	Pilbaranella sp.
	Pilbaranella sp. B12 (=`poss sp. D`)
Parabathynellidae	
Atopobathynella	Atopobathynella sp. B18
Billibathynella	Billibathynella `SYN001`
	Billibathynella cassidis
	Billibathynella sp.
Brevisomabathynella	Brevisomabathynella pilbaraensis
	Brevisomabathynella sp.
Notobathynella	Notobathynella sp.
Maxillopoda	Copepoda sp.
Calanoida	Calanoida sp.
Cyclopoida	Cyclopoida sp.
Cyclopidae	
Anzcyclops	Anzcyclops sp. B06
	Anzcyclops sp. OB
Diacyclops	Diacyclops cockingi
	Diacyclops humphreysi s.l.
	Diacyclops sobeprolatus

Higher Order Identification	Lowest Identification
	Diacyclops sp.
Dussartcyclops	Dussartcyclops sp.
	Dussartcyclops uniarticulatus s.l.
Halicyclops	Halicyclops calm
Mesocyclops	Mesocyclops brooksi
	Mesocyclops notius
	Mesocyclops sp.
Microcyclops	Microcyclops varicans
nr Pilbaracyclops	nr Pilbaracyclops sp. OB
Orbuscyclops	Orbuscyclops westaustraliensis
Pescecyclops	Pescecyclops pilbaricus
Pilbaracyclops	Pilbaracyclops supersensus
Thermocyclops	Thermocyclops aberrans
	Thermocyclops decipiens
	Thermocyclops sp.
Harpacticoida	Harpacticoida sp.
Ameiridae	
Archinitocrella	Archinitocrella newmanensis
Megastygonitocrella	Megastygonitocrella bispinosa
Nitocrella	Nitocrella `ophthalmia`
	Nitocrella karanovici
	Nitocrella sp. 1 (PSS)
	Ameiridae sp.
Canthocamptidae	
Australocamptus	Australocamptus sp. B10
Elaphoidella	Elaphoidella sp.
Parastenocarididae	Parastenocarididae sp.
Parastenocaris	Parastenocaris `COP001`
	Parastenocaris `COP002`
	Parastenocaris jane
	Parastenocaris sp.
Ostracoda	
Podocopida	
Candonidae	Candonidae sp.
	Candoninae sp.
Areacandona	Areacandona `7` (PSS)
	Areacandona mulgae
	Areacandona newmani
	Areacandona nr iuno
	Areacandona scanloni
	Areacandona sp.
Candonopsis	Candonopsis nr tenuis
	Candonopsis sp.
	Candonopsis tenuis

Higher Order Identification	Lowest Identification
Meridiescandona	Meridiescandona `3` (PSS)
	Meridiescandona lucerna
	Meridiescandona nr facies (PSS)
Notacandona	Notacandona `BOS119` (sp. nov.)
	Notacandona gratia
	Notacandona sp.
Origocandona	Origocandona `BOS099`
	Origocandona gratia
	Origocandona grommike
	Origocandona inanitas
Pilbaracandona	Pilbaracandona `OST001`
	Pilbaracandona `OST002`
	Pilbaracandona colonia
	Pilbaracandona eberhardi
	Pilbaracandona kosmos
	Pilbaracandona rhabdote
	Pilbaracandona sp.
	Pilbaracandona temporaria
Cyprididae	Cyprididae sp.
	Cyprinopsinae sp.
Cypretta	Cypretta seurati
	Cypretta sp.
Cypridopsis	Cypridopsis vidua
Cyprinotus	Cyprinotus kimberleyensis s.l.
Ilyodromus	Ilyodromus sp.
Riocypris	Riocypris fitzroyi
Sarscypridopsis	Sarscypridopsis ochracea
Stenocypris	Stenocypris bolieki
	Stenocypris malcolmsoni
Strandesia	Strandesia sp.
Darwinulidae	
	Darwinulidae sp.
Vestalenula	Vestalenula marmonieri
Limnocytheridae	
Gomphodella	Gomphodella hirsuta
Limnocythere	Limnocythere stationis
	Ostracoda sp. unident.
Nematoda	Nematoda sp. 01 (rat-tailed gp) (PSS)
	Nematoda spp.
Platyhelminthes	
Turbellaria	Turbellaria sp.
	Platyhelminthes indet.
Rotifera	
Bdelloidea	Bdelloidea sp. 2:2

Appendix 3 – Bores sampled in two survey periods (2008-2009 and 2020-2022)

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
70R	-23.38772	120.28917	Inside	Stygofauna	2020
CM0038R	-23.39403	120.27125	Inside	Stygofauna	2020
CM0077R	-23.37338	120.27049	Inside	Troglofauna	2020
CM0078R	-23.37247	120.27051	Inside	Stygofauna	2022
CM0089R	-23.36743	120.27054	Inside	Troglofauna	2020
CM0092R	-23.36521	120.2705	Inside	Stygofauna	2022
CM0107R	-23.37178	120.26935	Inside	Troglofauna	2022
CM0119R	-23.37112	120.27204	Inside	Stygofauna	2022
CM0122R	-23.36843	120.27202	Inside	Troglofauna	2022
CM0125R	-23.36616	120.27199	Inside	Stygofauna	2022
CM0129R	-23.37213	120.27493	Inside	Stygofauna	2022
CM0145R	-23.36611	120.27784	Inside	Troglofauna	2022
CM0154R	-23.36614	120.28076	Inside	Stygofauna	2022
CM0156R	-23.37487	120.28361	Inside	Stygofauna	2022
CM0157R	-23.37183	120.28388	Inside	Stygofauna	2022
CM0165R	-23.3649	120.28372	Inside	Troglofauna	2022
CM0169R	-23.37107	120.28664	Inside	Stygofauna	2022
CM0180R	-23.37135	120.28952	Inside	Stygofauna	2022
CM0186R	-23.36532	120.28955	Inside	Troglofauna	2022
CM0196R	-23.36613	120.29251	Inside	Stygofauna	2022
CM0208R	-23.36474	120.29594	Inside	Stygofauna	2022
CM0215R	-23.367	120.29839	Inside	Troglofauna	2022
CM0217R	-23.36519	120.29838	Inside	Stygofauna	2022
CM0232R	-23.36656	120.30427	Inside	Troglofauna	2022
CM0241R	-23.36655	120.30714	Inside	Troglofauna	2022
EBP0056	-23.3354	120.10015	Outside	Troglofauna	2009
EBP0069	-23.33407	120.10602	Outside	Troglofauna	2009
EBP0075	-23.3332	120.11189	Outside	Troglofauna	2009
EBR0003	-23.33223	120.10017	Outside	Troglofauna	2009
EBR0004	-23.3329	120.10016	Outside	Troglofauna	2009
EBR0008	-23.33492	120.09428	Outside	Troglofauna	2009
EBR0011	-23.33317	120.10602	Outside	Troglofauna	2009
EBR0017	-23.33458	120.11775	Outside	Troglofauna	2009
EBR0019	-23.3344	120.08255	Outside	Troglofauna	2009
EBR0021	-23.33401	120.09428	Outside	Troglofauna	2009
EBR0023	-23.33598	120.08254	Outside	Troglofauna	2009
EBR0037	-23.33393	120.11775	Outside	Troglofauna	2009
EJ0523R	-23.37151	120.23986	Inside	Troglofauna	2020
EJ0524R	-23.38353	120.23995	Inside	Troglofauna	2020
EJ0524R	-23.38353	120.23995	Inside	Troglofauna	2022
EJ0530RE	-23.37316	120.24276	Inside	Troglofauna	2020
EJ0532R	-23.38326	120.24547	Inside	Troglofauna	2022

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
EJ0546R	-23.37583	120.24869	Inside	Troglofauna	2020
EJ0573R	-23.36624	120.25625	Inside	Troglofauna	2020
EJ0578R	-23.37356	120.25937	Inside	Stygofauna	2020
EJ0581RE	-23.36812	120.25937	Inside	Stygofauna	2020
EJ0584R	-23.3665	120.25927	Inside	Troglofauna	2020
EJ0585R	-23.37717	120.26221	Inside	Troglofauna	2020
EJ0606R	-23.36801	120.26817	Inside	Troglofauna	2020
EJ0609R	-23.3703	120.24551	Inside	Troglofauna	2020
EJ0618R	-23.37839	120.23147	Inside	Troglofauna	2020
EJ0618R	-23.37839	120.23147	Inside	Troglofauna	2022
EJ0621R	-23.37704	120.23145	Inside	Stygofauna	2022
EJ0637R	-23.377	120.23246	Inside	Stygofauna	2022
EJ0639R	-23.37564	120.23249	Inside	Troglofauna	2020
EJ0639R	-23.37564	120.23249	Inside	Troglofauna	2022
EJ0642R	-23.37288	120.23245	Inside	Troglofauna	2022
EJ0658R	-23.37466	120.23395	Inside	Troglofauna	2020
EJ0658R	-23.37466	120.23395	Inside	Troglofauna	2022
EJ0659R	-23.37429	120.23395	Inside	Troglofauna	2020
EJ0660R	-23.37384	120.23395	Inside	Troglofauna	2020
EJ0660R	-23.37384	120.23395	Inside	Troglofauna	2022
EJ0662R	-23.3831	120.23541	Inside	Troglofauna	2020
EJ0662R	-23.3831	120.23541	Inside	Troglofauna	2022
EJ0678R	-23.37589	120.23538	Inside	Troglofauna	2020
EJ0679R	-23.37543	120.2354	Inside	Troglofauna	2020
EJ0683R	-23.38404	120.23688	Inside	Troglofauna	2020
EJ0683R	-23.38404	120.23688	Inside	Troglofauna	2022
EJ0688R	-23.38086	120.23689	Inside	Troglofauna	2020
EJ0688R	-23.38086	120.23689	Inside	Troglofauna	2022
EJ0724R	-23.37318	120.23837	Inside	Troglofauna	2022
EJ0768R	-23.3746	120.24134	Inside	Troglofauna	2020
EJ0768R	-23.3746	120.24134	Inside	Troglofauna	2022
EJ0771R	-23.38401	120.24276	Inside	Troglofauna	2020
EJ0771R	-23.38401	120.24276	Inside	Troglofauna	2022
EJ0791R	-23.38243	120.24421	Inside	Stygofauna	2020
EJ0792R	-23.382	120.24423	Inside	Stygofauna	2022
EJ0798R	-23.37928	120.24422	Inside	Troglofauna	2020
EJ0798R	-23.37928	120.24422	Inside	Troglofauna	2022
EJ0833R	-23.38312	120.24715	Inside	Stygofauna	2020
EJ0851R	-23.37249	120.24712	Inside	Troglofauna	2022
EJ0868R	-23.38534	120.25007	Inside	Troglofauna	2020
EJ0868R	-23.38534	120.25007	Inside	Troglofauna	2022
EJ0886R	-23.37676	120.25008	Inside	Troglofauna	2020
EJ0889R	-23.37299	120.25007	Inside	Troglofauna	2020
EJ0890R	-23.38675	120.25155	Inside	Troglofauna	2020

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
EJ0890R	-23.38675	120.25155	Inside	Troglofauna	2022
EJ0947R	-23.3717	120.25252	Inside	Troglofauna	2022
EJ0948R	-23.37127	120.25253	Inside	Troglofauna	2020
EJ0948R	-23.37127	120.25253	Inside	Troglofauna	2022
EJ0954R	-23.38615	120.254	Inside	Troglofauna	2022
EJ0956R	-23.38526	120.25403	Inside	Stygofauna	2020
EJ0997R	-23.3829	120.25502	Inside	Troglofauna	2020
EJ0997R	-23.3829	120.25502	Inside	Troglofauna	2022
EJ1011R	-23.37564	120.25498	Inside	Troglofauna	2020
EJ1011R	-23.37564	120.25498	Inside	Troglofauna	2022
EJ1044R	-23.37316	120.2565	Inside	Troglofauna	2022
EJ1051R	-23.3822	120.25794	Inside	Troglofauna	2022
EJ1052R	-23.38129	120.25794	Inside	Troglofauna	2020
EJ1052R	-23.38129	120.25794	Inside	Troglofauna	2022
EJ1073R	-23.3709	120.25791	Inside	Troglofauna	2020
EJ1073R	-23.3709	120.25791	Inside	Troglofauna	2022
EJ1088R	-23.37584	120.25937	Inside	Troglofauna	2020
EJ1088R	-23.37584	120.25937	Inside	Troglofauna	2022
EJ1124R	-23.36823	120.26085	Inside	Troglofauna	2020
EJ1124R	-23.36823	120.26085	Inside	Troglofauna	2022
EJ1144R	-23.37631	120.26379	Inside	Troglofauna	2022
EJ1178R	-23.36908	120.26511	Inside	Stygofauna	2022
EJ1181R	-23.3677	120.26511	Inside	Troglofauna	2022
EJ1185R	-23.37577	120.26666	Inside	Troglofauna	2020
EJ1188R	-23.37437	120.26667	Inside	Troglofauna	2022
EJ1205R	-23.36691	120.26668	Inside	Stygofauna	2022
EJ1208R	-23.36531	120.2667	Inside	Troglofauna	2020
EJ1211R	-23.37406	120.26814	Inside	Troglofauna	2020
EJ1241R	-23.38466	120.2564	Inside	Troglofauna	2020
EJ1241R	-23.38466	120.2564	Inside	Troglofauna	2022
EJ1246R	-23.37833	120.26084	Inside	Troglofauna	2020
EJ1246R	-23.37833	120.26084	Inside	Troglofauna	2022
EJ1249R	-23.38035	120.26378	Inside	Stygofauna	2022
EJ1249R	-23.38035	120.26378	Inside	Troglofauna	2020
EJ1250R	-23.37817	120.26516	Inside	Troglofauna	2020
EJ1251R	-23.37709	120.26821	Inside	Stygofauna	2022
EJ1252R	-23.37836	120.26229	Inside	Troglofauna	2020
EJ1252R	-23.37836	120.26229	Inside	Troglofauna	2022
EJ1254R	-23.36614	120.26081	Inside	Stygofauna	2022
EJ1258R	-23.38205	120.23201	Inside	Troglofauna	2022
EJ1267R	-23.37718	120.23184	Inside	Troglofauna	2022
EJ1275R	-23.37612	120.23247	Inside	Troglofauna	2022
EJ1308R	-23.38278	120.23428	Inside	Troglofauna	2022
EJ1325R	-23.38326	120.23494	Inside	Troglofauna	2022

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
EJ1375R	-23.37654	120.23639	Inside	Troglofauna	2022
EJ1516R	-23.37698	120.24177	Inside	Troglofauna	2022
EJ1521R	-23.37424	120.24174	Inside	Troglofauna	2022
EJ1543R	-23.37318	120.24223	Inside	Troglofauna	2022
EJ1546R	-23.38317	120.24326	Inside	Troglofauna	2022
EJ1566R	-23.38456	120.24374	Inside	Stygofauna	2022
EJ1590R	-23.37154	120.24373	Inside	Troglofauna	2022
EJ1610R	-23.37571	120.24468	Inside	Troglofauna	2022
EJ1688R	-23.3735	120.24669	Inside	Troglofauna	2022
EJ1762R	-23.37885	120.24962	Inside	Troglofauna	2022
EJ1805R	-23.37439	120.25106	Inside	Troglofauna	2022
EJ1877R	-23.38644	120.25354	Inside	Stygofauna	2022
EJ1972R	-23.36804	120.25541	Inside	Troglofauna	2022
EJ2008R	-23.38434	120.25697	Inside	Stygofauna	2022
EJ2090R	-23.37021	120.25836	Inside	Troglofauna	2022
EJ2096R	-23.36701	120.25841	Inside	Troglofauna	2022
EJ2184R	-23.37295	120.26131	Inside	Troglofauna	2022
EJ2225R	-23.36914	120.26276	Inside	Troglofauna	2022
EJ2287R	-23.36784	120.26571	Inside	Troglofauna	2022
EJ2309R	-23.36947	120.2672	Inside	Troglofauna	2022
EJ2315R	-23.3662	120.26718	Inside	Troglofauna	2022
EJ2320R	-23.37054	120.26768	Inside	Troglofauna	2022
EJ2370R	-23.38448	120.2413	Inside	Troglofauna	2022
EJ2371R	-23.38455	120.24081	Inside	Stygofauna	2022
EJ2375R	-23.38087	120.26314	Inside	Troglofauna	2022
EJ2378R	-23.37948	120.26315	Inside	Troglofauna	2022
EJR0001	-23.37969	120.24551	Inside	Troglofauna	2009
EJR0002	-23.37797	120.24555	Inside	Troglofauna	2009
EJR0003	-23.37608	120.24558	Inside	Troglofauna	2009
EJR0004	-23.37433	120.2456	Inside	Troglofauna	2009
EJR0005	-23.38042	120.23988	Inside	Troglofauna	2009
EJR0006	-23.37868	120.23967	Inside	Troglofauna	2009
EJR0013	-23.37577	120.22799	Inside	Stygofauna	2008
EJR0013	-23.37577	120.22799	Inside	Troglofauna	2009
EJR0014	-23.37397	120.22803	Inside	Stygofauna	2008
EJR0014	-23.37397	120.22803	Inside	Troglofauna	2009
EJR0015	-23.37216	120.22807	Inside	Stygofauna	2008
EJR0015	-23.37216	120.22807	Inside	Troglofauna	2009
EJR0016	-23.38039	120.23376	Inside	Troglofauna	2009
EJR0018	-23.37678	120.23384	Inside	Troglofauna	2009
EJR0019	-23.37497	120.23388	Inside	Troglofauna	2009
EJR0022	-23.37247	120.24566	Inside	Troglofauna	2009
EJR0023	-23.37803	120.25337	Inside	Troglofauna	2009
EJR0024	-23.37442	120.25344	Inside	Troglofauna	2009

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
EJR0027	-23.369	120.25355	Inside	Troglofauna	2009
EJR0028	-23.37983	120.25333	Inside	Troglofauna	2009
EJR0029	-23.38163	120.25329	Inside	Troglofauna	2009
EJR0032	-23.37011	120.26526	Inside	Troglofauna	2009
EJR0033	-23.36831	120.2653	Inside	Troglofauna	2009
EJR0034	-23.37282	120.26521	Inside	Troglofauna	2009
EJR0035	-23.37317	120.23391	Inside	Troglofauna	2009
EMS0244	-23.37568	120.16735	Outside	Troglofauna	2008
EMS0259	-23.3791	120.17918	Inside	Troglofauna	2009
EMS0260	-23.37964	120.17917	Inside	Troglofauna	2008
EMS0260	-23.37964	120.17917	Inside	Troglofauna	2009
EMS0390	-23.37689	120.16442	Outside	Troglofauna	2008
EMS0398	-23.37422	120.16643	Outside	Troglofauna	2008
EMS0424	-23.38244	120.12229	Outside	Troglofauna	2008
EMS0461	-23.37816	120.11061	Outside	Troglofauna	2008
EMS0572	-23.38297	120.07873	Outside	Troglofauna	2009
ETP0005	-23.34381	120.07076	Outside	Troglofauna	2009
EXP0011	-23.37057	120.30596	Inside	Troglofauna	2009
EXP0012	-23.386	120.29662	Inside	Troglofauna	2009
EXP0013	-23.3851	120.29664	Inside	Troglofauna	2009
EXP0015	-23.36837	120.30593	Inside	Troglofauna	2009
EXP0016	-23.36644	120.31322	Inside	Troglofauna	2009
EXP0018	-23.38284	120.29668	Inside	Troglofauna	2009
EXP0038	-23.36561	120.27787	Inside	Troglofauna	2009
EXP0039	-23.36401	120.28367	Inside	Troglofauna	2009
EXR0283	-23.36945	120.27805	Inside	Troglofauna	2009
EXR0388	-23.37069	120.27221	Inside	Troglofauna	2009
EXR0389	-23.37144	120.27227	Inside	Troglofauna	2009
EXR0423	-23.36772	120.30596	Inside	Troglofauna	2009
EXR0424	-23.36692	120.30615	Inside	Troglofauna	2009
EXR0425	-23.36619	120.30627	Inside	Troglofauna	2009
EXR0426	-23.36559	120.30648	Inside	Troglofauna	2009
EXR0427	-23.36741	120.31274	Inside	Troglofauna	2009
EXR0572	-23.36645	120.33842	Inside	Troglofauna	2009
EXR0579	-23.36963	120.27224	Inside	Troglofauna	2009
EXR0580	-23.36873	120.27213	Inside	Troglofauna	2009
EXR0585	-23.36749	120.27214	Inside	Troglofauna	2009
EXR0626	-23.36605	120.3331	Inside	Troglofauna	2009
EXR0627	-23.36496	120.33263	Inside	Troglofauna	2009
EXR0628	-23.36868	120.31301	Inside	Troglofauna	2009
EXR0632	-23.36579	120.30129	Inside	Troglofauna	2009
EXR0633	-23.36479	120.30123	Inside	Troglofauna	2009
EXR0797	-23.36511	120.3066	Inside	Troglofauna	2009
EXR0798	-23.38574	120.28925	Inside	Troglofauna	2009

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
EXR0799	-23.38702	120.28918	Inside	Troglofauna	2009
EXR0800	-23.3847	120.2893	Inside	Troglofauna	2009
EXR0801	-23.38427	120.30115	Inside	Troglofauna	2009
EXR0803	-23.38337	120.30117	Inside	Troglofauna	2009
EXR0811	-23.38562	120.28396	Inside	Troglofauna	2009
EXR1108	-23.3883	120.33075	Inside	Troglofauna	2009
EXR1180	-23.36493	120.32613	Inside	Troglofauna	2009
EXR1354	-23.38818	120.3216	Inside	Troglofauna	2009
EXR1356	-23.38675	120.32154	Inside	Troglofauna	2009
EXR1357	-23.38776	120.33081	Inside	Troglofauna	2009
EXR1358	-23.3899	120.34499	Inside	Troglofauna	2009
EXR1361	-23.38731	120.33082	Inside	Troglofauna	2009
EXR1447R	-23.38972	120.27791	Inside	Troglofauna	2009
EXR1448RT	-23.38702	120.28357	Inside	Troglofauna	2009
EXR1449R	-23.3878	120.28342	Inside	Troglofauna	2009
EXR1458R	-23.3864	120.3308	Inside	Troglofauna	2009
EXR1461R	-23.38804	120.33911	Inside	Troglofauna	2009
EXR1462R	-23.39106	120.35093	Inside	Troglofauna	2009
EXR1555R	-23.39445	120.27136	Inside	Troglofauna	2009
EXR1562R	-23.38809	120.28923	Inside	Troglofauna	2009
EXR1563R	-23.38622	120.30669	Inside	Troglofauna	2009
EXR1566R	-23.38917	120.32747	Inside	Troglofauna	2009
EXR1567R	-23.38941	120.33065	Inside	Troglofauna	2009
EXR1568R	-23.38886	120.33058	Inside	Troglofauna	2009
EXR1569R	-23.38891	120.33337	Inside	Troglofauna	2009
EXR1571R	-23.38924	120.33337	Inside	Troglofauna	2009
FG0557	-23.37427	120.14188	Outside	Troglofauna	2008
FG0560	-23.3742	120.14344	Outside	Troglofauna	2008
FG0632	-23.37494	120.1423	Outside	Troglofauna	2008
FG0633	-23.37433	120.1423	Outside	Troglofauna	2008
FG0673	-23.37773	120.1339	Outside	Troglofauna	2008
FG0678	-23.3754	120.14337	Outside	Troglofauna	2008
FG0679	-23.37485	120.14291	Outside	Troglofauna	2008
FG0984	-23.37414	120.14161	Outside	Troglofauna	2008
FG0985	-23.3738	120.14244	Outside	Troglofauna	2008
FG1085	-23.37831	120.14633	Outside	Troglofauna	2008
FG1089	-23.37928	120.14778	Outside	Troglofauna	2008
FG1090	-23.37972	120.14729	Outside	Troglofauna	2008
FG1093	-23.37381	120.1435	Outside	Troglofauna	2008
FG1100	-23.3744	120.14299	Outside	Troglofauna	2008
FG1101	-23.37479	120.14342	Outside	Troglofauna	2008
FG1284	-23.37443	120.10486	Outside	Troglofauna	2008
FG1303	-23.37541	120.10484	Outside	Troglofauna	2008
FG1304	-23.37488	120.1058	Outside	Stygofauna	2008

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
FG1304	-23.37488	120.1058	Outside	Stygofauna	2009
FG1310	-23.37716	120.10384	Outside	Stygofauna	2009
FG1311	-23.37805	120.10385	Outside	Stygofauna	2009
FG1312	-23.37888	120.10379	Outside	Stygofauna	2008
FG1312	-23.37888	120.10379	Outside	Stygofauna	2009
FG1318	-23.37812	120.10964	Outside	Stygofauna	2009
FG1322	-23.37725	120.11065	Outside	Troglofauna	2008
FG1323	-23.37999	120.1086	Outside	Troglofauna	2008
FG1343	-23.37617	120.10486	Outside	Stygofauna	2009
FG1359	-23.37636	120.11073	Outside	Stygofauna	2008
FG1359	-23.37636	120.11073	Outside	Stygofauna	2009
FG1359	-23.37636	120.11073	Outside	Troglofauna	2008
FG1363	-23.37545	120.1116	Outside	Troglofauna	2008
FG1616R	-23.37721	120.10282	Outside	Stygofauna	2008
FG1616R	-23.37721	120.10282	Outside	Stygofauna	2009
FG1618R	-23.37903	120.10276	Outside	Stygofauna	2008
FG1618R	-23.37903	120.10276	Outside	Stygofauna	2009
FG1697R	-23.37571	120.07652	Outside	Stygofauna	2008
FG1697R	-23.37571	120.07652	Outside	Troglofauna	2008
FG1701R	-23.37031	120.07657	Outside	Troglofauna	2009
FG1717R	-23.37395	120.07351	Outside	Stygofauna	2008
FG1718R	-23.36936	120.07359	Outside	Stygofauna	2008
FG1718R	-23.36936	120.07359	Outside	Stygofauna	2009
FG1762R	-23.37638	120.16255	Outside	Stygofauna	2008
FG1762R	-23.37638	120.16255	Outside	Troglofauna	2008
FG1771R	-23.36792	120.09276	Outside	Troglofauna	2008
FG1786R	-23.36481	120.09574	Outside	Troglofauna	2008
FG1786R	-23.36481	120.09574	Outside	Troglofauna	2009
FG1790DT	-23.36656	120.09726	Outside	Troglofauna	2009
FG1860R	-23.38094	120.1674	Outside	Troglofauna	2008
FG1860R	-23.38094	120.1674	Outside	Troglofauna	2009
FG1879R	-23.3695	120.08094	Outside	Troglofauna	2008
FG1883R	-23.36561	120.08982	Outside	Troglofauna	2008
FG1885R	-23.36733	120.08394	Outside	Troglofauna	2008
FG1889R	-23.36908	120.08391	Outside	Stygofauna	2008
FG1912R	-23.36984	120.07811	Outside	Stygofauna	2008
FG1912R	-23.36984	120.07811	Outside	Stygofauna	2009
FG1912R	-23.36984	120.07811	Outside	Troglofauna	2009
FG1914R	-23.36906	120.07805	Outside	Stygofauna	2008
FG1914R	-23.36906	120.07805	Outside	Stygofauna	2009
FG1914R	-23.36906	120.07805	Outside	Troglofauna	2009
FG1921R	-23.37173	120.07949	Outside	Troglofauna	2008
FG1938R	-23.3685	120.10007	Outside	Troglofauna	2009
FG2024R	-23.37697	120.07935	Outside	Stygofauna	2008

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
FG2024R	-23.37697	120.07935	Outside	Stygofauna	2009
FG2026R	-23.3788	120.0793	Outside	Stygofauna	2008
FG2026R	-23.3788	120.0793	Outside	Stygofauna	2009
FG2027R	-23.37971	120.07922	Outside	Stygofauna	2008
FG2041R	-23.36559	120.09141	Outside	Troglofauna	2008
FG2060R	-23.3712	120.078	Outside	Troglofauna	2009
FG2100R	-23.37737	120.16739	Outside	Troglofauna	2008
FG2104R	-23.37918	120.16736	Outside	Stygofauna	2008
FG2104R	-23.37918	120.16736	Outside	Troglofauna	2008
FG2105R	-23.37466	120.16559	Outside	Troglofauna	2008
FG2106R	-23.3801	120.16734	Outside	Troglofauna	2008
FG2109R	-23.37637	120.16542	Outside	Stygofauna	2008
FG2150R	-23.37094	120.13726	Outside	Stygofauna	2008
FG2170R	-23.37917	120.12787	Outside	Troglofauna	2008
FG2178R	-23.37651	120.16535	Outside	Troglofauna	2008
FG2180R	-23.39428	120.1983	Inside	Troglofauna	2008
FG2185R	-23.39559	120.17466	Inside	Stygofauna	2008
FG2185R	-23.39559	120.17466	Inside	Troglofauna	2008
FG2186R	-23.39468	120.17467	Inside	Stygofauna	2008
FG2187R	-23.39378	120.17478	Inside	Stygofauna	2008
FG2188R	-23.39288	120.17482	Inside	Stygofauna	2008
FG2188R	-23.39288	120.17482	Inside	Troglofauna	2008
FG2190R	-23.39691	120.15127	Outside	Stygofauna	2008
FG2190R	-23.39691	120.15127	Outside	Troglofauna	2008
FG2192R	-23.39511	120.15147	Outside	Troglofauna	2008
FG2193R	-23.39418	120.15144	Outside	Troglofauna	2008
FG2194R	-23.39161	120.05752	Outside	Troglofauna	2008
FG2195R	-23.39068	120.05754	Outside	Stygofauna	2008
FG2196R	-23.3898	120.05755	Outside	Troglofauna	2008
FG2200R	-23.39388	120.08093	Outside	Stygofauna	2008
FG2200R	-23.39388	120.08093	Outside	Troglofauna	2008
FG2201R	-23.39296	120.08096	Outside	Stygofauna	2008
FG2201R	-23.39296	120.08096	Outside	Troglofauna	2008
FG2202R	-23.3961	120.10443	Outside	Troglofauna	2008
FG2203R	-23.39518	120.10439	Outside	Stygofauna	2008
FG2204R	-23.39429	120.10441	Outside	Stygofauna	2008
FG2204R	-23.39429	120.10441	Outside	Troglofauna	2008
FG2205R	-23.39341	120.10443	Outside	Troglofauna	2008
FG2206R	-23.3965	120.12775	Outside	Troglofauna	2008
FG2206R	-23.3965	120.12775	Outside	Troglofauna	2009
FG2207R	-23.39607	120.12783	Outside	Stygofauna	2008
FG2207R	-23.39607	120.12783	Outside	Troglofauna	2008
FG2208R	-23.39517	120.12786	Outside	Stygofauna	2008
FG2208R	-23.39517	120.12786	Outside	Troglofauna	2008

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
FG2211R	-23.39425	120.12781	Outside	Stygofauna	2008
FG2212R	-23.39567	120.10438	Outside	Stygofauna	2008
FG2212R	-23.39567	120.10438	Outside	Troglofauna	2008
FG2213R	-23.39473	120.10441	Outside	Stygofauna	2008
FG2214R	-23.39386	120.10443	Outside	Stygofauna	2008
FG2214R	-23.39386	120.10443	Outside	Troglofauna	2008
FG2216R	-23.3942	120.17474	Inside	Troglofauna	2008
FG2217R	-23.39331	120.1748	Inside	Stygofauna	2008
FG2218R	-23.39605	120.17187	Inside	Stygofauna	2008
FG2219R	-23.39508	120.17179	Inside	Stygofauna	2008
FG2219R	-23.39508	120.17179	Inside	Troglofauna	2008
FG2220R	-23.39462	120.17181	Inside	Stygofauna	2008
FG2222R	-23.39466	120.15152	Outside	Stygofauna	2008
FG2223R	-23.39028	120.05753	Outside	Stygofauna	2008
FG2225R	-23.38894	120.05758	Outside	Stygofauna	2008
FG2225R	-23.38894	120.05758	Outside	Troglofauna	2008
FG2226R	-23.38794	120.05758	Outside	Troglofauna	2008
FG2226R	-23.38794	120.05758	Outside	Troglofauna	2009
FG2227R	-23.38712	120.0576	Outside	Stygofauna	2008
FG2227R	-23.38712	120.0576	Outside	Troglofauna	2008
FG2227R	-23.38712	120.0576	Outside	Troglofauna	2009
FG2228R	-23.3875	120.05759	Outside	Troglofauna	2008
FG2228R	-23.3875	120.05759	Outside	Troglofauna	2009
FG2229R	-23.38841	120.05755	Outside	Stygofauna	2008
FG2229R	-23.38841	120.05755	Outside	Troglofauna	2008
FG2229R	-23.38841	120.05755	Outside	Troglofauna	2009
FG2231R	-23.39202	120.08099	Outside	Stygofauna	2008
FG2231R	-23.39202	120.08099	Outside	Troglofauna	2008
FG2232R	-23.39117	120.08101	Outside	Troglofauna	2008
FG2232R	-23.39117	120.08101	Outside	Troglofauna	2009
FG2233R	-23.39026	120.08104	Outside	Troglofauna	2008
FG2234R	-23.39373	120.1718	Inside	Stygofauna	2008
FG2234R	-23.39373	120.1718	Inside	Troglofauna	2008
FG2234R	-23.39373	120.1718	Inside	Troglofauna	2009
FG2236R	-23.39647	120.17186	Inside	Stygofauna	2008
FG2236R	-23.39647	120.17186	Inside	Troglofauna	2008
FG2236R	-23.39647	120.17186	Inside	Troglofauna	2009
FG2275R	-23.37995	120.13039	Outside	Troglofauna	2008
FG2279R	-23.37943	120.12109	Outside	Stygofauna	2009
FG2311R	-23.38096	120.11309	Outside	Stygofauna	2008
FG2311R	-23.38096	120.11309	Outside	Stygofauna	2009
FG2312R	-23.38093	120.11189	Outside	Troglofauna	2008
FG2316R	-23.37634	120.1131	Outside	Stygofauna	2009
FG2318R	-23.37912	120.11262	Outside	Stygofauna	2009

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
FG2318R	-23.37912	120.11262	Outside	Troglofauna	2008
FG2319R	-23.38005	120.11301	Outside	Stygofauna	2009
FG2319R	-23.38005	120.11301	Outside	Troglofauna	2008
FG2322R	-23.37731	120.11251	Outside	Troglofauna	2008
FG2324R	-23.37912	120.11104	Outside	Troglofauna	2008
FG2325R	-23.37743	120.11505	Outside	Stygofauna	2008
FG2327R	-23.38014	120.11489	Outside	Stygofauna	2008
FG2334R	-23.37659	120.11213	Outside	Stygofauna	2008
FG2338R	-23.37882	120.11554	Outside	Stygofauna	2008
FG2339R	-23.39212	120.1866	Inside	Stygofauna	2008
FG2339R	-23.39212	120.1866	Inside	Troglofauna	2008
FG2340R	-23.39268	120.18666	Inside	Stygofauna	2008
FG2341R	-23.39314	120.18662	Inside	Stygofauna	2008
FG2342R	-23.39358	120.18658	Inside	Troglofauna	2008
FG2343R	-23.39393	120.18659	Inside	Stygofauna	2008
FG2344R	-23.39445	120.18654	Inside	Stygofauna	2008
FG2345R	-23.39493	120.18655	Inside	Stygofauna	2008
FG2345R	-23.39493	120.18655	Inside	Troglofauna	2008
FG2346R	-23.39359	120.16316	Outside	Troglofauna	2008
FG2346R	-23.39359	120.16316	Outside	Troglofauna	2009
FG2347R	-23.39712	120.16302	Outside	Troglofauna	2008
FG2348R	-23.39671	120.16309	Outside	Stygofauna	2008
FG2350R	-23.3958	120.16311	Outside	Troglofauna	2008
FG2352R	-23.3949	120.16313	Outside	Stygofauna	2008
FG2353R	-23.39446	120.16315	Outside	Troglofauna	2008
FG2353R	-23.39446	120.16315	Outside	Troglofauna	2009
FG2356R	-23.39626	120.13956	Outside	Troglofauna	2008
FG2357R	-23.39489	120.13967	Outside	Troglofauna	2008
FG2358R	-23.3968	120.09262	Outside	Troglofauna	2008
FG2360R	-23.39592	120.09266	Outside	Stygofauna	2008
FG2360R	-23.39592	120.09266	Outside	Troglofauna	2008
FG2361R	-23.39549	120.09264	Outside	Stygofauna	2008
FG2362R	-23.39501	120.09268	Outside	Troglofauna	2008
FG2364R	-23.39411	120.09269	Outside	Troglofauna	2008
FG2365R	-23.39455	120.06923	Outside	Troglofauna	2008
FG2365R	-23.39455	120.06923	Outside	Troglofauna	2009
FG2366R	-23.39409	120.06921	Outside	Stygofauna	2008
FG2368R	-23.3932	120.06923	Outside	Troglofauna	2008
FG2371R	-23.39186	120.06928	Outside	Troglofauna	2008
FG2374R	-23.39406	120.11612	Outside	Troglofauna	2008
FG2375R	-23.39364	120.11613	Outside	Stygofauna	2008
FG2375R	-23.39364	120.11613	Outside	Troglofauna	2008
FG2379R	-23.39183	120.11623	Outside	Troglofauna	2008
FG2380R	-23.39225	120.11622	Outside	Troglofauna	2008

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
FG2381R	-23.3927	120.1162	Outside	Stygofauna	2008
FG2381R	-23.3927	120.1162	Outside	Troglofauna	2008
FG2382RDT	-23.39565	120.08078	Outside	Troglofauna	2008
FG2384RDT	-23.39381	120.12782	Outside	Troglofauna	2008
FG2385R	-23.39315	120.1162	Outside	Stygofauna	2008
FG2386R	-23.39007	120.06931	Outside	Troglofauna	2008
FG2469R	-23.37715	120.10193	Outside	Stygofauna	2008
FG2469R	-23.37715	120.10193	Outside	Stygofauna	2009
FG2491R	-23.37908	120.10958	Outside	Stygofauna	2009
FG2509RDT	-23.36465	120.09712	Outside	Troglofauna	2009
HCM0005	-23.38236	120.27265	Inside	Stygofauna	2020
HCM0007	-23.37777	120.2829	Inside	Stygofauna	2020
HCM0008	-23.37779	120.28251	Inside	Stygofauna	2020
HCM0009	-23.37809	120.28348	Inside	Stygofauna	2020
HCM0010	-23.36883	120.28417	Inside	Stygofauna	2020
HCM0011	-23.38217	120.30026	Inside	Stygofauna	2020
HCM0011	-23.38217	120.30026	Inside	Stygofauna	2022
HCM0012	-23.38189	120.30145	Inside	Stygofauna	2020
HCM0016	-23.37753	120.30176	Inside	Stygofauna	2020
HCM0017	-23.37747	120.30244	Inside	Stygofauna	2020
HCM0018	-23.38578	120.28366	Inside	Stygofauna	2020
HCM0021	-23.38584	120.27809	Inside	Stygofauna	2020
HCM0022	-23.38581	120.27856	Inside	Stygofauna	2020
HCM0022	-23.38581	120.27856	Inside	Stygofauna	2022
HCM0025	-23.38592	120.31118	Inside	Stygofauna	2020
HCM0027	-23.38129	120.29315	Inside	Stygofauna	2020
HCM0029	-23.37983	120.26692	Inside	Stygofauna	2020
HCM0031	-23.3724	120.27776	Inside	Stygofauna	2022
HCM0034	-23.36725	120.29092	Inside	Stygofauna	2020
HCM0037	-23.38536	120.29481	Inside	Stygofauna	2020
HCM0039	-23.38575	120.2779	Inside	Stygofauna	2022
HCM0040	-23.38111	120.29305	Inside	Stygofauna	2020
HCM0049	-23.38451	120.34181	Inside	Stygofauna	2022
HCM0051	-23.38825	120.36578	Inside	Stygofauna	2022
HCM0052	-23.38583	120.38686	Inside	Stygofauna	2022
HCM0053	-23.38579	120.32157	Inside	Stygofauna	2022
HCM0055	-23.38867	120.35378	Inside	Stygofauna	2022
HCM0058	-23.3701	120.27002	Inside	Stygofauna	2022
HCM0060	-23.36455	120.32824	Inside	Stygofauna	2022
HCM0061	-23.36813	120.32834	Inside	Stygofauna	2022
HCM0062	-23.38002	120.32896	Inside	Stygofauna	2022
HCM0063	-23.3895	120.39674	Inside	Stygofauna	2022
HCM0064	-23.38998	120.40837	Inside	Stygofauna	2022
HEJ0043	-23.38772	120.24018	Inside	Stygofauna	2022

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
HH003	-23.36772	120.19725	Inside	Troglofauna	2008
HH003	-23.36772	120.19725	Inside	Troglofauna	2009
HH004	-23.36783	120.19809	Inside	Troglofauna	2008
HH004	-23.36783	120.19809	Inside	Troglofauna	2009
HH0110R	-23.37568	120.17526	Inside	Stygofauna	2008
HH0111R	-23.37569	120.17426	Inside	Stygofauna	2008
HH0114R	-23.37301	120.17427	Inside	Troglofauna	2008
HH0114R	-23.37301	120.17427	Inside	Troglofauna	2009
HH0115R	-23.37222	120.17526	Inside	Stygofauna	2008
HH0115R	-23.37222	120.17526	Inside	Troglofauna	2008
HH0116R	-23.37212	120.17431	Inside	Stygofauna	2008
HH0116R	-23.37212	120.17431	Inside	Troglofauna	2008
HH0116R	-23.37212	120.17431	Inside	Troglofauna	2009
HH0117R	-23.37123	120.17431	Inside	Stygofauna	2008
HH0117R	-23.37123	120.17431	Inside	Troglofauna	2008
HH0117R	-23.37123	120.17431	Inside	Troglofauna	2009
HH0118R	-23.37018	120.17447	Inside	Stygofauna	2008
HH0118R	-23.37018	120.17447	Inside	Troglofauna	2008
HH0118R	-23.37018	120.17447	Inside	Troglofauna	2009
HH0119R	-23.36939	120.17443	Inside	Stygofauna	2008
HH0119R	-23.36939	120.17443	Inside	Troglofauna	2008
HH0119R	-23.36939	120.17443	Inside	Troglofauna	2009
HH012	-23.3698	120.20112	Inside	Troglofauna	2008
HH012	-23.3698	120.20112	Inside	Troglofauna	2009
HH0120R	-23.37221	120.18024	Inside	Troglofauna	2008
HH0120R	-23.37221	120.18024	Inside	Troglofauna	2009
HH0121R	-23.36958	120.18224	Inside	Troglofauna	2008
HH0121R	-23.36958	120.18224	Inside	Troglofauna	2009
HH0124R	-23.37134	120.20706	Inside	Stygofauna	2008
HH0124R	-23.37134	120.20706	Inside	Troglofauna	2008
HH0124R	-23.37134	120.20706	Inside	Troglofauna	2009
HH0125R	-23.37047	120.2071	Inside	Stygofauna	2008
HH0126R	-23.36954	120.20715	Inside	Troglofauna	2008
HH0126R	-23.36954	120.20715	Inside	Troglofauna	2009
HH0127R	-23.36863	120.20713	Inside	Stygofauna	2008
HH0127R	-23.36863	120.20713	Inside	Troglofauna	2008
HH0127R	-23.36863	120.20713	Inside	Troglofauna	2009
HH0129R	-23.36719	120.20425	Inside	Troglofauna	2008
HH0129R	-23.36719	120.20425	Inside	Troglofauna	2009
HH013	-23.3689	120.20112	Inside	Troglofauna	2008
HH013	-23.3689	120.20112	Inside	Troglofauna	2009
HH0131R	-23.37249	120.21592	Inside	Stygofauna	2008
HH0131R	-23.37249	120.21592	Inside	Troglofauna	2008
HH0131R	-23.37249	120.21592	Inside	Troglofauna	2009

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
HH0132R	-23.37324	120.21587	Inside	Stygofauna	2008
HH0132R	-23.37324	120.21587	Inside	Troglofauna	2008
HH0132R	-23.37324	120.21587	Inside	Troglofauna	2009
HH0137R	-23.37291	120.21313	Inside	Stygofauna	2008
HH0137R	-23.37291	120.21313	Inside	Troglofauna	2008
HH0137R	-23.37291	120.21313	Inside	Troglofauna	2009
HH0138R	-23.37188	120.21291	Inside	Troglofauna	2008
HH0138R	-23.37188	120.21291	Inside	Troglofauna	2009
HH0139R	-23.37016	120.21304	Inside	Stygofauna	2008
HH0139R	-23.37016	120.21304	Inside	Troglofauna	2008
HH0139R	-23.37016	120.21304	Inside	Troglofauna	2009
HH0140R	-23.37095	120.21296	Inside	Troglofauna	2008
HH0140R	-23.37095	120.21296	Inside	Troglofauna	2009
HH0141R	-23.37122	120.21004	Inside	Troglofauna	2008
HH0141R	-23.37122	120.21004	Inside	Troglofauna	2009
HH0143R	-23.36967	120.21008	Inside	Troglofauna	2008
HH0143R	-23.36967	120.21008	Inside	Troglofauna	2009
HH0153R	-23.3718	120.18708	Inside	Troglofauna	2008
HH0153R	-23.3718	120.18708	Inside	Troglofauna	2009
HH0154R	-23.37106	120.18704	Inside	Troglofauna	2008
HH0154R	-23.37106	120.18704	Inside	Troglofauna	2009
HH0155R	-23.37	120.18704	Inside	Troglofauna	2008
HH0155R	-23.37	120.18704	Inside	Troglofauna	2009
HH0156R	-23.37041	120.18412	Inside	Troglofauna	2008
HH0157R	-23.3718	120.20418	Inside	Stygofauna	2008
HH0158R	-23.37089	120.20428	Inside	Stygofauna	2008
HH0158R	-23.37089	120.20428	Inside	Troglofauna	2008
HH0158R	-23.37089	120.20428	Inside	Troglofauna	2009
HH0160R	-23.36898	120.20428	Inside	Stygofauna	2008
HH0160R	-23.36898	120.20428	Inside	Troglofauna	2008
HH0160R	-23.36898	120.20428	Inside	Troglofauna	2009
HH0161R	-23.3681	120.20419	Inside	Troglofauna	2008
HH0161R	-23.3681	120.20419	Inside	Troglofauna	2009
HH0162R	-23.3687	120.21012	Inside	Troglofauna	2008
HH0162R	-23.3687	120.21012	Inside	Troglofauna	2009
HH022	-23.36737	120.19621	Inside	Stygofauna	2008
HH025	-23.36442	120.19619	Inside	Troglofauna	2008
HH025	-23.36442	120.19619	Inside	Troglofauna	2009
HH032	-23.36704	120.20024	Inside	Troglofauna	2008
HH032	-23.36704	120.20024	Inside	Troglofauna	2009
HH033	-23.36755	120.20024	Inside	Troglofauna	2008
HH033	-23.36755	120.20024	Inside	Troglofauna	2009
HH034	-23.36557	120.20026	Inside	Troglofauna	2008
HH034	-23.36557	120.20026	Inside	Troglofauna	2009

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
HH035	-23.36836	120.19532	Inside	Troglofauna	2009
HH036	-23.36659	120.19528	Inside	Stygofauna	2008
HH037	-23.36569	120.19528	Inside	Troglofauna	2009
HH038	-23.3647	120.19531	Inside	Troglofauna	2009
HH045	-23.36882	120.19625	Inside	Troglofauna	2009
HH045A	-23.36873	120.19625	Inside	Troglofauna	2009
HH046	-23.36857	120.19914	Inside	Troglofauna	2008
HH046	-23.36857	120.19914	Inside	Troglofauna	2009
HH0478R	-23.36377	120.18721	Inside	Stygofauna	2020
HH049	-23.36652	120.20026	Inside	Troglofauna	2008
HH049	-23.36652	120.20026	Inside	Troglofauna	2009
HH050	-23.36604	120.20116	Inside	Troglofauna	2008
HH050	-23.36604	120.20116	Inside	Troglofauna	2009
HH051	-23.36695	120.20115	Inside	Troglofauna	2008
HH051	-23.36695	120.20115	Inside	Troglofauna	2009
HH052	-23.36518	120.20118	Inside	Troglofauna	2008
HH052	-23.36518	120.20118	Inside	Troglofauna	2009
HH0520R	-23.36746	120.18957	Inside	Troglofauna	2020
HH062	-23.36517	120.2021	Inside	Troglofauna	2008
HH062	-23.36517	120.2021	Inside	Troglofauna	2009
HH0719R	-23.36565	120.18928	Inside	Stygofauna	2020
HH0854R	-23.37666	120.19711	Inside	Troglofauna	2020
HH0855R	-23.37843	120.19708	Inside	Troglofauna	2020
HH0856R	-23.3839	120.2063	Inside	Troglofauna	2020
HH0857R	-23.38212	120.20641	Inside	Troglofauna	2020
HH0858R	-23.38077	120.20637	Inside	Troglofauna	2020
HH0859R	-23.38585	120.20616	Inside	Troglofauna	2020
HH0880R	-23.38596	120.2142	Inside	Troglofauna	2020
HH0881R	-23.38759	120.21417	Inside	Troglofauna	2020
HH104	-23.36929	120.19613	Inside	Troglofauna	2009
HH106	-23.36533	120.19811	Inside	Troglofauna	2008
HH106	-23.36533	120.19811	Inside	Troglofauna	2009
HH1250R	-23.36496	120.19202	Inside	Troglofauna	2020
HH1261R	-23.36579	120.19246	Inside	Troglofauna	2020
HH1264R	-23.36549	120.19152	Inside	Troglofauna	2020
HH1267R	-23.36402	120.19	Inside	Stygofauna	2020
HH1272R	-23.36256	120.18994	Inside	Stygofauna	2020
HH1519R	-23.36632	120.19189	Inside	Stygofauna	2020
HH1522R	-23.36427	120.19341	Inside	Troglofauna	2020
HH1524R	-23.3626	120.19337	Inside	Troglofauna	2020
HH1525R	-23.36386	120.1929	Inside	Stygofauna	2020
HH1545R	-23.36353	120.19384	Inside	Troglofauna	2020
HH1650R	-23.36307	120.19237	Inside	Troglofauna	2020
HH1654R	-23.36773	120.19522	Inside	Stygofauna	2020

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
HH1769R	-23.36343	120.21292	Inside	Troglofauna	2020
HH1908R	-23.37158	120.21439	Inside	Stygofauna	2020
HH1965R	-23.37734	120.21886	Inside	Stygofauna	2020
HH2009R	-23.37829	120.22461	Inside	Stygofauna	2022
HH2053R	-23.36977	120.22759	Inside	Troglofauna	2020
HH2059R	-23.37835	120.23058	Inside	Stygofauna	2020
HH2061R	-23.37747	120.23057	Inside	Stygofauna	2022
HH2073R	-23.37209	120.23054	Inside	Stygofauna	2020
HH2092R	-23.37168	120.19148	Inside	Troglofauna	2020
HH2093R	-23.3723	120.19151	Inside	Troglofauna	2020
HH2095R	-23.37112	120.19341	Inside	Troglofauna	2020
HH2096R	-23.3703	120.19442	Inside	Troglofauna	2020
HH2120R	-23.36848	120.19449	Inside	Stygofauna	2020
HH2121R	-23.36802	120.19451	Inside	Stygofauna	2020
HH2458R	-23.36935	120.20797	Inside	Stygofauna	2020
HH2781R	-23.37911	120.2305	Inside	Stygofauna	2020
HH3076R	-23.37789	120.22513	Inside	Stygofauna	2022
HH3166R	-23.3779	120.23	Inside	Stygofauna	2022
HH3180R	-23.3743	120.23095	Inside	Troglofauna	2022
HH3270R	-23.36215	120.18505	Inside	Troglofauna	2020
HH3278R	-23.36206	120.19277	Inside	Troglofauna	2020
HH3279R	-23.36126	120.19275	Inside	Troglofauna	2020
HHH0009	-23.36621	120.19211	Inside	Stygofauna	2020
HHH0026	-23.37812	120.19817	Inside	Stygofauna	2020
HHH0027	-23.38385	120.20031	Inside	Stygofauna	2020
HHH0028	-23.38823	120.20168	Inside	Stygofauna	2020
HHH0054	-23.36756	120.20557	Inside	Stygofauna	2020
HHH0064	-23.3668	120.20091	Inside	Stygofauna	2020
HSJ0003	-23.39309	120.15136	Outside	Stygofauna	2008
HSJ0015	-23.39509	120.12501	Outside	Stygofauna	2008
HSJ0017	-23.39498	120.15138	Outside	Stygofauna	2008
HSJ0018	-23.40573	120.13926	Outside	Stygofauna	2009
HSJ0019	-23.39666	120.12963	Outside	Stygofauna	2008
HSJ0020	-23.39277	120.14234	Outside	Stygofauna	2008
HSJ0117	-23.39363	120.19705	Inside	Stygofauna	2020
LB002	-23.37582	120.18008	Inside	Troglofauna	2008
LB002	-23.37582	120.18008	Inside	Troglofauna	2009
LB005	-23.37314	120.18015	Inside	Troglofauna	2008
LB005	-23.37314	120.18015	Inside	Troglofauna	2009
LB006	-23.3767	120.17909	Inside	Troglofauna	2008
LB006	-23.3767	120.17909	Inside	Troglofauna	2009
LB008	-23.37669	120.17811	Inside	Troglofauna	2008
LB008	-23.37669	120.17811	Inside	Troglofauna	2009
LB015	-23.374	120.17817	Inside	Troglofauna	2008

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
LB015	-23.374	120.17817	Inside	Troglofauna	2009
LB017	-23.37486	120.17912	Inside	Troglofauna	2008
LB017	-23.37486	120.17912	Inside	Troglofauna	2009
LB019	-23.37398	120.17913	Inside	Troglofauna	2008
LB019	-23.37398	120.17913	Inside	Troglofauna	2009
LB022	-23.37584	120.18106	Inside	Troglofauna	2008
LB022	-23.37584	120.18106	Inside	Troglofauna	2009
LB024	-23.37581	120.18204	Inside	Troglofauna	2008
LB024	-23.37581	120.18204	Inside	Troglofauna	2009
LB030	-23.37314	120.18309	Inside	Troglofauna	2008
LB030	-23.37314	120.18309	Inside	Troglofauna	2009
LB032	-23.37135	120.18313	Inside	Troglofauna	2008
LB032	-23.37135	120.18313	Inside	Troglofauna	2009
LB033	-23.3732	120.18407	Inside	Troglofauna	2008
LB033	-23.3732	120.18407	Inside	Troglofauna	2009
LB034	-23.37228	120.18407	Inside	Troglofauna	2008
LB034	-23.37228	120.18407	Inside	Troglofauna	2009
LB035	-23.37138	120.18409	Inside	Troglofauna	2008
LB035	-23.37138	120.18409	Inside	Troglofauna	2009
LB036	-23.37403	120.1811	Inside	Troglofauna	2008
LB036	-23.37403	120.1811	Inside	Troglofauna	2009
LB040	-23.3736	120.18306	Inside	Troglofauna	2008
LB040	-23.3736	120.18306	Inside	Troglofauna	2009
LB047	-23.37627	120.18008	Inside	Troglofauna	2008
LB047	-23.37627	120.18008	Inside	Troglofauna	2009
LB048	-23.37301	120.17526	Inside	Stygofauna	2008
LB049	-23.37304	120.17921	Inside	Troglofauna	2008
LB049	-23.37304	120.17921	Inside	Troglofauna	2009
LB052	-23.37479	120.1762	Inside	Stygofauna	2008
LB053	-23.37304	120.17621	Inside	Stygofauna	2008
LB055	-23.37391	120.17526	Inside	Stygofauna	2008
LB057	-23.37542	120.18204	Inside	Stygofauna	2008
LB066	-23.37132	120.18113	Inside	Stygofauna	2008
LB068	-23.37086	120.18215	Inside	Troglofauna	2008
LB068	-23.37086	120.18215	Inside	Troglofauna	2009
LB069	-23.37086	120.1812	Inside	Stygofauna	2008
LB069	-23.37086	120.1812	Inside	Troglofauna	2008
LB069	-23.37086	120.1812	Inside	Troglofauna	2009
LB070	-23.3718	120.18115	Inside	Stygofauna	2008
LB084	-23.37442	120.17912	Inside	Troglofauna	2008
LB084	-23.37442	120.17912	Inside	Troglofauna	2009
LB087	-23.37715	120.17908	Inside	Troglofauna	2008
LB087	-23.37715	120.17908	Inside	Troglofauna	2009
LB091	-23.37353	120.17818	Inside	Troglofauna	2008

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
LB091	-23.37353	120.17818	Inside	Troglofauna	2009
LB096	-23.37719	120.18103	Inside	Troglofauna	2008
LB096	-23.37719	120.18103	Inside	Troglofauna	2009
May09unknown10	-23.40447	120.13903	Outside	Stygofauna	2009
May09unknown3	-23.40811	120.13789	Outside	Stygofauna	2009
May09unknown4	-23.40942	120.13756	Outside	Stygofauna	2009
May09unknown5	-23.41033	120.13733	Outside	Stygofauna	2009
May09unknown6	-23.41078	120.13717	Outside	Stygofauna	2009
May09unknown7	-23.41056	120.13728	Outside	Stygofauna	2009
May09unknown8	-23.409	120.13769	Outside	Stygofauna	2009
May09unknown9	-23.40725	120.13817	Outside	Stygofauna	2009
MCM0021	-23.37482	120.21642	Inside	Troglofauna	2008
MCM0021	-23.37482	120.21642	Inside	Troglofauna	2009
MCM0023	-23.37312	120.2167	Inside	Troglofauna	2008
MCM0023	-23.37312	120.2167	Inside	Troglofauna	2009
MCM0043	-23.37507	120.22072	Inside	Troglofauna	2008
MCM0043	-23.37507	120.22072	Inside	Troglofauna	2009
MCM0048	-23.37618	120.22274	Inside	Troglofauna	2008
MCM0048	-23.37618	120.22274	Inside	Troglofauna	2009
MCM0049	-23.37566	120.22289	Inside	Troglofauna	2008
MCM0049	-23.37566	120.22289	Inside	Troglofauna	2009
MCM0058	-23.36877	120.19325	Inside	Troglofauna	2008
MCM0058	-23.36877	120.19325	Inside	Troglofauna	2009
MCM0066	-23.36619	120.19529	Inside	Troglofauna	2008
MCM0066	-23.36619	120.19529	Inside	Troglofauna	2009
MCM0067	-23.36523	120.1954	Inside	Troglofauna	2008
MCM0067	-23.36523	120.1954	Inside	Troglofauna	2009
MCM0071	-23.36678	120.19619	Inside	Troglofauna	2008
MCM0071	-23.36678	120.19619	Inside	Troglofauna	2009
MCM0073	-23.36529	120.19621	Inside	Troglofauna	2008
MCM0073	-23.36529	120.19621	Inside	Troglofauna	2009
MCM0076	-23.36825	120.19642	Inside	Troglofauna	2008
MCM0076	-23.36825	120.19642	Inside	Troglofauna	2009
MCM0106	-23.36812	120.19719	Inside	Troglofauna	2008
MCM0106	-23.36812	120.19719	Inside	Troglofauna	2009
MCM0107	-23.36733	120.19717	Inside	Troglofauna	2008
MCM0107	-23.36733	120.19717	Inside	Troglofauna	2009
MCM0109	-23.36538	120.19728	Inside	Troglofauna	2008
MCM0109	-23.36538	120.19728	Inside	Troglofauna	2009
MCM0112	-23.36823	120.19809	Inside	Troglofauna	2008
MCM0112	-23.36823	120.19809	Inside	Troglofauna	2009
MCM0114	-23.36578	120.19803	Inside	Troglofauna	2008
MCM0114	-23.36578	120.19803	Inside	Troglofauna	2009

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
MCM0116	-23.36812	120.19913	Inside	Troglofauna	2008
MCM0116	-23.36812	120.19913	Inside	Troglofauna	2009
MCM0120	-23.36532	120.19908	Inside	Troglofauna	2008
MCM0120	-23.36532	120.19908	Inside	Troglofauna	2009
MCM0121	-23.36928	120.19994	Inside	Troglofauna	2008
MCM0121	-23.36928	120.19994	Inside	Troglofauna	2009
MCM0132	-23.36987	120.20196	Inside	Troglofauna	2008
MCM0132	-23.36987	120.20196	Inside	Troglofauna	2009
MCM0141	-23.36677	120.20314	Inside	Troglofauna	2008
MCM0141	-23.36677	120.20314	Inside	Troglofauna	2009
MCM0142	-23.36603	120.20319	Inside	Troglofauna	2008
MCM0142	-23.36603	120.20319	Inside	Troglofauna	2009
MCM0154	-23.37053	120.20728	Inside	Troglofauna	2008
MCM0154	-23.37053	120.20728	Inside	Troglofauna	2009
MCM0157	-23.36778	120.20724	Inside	Troglofauna	2008
MCM0157	-23.36778	120.20724	Inside	Troglofauna	2009
MCM0163	-23.37065	120.20928	Inside	Troglofauna	2008
MCM0163	-23.37065	120.20928	Inside	Troglofauna	2009
MCM0168	-23.37081	120.21006	Inside	Troglofauna	2008
MCM0168	-23.37081	120.21006	Inside	Troglofauna	2009
MCM0240	-23.36715	120.17225	Inside	Troglofauna	2008
MCM0240	-23.36715	120.17225	Inside	Troglofauna	2009
MCM0241	-23.36643	120.17231	Inside	Troglofauna	2009
MCM0242	-23.36548	120.17234	Inside	Troglofauna	2009
MCM0247	-23.36709	120.17416	Inside	Troglofauna	2008
MCM0247	-23.36709	120.17416	Inside	Troglofauna	2009
MCM0248	-23.36619	120.17427	Inside	Troglofauna	2009
MCM0256	-23.38167	120.23992	Inside	Troglofauna	2009
MCM0257	-23.38182	120.24079	Inside	Troglofauna	2009
MCM0280	-23.37135	120.27044	Inside	Troglofauna	2009
MCM0282	-23.37087	120.26849	Inside	Troglofauna	2009
MCM0307	-23.36947	120.07759	Outside	Troglofauna	2009
MCM0357	-23.37295	120.07583	Outside	Troglofauna	2009
MCM0360	-23.37038	120.07598	Outside	Troglofauna	2009
MCM0365	-23.37045	120.07686	Outside	Troglofauna	2009
MCM1529	-23.37585	120.18204	Inside	Stygofauna	2008
MCM1530	-23.37495	120.18206	Inside	Troglofauna	2008
MCM1530	-23.37495	120.18206	Inside	Troglofauna	2009
MCM1533	-23.37573	120.1752	Inside	Stygofauna	2008
MCM1534	-23.37485	120.17619	Inside	Stygofauna	2008
MCM1535	-23.37488	120.17815	Inside	Troglofauna	2008
MCM1535	-23.37488	120.17815	Inside	Troglofauna	2009
MCM1538	-23.37394	120.17621	Inside	Stygofauna	2008
MCM1539	-23.37313	120.18112	Inside	Troglofauna	2008

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
MCM1539	-23.37313	120.18112	Inside	Troglofauna	2009
MCM1543	-23.37129	120.1792	Inside	Troglofauna	2008
MCM1543	-23.37129	120.1792	Inside	Troglofauna	2009
MCM1545	-23.37853	120.18027	Inside	Troglofauna	2008
MCM1545	-23.37853	120.18027	Inside	Troglofauna	2009
MG0036R	-23.33854	120.12959	Outside	Troglofauna	2009
MG0037R	-23.33759	120.12963	Outside	Troglofauna	2009
MG0041R	-23.33743	120.12423	Outside	Troglofauna	2009
MG0042R	-23.33692	120.12421	Outside	Troglofauna	2009
MG0043R	-23.33583	120.12422	Outside	Troglofauna	2009
MG0044R	-23.33445	120.12427	Outside	Troglofauna	2009
MG0045R	-23.33591	120.11769	Outside	Troglofauna	2009
MG0046R	-23.33504	120.11769	Outside	Troglofauna	2009
MG0049R	-23.33359	120.11188	Outside	Troglofauna	2009
MG0050R	-23.33082	120.11194	Outside	Troglofauna	2009
MG0051R	-23.33439	120.10597	Outside	Troglofauna	2009
MG0052R	-23.33271	120.10596	Outside	Troglofauna	2009
MG0053R	-23.33165	120.10602	Outside	Troglofauna	2009
MG0055R	-23.3361	120.10008	Outside	Troglofauna	2009
MG0056R	-23.3354	120.10004	Outside	Troglofauna	2009
MG0057R	-23.3363	120.09421	Outside	Troglofauna	2009
MG0058R	-23.33539	120.0942	Outside	Troglofauna	2009
MG0059R	-23.33447	120.09422	Outside	Troglofauna	2009
MG0060R	-23.33314	120.09426	Outside	Troglofauna	2009
MG0061R	-23.33659	120.08241	Outside	Troglofauna	2009
MG0063R	-23.3353	120.08242	Outside	Troglofauna	2009
MG0066R	-23.33649	120.07662	Outside	Troglofauna	2009
MG0070R	-23.3402	120.07075	Outside	Troglofauna	2009
MG0075R	-23.33524	120.09127	Outside	Troglofauna	2009
MG0076R	-23.33441	120.09132	Outside	Troglofauna	2009
MG0077R	-23.3349	120.09717	Outside	Troglofauna	2009
MG0079R	-23.33323	120.10308	Outside	Troglofauna	2009
MG0080R	-23.33285	120.10896	Outside	Troglofauna	2009
MG0081R	-23.33343	120.11482	Outside	Troglofauna	2009
MG0083R	-23.33353	120.12064	Outside	Troglofauna	2009
MG0085R	-23.33415	120.10309	Outside	Troglofauna	2009
MG0086R	-23.33582	120.09714	Outside	Troglofauna	2009
MG0087R	-23.33399	120.09721	Outside	Troglofauna	2009
MG0088R	-23.34272	120.07654	Outside	Troglofauna	2009
MG0089R	-23.3419	120.07651	Outside	Troglofauna	2009
MG0090R	-23.34108	120.07637	Outside	Troglofauna	2009
MG0103R	-23.33962	120.07661	Outside	Troglofauna	2009
MG0104R	-23.34051	120.07672	Outside	Troglofauna	2009
MG0105R	-23.33873	120.07658	Outside	Troglofauna	2009

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
MG0109R	-23.33468	120.07669	Outside	Troglofauna	2009
MG0112R	-23.34152	120.07066	Outside	Troglofauna	2009
MG0115R	-23.33878	120.07077	Outside	Troglofauna	2009
MG0116R	-23.33448	120.10008	Outside	Troglofauna	2009
MG0117R	-23.334	120.10009	Outside	Troglofauna	2009
MG0119R	-23.33316	120.10008	Outside	Troglofauna	2009
MG0121R	-23.33393	120.0825	Outside	Troglofauna	2009
MG0122R	-23.33343	120.09134	Outside	Troglofauna	2009
MG0123R	-23.3336	120.10599	Outside	Troglofauna	2009
MG0124R	-23.33224	120.106	Outside	Troglofauna	2009
MG0126R	-23.33176	120.11189	Outside	Troglofauna	2009
MG0127R	-23.33131	120.11189	Outside	Troglofauna	2009
MG0128R	-23.33543	120.11765	Outside	Troglofauna	2009
MG0130R	-23.33361	120.11786	Outside	Troglofauna	2009
MG0133R	-23.33695	120.12957	Outside	Troglofauna	2009
MG0134R	-23.33616	120.12967	Outside	Troglofauna	2009
MG0136R	-23.33814	120.12714	Outside	Troglofauna	2009
MG0137R	-23.33767	120.12712	Outside	Troglofauna	2009
MG0138R	-23.33716	120.12714	Outside	Troglofauna	2009
MG0139R	-23.33683	120.12717	Outside	Troglofauna	2009
MG0140R	-23.33249	120.10013	Outside	Troglofauna	2009
MG0141R	-23.33402	120.12063	Outside	Troglofauna	2009
MG0142R	-23.33621	120.12058	Outside	Troglofauna	2009
MG0143R	-23.33536	120.12063	Outside	Troglofauna	2009
MG0145R	-23.33567	120.12056	Outside	Troglofauna	2009
MG0146R	-23.33491	120.12058	Outside	Troglofauna	2009
MG0149R	-23.33431	120.1148	Outside	Troglofauna	2009
MG0150R	-23.33389	120.11479	Outside	Troglofauna	2009
MG0152R	-23.3325	120.11488	Outside	Troglofauna	2009
MG0153R	-23.33205	120.11493	Outside	Troglofauna	2009
MG0154R	-23.33377	120.10899	Outside	Troglofauna	2009
MG0155R	-23.33328	120.10894	Outside	Troglofauna	2009
MG0156R	-23.33242	120.109	Outside	Troglofauna	2009
MG0157R	-23.33195	120.109	Outside	Troglofauna	2009
MG0159R	-23.3311	120.10905	Outside	Troglofauna	2009
MG0161R	-23.33538	120.12722	Outside	Troglofauna	2009
MG0162R	-23.33322	120.11765	Outside	Troglofauna	2009
MG0163R	-23.33497	120.10304	Outside	Troglofauna	2009
MG0164R	-23.33456	120.10309	Outside	Troglofauna	2009
MG0165R	-23.33366	120.10306	Outside	Troglofauna	2009
MG0172R	-23.33667	120.09715	Outside	Troglofauna	2009
MG0181R	-23.33231	120.10308	Outside	Troglofauna	2009
MG0182R	-23.33179	120.1031	Outside	Troglofauna	2009
MG0200R	-23.34258	120.07066	Outside	Troglofauna	2009

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
MG0201R	-23.33783	120.07661	Outside	Troglofauna	2009
MG0202R	-23.33308	120.11184	Outside	Troglofauna	2009
MG0257R	-23.33627	120.09714	Outside	Troglofauna	2009
MG0280R	-23.33355	120.09725	Outside	Troglofauna	2009
MS273	-23.37525	120.187	Inside	Troglofauna	2009
PI002	-23.37703	120.22259	Inside	Troglofauna	2008
PI002	-23.37703	120.22259	Inside	Troglofauna	2009
PI003	-23.37612	120.22261	Inside	Troglofauna	2008
PI003	-23.37612	120.22261	Inside	Troglofauna	2009
PI005	-23.3775	120.22159	Inside	Troglofauna	2008
PI005	-23.3775	120.22159	Inside	Troglofauna	2009
PI007	-23.37433	120.22265	Inside	Troglofauna	2008
PI007	-23.37433	120.22265	Inside	Troglofauna	2009
PI008	-23.37566	120.22164	Inside	Troglofauna	2008
PI008	-23.37566	120.22164	Inside	Troglofauna	2009
PI009	-23.37476	120.22166	Inside	Troglofauna	2008
PI009	-23.37476	120.22166	Inside	Troglofauna	2009
PI011	-23.37355	120.22265	Inside	Troglofauna	2008
PI011	-23.37355	120.22265	Inside	Troglofauna	2009
PI012	-23.3726	120.22267	Inside	Troglofauna	2008
PI012	-23.3726	120.22267	Inside	Troglofauna	2009
PI013	-23.37378	120.22167	Inside	Troglofauna	2008
PI013	-23.37378	120.22167	Inside	Troglofauna	2009
PI014	-23.3775	120.22065	Inside	Troglofauna	2008
PI014	-23.3775	120.22065	Inside	Troglofauna	2009
PI018A	-23.37535	120.21967	Inside	Troglofauna	2008
PI018A	-23.37535	120.21967	Inside	Troglofauna	2009
PI026	-23.37423	120.21777	Inside	Troglofauna	2008
PI026	-23.37423	120.21777	Inside	Troglofauna	2009
PI027	-23.37334	120.21778	Inside	Troglofauna	2008
PI027	-23.37334	120.21778	Inside	Troglofauna	2009
PI031	-23.3756	120.21871	Inside	Stygofauna	2020
PI034	-23.37512	120.21677	Inside	Troglofauna	2008
PI034	-23.37512	120.21677	Inside	Troglofauna	2009
PI039	-23.37422	120.21679	Inside	Troglofauna	2008
PI039	-23.37422	120.21679	Inside	Troglofauna	2009
PI041	-23.37567	120.22264	Inside	Troglofauna	2008
PI041	-23.37567	120.22264	Inside	Troglofauna	2009
PI042	-23.3748	120.22263	Inside	Troglofauna	2008
PI042	-23.3748	120.22263	Inside	Troglofauna	2009
PI043	-23.37388	120.22266	Inside	Troglofauna	2008
PI043	-23.37388	120.22266	Inside	Troglofauna	2009
PI044	-23.373	120.22265	Inside	Troglofauna	2008
PI044	-23.373	120.22265	Inside	Troglofauna	2009

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
PI045	-23.37708	120.22159	Inside	Troglofauna	2008
PI045	-23.37708	120.22159	Inside	Troglofauna	2009
PI059	-23.37426	120.21873	Inside	Troglofauna	2008
PI059	-23.37426	120.21873	Inside	Troglofauna	2009
PI060	-23.37558	120.21772	Inside	Troglofauna	2008
PI060	-23.37558	120.21772	Inside	Troglofauna	2009
PI068	-23.37354	120.2168	Inside	Troglofauna	2008
PI068	-23.37354	120.2168	Inside	Troglofauna	2009
SJ0033R	-23.39472	120.11456	Outside	Troglofauna	2009
SJ0041R	-23.39488	120.10871	Outside	Troglofauna	2009
SJ0253R	-23.39607	120.17466	Inside	Troglofauna	2009
SJ0320R	-23.39444	120.18508	Inside	Stygofauna	2008
SJ0330R	-23.3963	120.18349	Inside	Troglofauna	2009
SJ0349R	-23.39721	120.15986	Outside	Troglofauna	2009
SJ0364R	-23.39265	120.18511	Inside	Stygofauna	2008
SJ0389R	-23.39738	120.17027	Outside	Troglofauna	2009
SJ0413R	-23.39714	120.15696	Outside	Troglofauna	2009
SJ0421R	-23.39575	120.19813	Inside	Troglofauna	2009
SJ0441R	-23.3971	120.14966	Outside	Troglofauna	2009
SJ0454R	-23.39588	120.11758	Outside	Troglofauna	2009
SJ0491R	-23.39655	120.10272	Outside	Troglofauna	2009
SJ0494R	-23.39577	120.10582	Outside	Troglofauna	2009
SJ0496R	-23.3949	120.11006	Outside	Troglofauna	2009
SJ0497R	-23.39535	120.10731	Outside	Troglofauna	2009
SJ0499R	-23.39637	120.19382	Inside	Troglofauna	2009
SJ0500R	-23.39166	120.18654	Inside	Troglofauna	2008
SJ0502R	-23.39638	120.12042	Outside	Troglofauna	2009
SJ0504R	-23.39587	120.11895	Outside	Troglofauna	2009
SJ0505R	-23.39498	120.1156	Outside	Troglofauna	2009
SJ0508R	-23.39443	120.11313	Outside	Troglofauna	2009
SJ0509R	-23.39482	120.11161	Outside	Troglofauna	2009
SJ0516R	-23.39638	120.18653	Inside	Troglofauna	2009
SJ0526R	-23.39637	120.17468	Inside	Troglofauna	2009
SJ0563R	-23.39722	120.15846	Outside	Troglofauna	2009
SJ0573R	-23.39712	120.15409	Outside	Troglofauna	2009
SJ0574R	-23.39666	120.15409	Outside	Stygofauna	2008
SJ0577R	-23.39532	120.15415	Outside	Stygofauna	2008
SJ0578R	-23.39708	120.15551	Outside	Troglofauna	2009
SJ0591R	-23.39737	120.16575	Outside	Troglofauna	2009
SJ0592R	-23.39695	120.16582	Outside	Troglofauna	2009
SJ0597R	-23.39688	120.16871	Outside	Troglofauna	2009
SJ1529R	-23.3979	120.24505	Outside	Stygofauna	2020
SJ1529R	-23.3979	120.24505	Outside	Troglofauna	2020
SJ2454RDG	-23.39461	120.19048	Inside	Troglofauna	2020

Hole ID	Latitude	Longitude	Location in Study Area	Sample	Year
SJ2634DG	-23.39236	120.19434	Inside	Stygofauna	2020
SJ2634DG	-23.39236	120.19434	Inside	Troglofauna	2020
W262	-23.40639	120.13836	Outside	Stygofauna	2008
W262	-23.40639	120.13836	Outside	Stygofauna	2009
W262	-23.40639	120.13836	Outside	Troglofauna	2009
W2750	-23.40811	120.13714	Outside	Troglofauna	2009
WH045	-23.36804	120.10006	Outside	Troglofauna	2009
WH049	-23.36539	120.0972	Outside	Troglofauna	2009
WH050	-23.36251	120.09716	Outside	Troglofauna	2008
WH050	-23.36251	120.09716	Outside	Troglofauna	2009
WH051	-23.36353	120.09714	Outside	Troglofauna	2009
WH052	-23.36087	120.09719	Outside	Troglofauna	2008
WH052	-23.36087	120.09719	Outside	Troglofauna	2009
WRKRC140	-23.39064	120.33619	Inside	Troglofauna	2009
WRKRC141	-23.39075	120.33611	Inside	Troglofauna	2009
WRKRC142	-23.39125	120.33614	Inside	Troglofauna	2009
WRKRC143	-23.39169	120.33719	Inside	Troglofauna	2009
WRKRC144	-23.39144	120.337	Inside	Troglofauna	2009
WRKRC147	-23.39083	120.33708	Inside	Troglofauna	2009
WRKRC148	-23.39167	120.33975	Inside	Troglofauna	2009
WRKRC149	-23.39208	120.33972	Inside	Troglofauna	2009
WRKRC237	-23.39086	120.338	Inside	Troglofauna	2009
WRKRC238	-23.39111	120.33797	Inside	Troglofauna	2009
WRKRC240	-23.39172	120.33806	Inside	Troglofauna	2009

Appendix 4 – Troglofauna specimens collected in two survey periods (2008-2009 and 2020-2022)

Bore ID	Date Sampled	Survey ID	Latitude	Longitude	Lowest Identification	In Study Area	Number of Specimens
CM0077R	28/06/2020	10467	-23.37338	120.2705	Lophoturus madecassus	Yes	10
CM0089R	6/03/2020	10467	-23.36743	120.2705	Palpigradi sp.	Yes	1
CM0156R	7/10/2022	10467	-23.37487	120.2836	Symphylella `BSYM114`	Yes	1
EBP0069	11/02/2009	NA	-23.33407	120.106	Decapauropus sp. B05		1
EBR0008	24/03/2009	NA	-23.33492	120.0943	Decapauropus tenuis		5
EBR0019	12/02/2009	NA	-23.3344	120.0826	Blattidae sp.		1
EBR0023	12/02/2009	NA	-23.33598	120.0825	Blattidae sp.		1
EJ0530RE	28/06/2020	10467	-23.37316	120.2428	Lophoturus madecassus	Yes	3
EJ0609R	5/03/2020	10467	-23.3703	120.2455	Lophoturus madecassus	Yes	3
EJ0679R	6/03/2020	10467	-23.37543	120.2354	Japygidae `BDP165`	Yes	1
EJ0679R	6/03/2020	10467	-23.37543	120.2354	Lophoturus madecassus	Yes	1
EJ0679R	6/03/2020	10467	-23.37543	120.2354	Phaconeura sp. B04	Yes	1
EJ0679R	27/06/2020	10467	-23.37543	120.2354	Dodecastyla sp. B02	Yes	2
EJ0679R	27/06/2020	10467	-23.37543	120.2354	Japygidae `BDP165`	Yes	1
EJ0679R	27/06/2020	10467	-23.37543	120.2354	Lophoturus madecassus	Yes	1
EJ0683R	5/03/2020	10467	-23.38404	120.2369	Lophoturus madecassus	Yes	1
EJ0791R	1/07/2020	10467	-23.38243	120.2442	Tyrannochthonius `PSE057`	Yes	1
EJ0798R	8/10/2022	10467	-23.37928	120.2442	Scutigerella `BSYM113`	Yes	1
EJ0833R	8/03/2020	10467	-23.38312	120.2472	Symphylella sp. B07	Yes	1
EJ0833R	1/07/2020	10467	-23.38312	120.2472	Tyrannochthonius `PSE057`	Yes	1
EJ0886R	6/03/2020	10467	-23.37676	120.2501	Troglarmadillo sp. B09	Yes	23
EJ0886R	28/06/2020	10467	-23.37676	120.2501	Troglarmadillo sp. B09	Yes	5
EJ0889R	28/06/2020	10467	-23.37299	120.2501	Lophoturus madecassus	Yes	7
EJ1185R	6/03/2020	10467	-23.37577	120.2667	Symphylella sp.	Yes	1
EJ1188R	7/10/2022	10467	-23.37437	120.2667	Troglarmadillo sp. B09	Yes	3

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EJ1211R	6/03/2020	10467	-23.37406	120.2681	Cryptops `BSCOL066`	Yes	1
EJ1246R	7/10/2022	10467	-23.37833	120.2608	Troglarmadillo sp. B09	Yes	2
EJ1258R	6/10/2022	10467	-23.38205	120.232	Phaconeura `BHE034`	Yes	2
EJ1543R	8/10/2022	10467	-23.37318	120.2422	Lophoturus madecassus	Yes	4
EJ1805R	9/10/2022	10467	-23.37439	120.2511	Dodecastyla sp. B02	Yes	1
EJ1805R	9/10/2022	10467	-23.37439	120.2511	Lophoturus madecassus	Yes	3
EJ2370R	8/10/2022	10467	-23.38448	120.2413	Lophoturus madecassus	Yes	2
EJR0004	28/01/2009	NA	-23.37433	120.2456	Diplura sp.	Yes	1
EJR0004	28/01/2009	NA	-23.37433	120.2456	Phaconeura sp.	Yes	10
EJR0004	23/03/2009	NA	-23.37433	120.2456	Phaconeura sp.	Yes	1
EJR0013	28/01/2009	NA	-23.37577	120.228	Lophoproctidae sp.	Yes	1
EJR0013	28/01/2009	NA	-23.37577	120.228	Lophoturus madecassus	Yes	1
EJR0014	30/11/2008	NA	-23.37397	120.228	Palpigradi sp. B03	Yes	1
EJR0014	30/11/2008	NA	-23.37397	120.228	Tyrannochthonius `PSE057`	Yes	2
EJR0014	28/01/2009	NA	-23.37397	120.228	Hanseniella sp. B01	Yes	1
EJR0014	28/01/2009	NA	-23.37397	120.228	Lophoturus madecassus	Yes	3
EJR0014	28/01/2009	NA	-23.37397	120.228	Lophoturus madecassus	Yes	8
EJR0014	9/06/2009	NA	-23.37397	120.228	Lophoturus madecassus	Yes	1
EJR0014	9/09/2009	NA	-23.37397	120.228	Zygentoma sp.	Yes	1
EJR0014	24/09/2009	NA	-23.37397	120.228	Hanseniella sp. B01	Yes	2
EJR0027	24/09/2009	NA	-23.369	120.2536	Lophoproctidae sp.	Yes	5
EJR0028	14/08/2009	NA	-23.37983	120.2533	Palpigradi sp. B03	Yes	1
EJR0029	29/01/2009	NA	-23.38163	120.2533	Troglarmadillo sp. B09	Yes	1
EMS0572	11/08/2009	NA	-23.38297	120.0787	Trinemura sp. B24		1
EMS0572	28/08/2009	NA	-23.38297	120.0787	Trinemura sp. B24		2
EMS0572	10/09/2009	NA	-23.38297	120.0787	Trinemura sp. B24		3

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EXP0011	29/01/2009	NA	-23.37057	120.306	Lophoturus madecassus	Yes	1
EXP0012	9/06/2009	NA	-23.386	120.2966	Hanseniella sp. B04	Yes	1
EXP0013	6/02/2009	NA	-23.3851	120.2966	Japygidae `DPL002` s.l.	Yes	1
EXP0038	29/01/2009	NA	-23.36561	120.2779	Phaconeura sp.	Yes	12
EXP0038	29/01/2009	NA	-23.36561	120.2779	Troglarmadillo sp. B09	Yes	1
EXR0283	29/01/2009	NA	-23.36945	120.2781	Lophoturus madecassus	Yes	1
EXR0388	9/06/2009	NA	-23.37069	120.2722	Symphylella sp. B07	Yes	1
EXR0421	8/10/2008	NA	-23.38812	120.0305	Lophoturus madecassus		8
EXR0421	8/10/2008	NA	-23.38812	120.0305	Lophoturus madecassus		11
EXR0421	15/12/2008	NA	-23.38812	120.0305	Lophoturus madecassus		4
EXR0421	19/08/2009	NA	-23.38812	120.0305	Palpigradi sp. B03		1
EXR0421	22/09/2009	NA	-23.38812	120.0305	Cixiidae sp. B02		1
EXR0422	27/01/2009	NA	-23.38861	120.0304	Phaconeura sp.		1
EXR0424	8/06/2009	NA	-23.36692	120.3062	Palpigradi sp. B01	Yes	1
EXR0425	29/01/2009	NA	-23.36619	120.3063	Symphylella sp. B02 (BHP)	Yes	1
EXR0426	19/06/2009	NA	-23.36559	120.3065	Phaconeura sp.	Yes	1
EXR0626	23/03/2009	NA	-23.36605	120.3331	Hanseniella sp. B04	Yes	2
EXR0639	25/03/2009	NA	-23.38903	120.0353	Lophoturus madecassus		1
EXR0639	25/03/2009	NA	-23.38903	120.0353	Scutigerella sp. B06		1
EXR0641	12/08/2009	NA	-23.38954	120.0354	Scutigerella sp. B06		1
EXR0644	8/10/2008	NA	-23.38316	120.0355	Hanseniella sp. B25		1
EXR0644	8/10/2008	NA	-23.38316	120.0355	Pauropodidae sp. B01 s.l.		1
EXR0791	8/10/2008	NA	-23.38758	120.032	Dodecastyla sp. B02		2
EXR0791	17/06/2009	NA	-23.38758	120.032	Dodecastyla sp. B02		2
EXR0791	12/08/2009	NA	-23.38758	120.032	Prethopalpus sp. B05		1
EXR0791	19/08/2009	NA	-23.38758	120.032	Phaconeura sp.		1

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EXR0792	8/10/2008	NA	-23.38722	120.0328	Japygidae `DPL002` s.l.		1
EXR0792	17/06/2009	NA	-23.38722	120.0328	Trinemura sp. B04		1
EXR0792	12/08/2009	NA	-23.38722	120.0328	Trinemura sp. B04		1
EXR0792	22/09/2009	NA	-23.38722	120.0328	Phaconeura sp.		1
EXR0792	22/09/2009	NA	-23.38722	120.0328	Trinemura sp. B24		3
EXR0793	25/03/2009	NA	-23.38768	120.0331	Japygidae `DPL002` s.l.		1
EXR0793	25/03/2009	NA	-23.38768	120.0331	Prethopalpus sp. B05		1
EXR0793	17/06/2009	NA	-23.38768	120.0331	Lophoturus madecassus		1
EXR0793	22/09/2009	NA	-23.38768	120.0331	Phaconeura sp.		1
EXR0795	8/10/2008	NA	-23.38875	120.0331	Cixiidae sp. B02		16
EXR0797	29/01/2009	NA	-23.36511	120.3066	Lophoturus madecassus	Yes	2
EXR0979	4/04/2009	NA	-23.38857	120.021	Palpigradi sp. B03		1
EXR0980	17/06/2009	NA	-23.38903	120.0217	Prethopalpus sp. B05		1
EXR0981	8/10/2008	NA	-23.38725	120.0237	Japygidae sp. B09		1
EXR0981	11/08/2009	NA	-23.38725	120.0237	Japygidae `DPL002` s.l.		1
EXR0981	11/08/2009	NA	-23.38725	120.0237	Palpigradi sp.		1
EXR0981	22/09/2009	NA	-23.38725	120.0237	Phaconeura sp.		1
EXR0982	8/10/2008	NA	-23.38775	120.0239	Phaconeura sp.		1
EXR0982	27/01/2009	NA	-23.38775	120.0239	Phaconeura sp.		1
EXR0982	17/06/2009	NA	-23.38775	120.0239	Phaconeura sp.		12
EXR0982	11/08/2009	NA	-23.38775	120.0239	Phaconeura sp.		2
EXR0982	19/08/2009	NA	-23.38775	120.0239	Phaconeura sp.		3
EXR0982	22/09/2009	NA	-23.38775	120.0239	Phaconeura sp.		7
EXR0983	8/10/2008	NA	-23.38822	120.0239	Phaconeura sp.		1
EXR0983	27/01/2009	NA	-23.38822	120.0239	Nicoletiinae sp.		1
EXR0983	11/08/2009	NA	-23.38822	120.0239	Japygidae `DPL002` s.l.		1

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EXR0983	11/08/2009	NA	-23.38822	120.0239	Nicoletiinae sp.		1
EXR0983	11/08/2009	NA	-23.38822	120.0239	Phaconeura sp.		1
EXR0983	22/09/2009	NA	-23.38822	120.0239	Phaconeura sp.		1
EXR0984	17/06/2009	NA	-23.38863	120.0239	Phaconeura sp.		3
EXR0984	11/08/2009	NA	-23.38863	120.0239	Phaconeura sp.		1
EXR0984	11/08/2009	NA	-23.38863	120.0239	Tyrannochthonius sp. B11		1
EXR0988	27/01/2009	NA	-23.38893	120.0386	Japygidae `DPL002` s.l.		1
EXR1010	9/10/2008	NA	-23.38847	120.0386	Lophoturus madecassus		1
EXR1015	18/06/2009	NA	-23.39042	120.0415	Hanseniella sp.		1
EXR1016	24/03/2009	NA	-23.39003	120.048	Palpigradi sp.		1
EXR1089	8/10/2008	NA	-23.37997	120.0386	Cixiidae sp. B02		1
EXR1356	10/02/2009	NA	-23.38675	120.3215	Hanseniella sp. B24	Yes	1
EXR1356	10/02/2009	NA	-23.38675	120.3215	Troglarmadillo sp. B07	Yes	24
EXR1356	10/02/2009	NA	-23.38675	120.3215	Troglarmadillo sp. B07	Yes	94
EXR1356	8/06/2009	NA	-23.38675	120.3215	Troglarmadillo sp. B07	Yes	1
EXR1356	8/06/2009	NA	-23.38675	120.3215	Troglarmadillo sp. B07	Yes	79
EXR1462R	8/06/2009	NA	-23.39106	120.3509	Hanseniella sp. B04	Yes	2
EXR1542R	19/08/2009	NA	-23.38989	120.0385	Palpigradi sp. B03		1
EXR1568R	8/06/2009	NA	-23.38886	120.3306	Troglarmadillo sp. B07	Yes	1
EXR1569R	9/02/2009	NA	-23.38891	120.3334	Pauropodidae sp. B05	Yes	3
EXR1642R	8/10/2008	NA	-23.38417	120.0476	Lophoturus madecassus		1
EXR1642R	8/10/2008	NA	-23.38417	120.0476	Lophoturus madecassus		8
EXR1642R	26/11/2008	NA	-23.38417	120.0476	Polyxenidae sp.		2
EXR1642R	26/01/2009	NA	-23.38417	120.0476	Lophoturus madecassus		6
EXR1642R	17/06/2009	NA	-23.38417	120.0476	Lophoturus madecassus		5
FG0560	21/10/2008	NA	-23.3742	120.1434	Cixiidae sp. B02		1

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FG0632	22/10/2008	NA	-23.37494	120.1423	Phaconeura sp. B04		1
FG0633	22/10/2008	NA	-23.37433	120.1423	Prethopalpus sp. B09		1
FG0678	21/10/2008	NA	-23.3754	120.1434	Cixiidae sp. B02		1
FG0678	21/10/2008	NA	-23.3754	120.1434	Dodecastyla sp. B02		1
FG0678	21/10/2008	NA	-23.3754	120.1434	Phaconeura sp.		4
FG0985	22/10/2008	NA	-23.3738	120.1424	Lophoproctidae sp.		1
FG0985	22/10/2008	NA	-23.3738	120.1424	Lophoturus madecassus		1
FG0985	22/10/2008	NA	-23.3738	120.1424	Phaconeura sp.		9
FG1100	21/10/2008	NA	-23.3744	120.143	Nocticola sp.		2
FG1100	21/10/2008	NA	-23.3744	120.143	nr Encoptarthria sp. B03		1
FG1363	21/10/2008	NA	-23.37545	120.1116	Araneomorphae sp. Jim 1		1
FG1790DT	19/06/2009	NA	-23.36656	120.0973	Phaconeura sp.		1
FG1860R	13/08/2009	NA	-23.38094	120.1674	Palpigradi sp. B03		1
FG1914R	10/06/2009	NA	-23.36906	120.0781	Lophoturus madecassus		1
FG2234R	20/08/2009	NA	-23.39373	120.1718	Allopauropus sp. B02	Yes	1
FG2319R	21/10/2008	NA	-23.38005	120.113	Diplura sp.		1
FG2379R	15/08/2008	NA	-23.39183	120.1162	Allopnyxia sp. B01		2
HH003	10/11/2008	NA	-23.36772	120.1973	Lophoturus madecassus	Yes	1
HH003	10/11/2008	NA	-23.36772	120.1973	Lophoturus madecassus	Yes	3
HH004	10/11/2008	NA	-23.36783	120.1981	Phaconeura sp.	Yes	1
HH0110R	28/11/2008	NA	-23.37568	120.1753	Palpigradi sp. B03	Yes	1
HH0118R	11/11/2008	NA	-23.37018	120.1745	Japygidae `DPL002` s.l.	Yes	1
HH0118R	6/02/2009	NA	-23.37018	120.1745	Prethopalpus sp. B09	Yes	1
HH0126R	20/10/2008	NA	-23.36954	120.2072	Lophoturus madecassus	Yes	1
HH013	10/11/2008	NA	-23.3689	120.2011	Lophoproctidae sp.	Yes	1
HH0158R	2/02/2009	NA	-23.37089	120.2043	Pauropodidae sp. B01 s.l.	Yes	1

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HH0161R	2/02/2009	NA	-23.3681	120.2042	Lophoturus madecassus	Yes	1
HH035	10/09/2009	NA	-23.36836	120.1953	Cixiidae sp. B02	Yes	3
HH035	10/09/2009	NA	-23.36836	120.1953	Phaconeura sp.	Yes	1
HH051	4/02/2009	NA	-23.36695	120.2012	Hanseniella sp. B01	Yes	1
HH062	10/11/2008	NA	-23.36517	120.2021	Troglarmadillo sp. B09	Yes	1
HH0857R	7/03/2020	10467	-23.38212	120.2064	Troglarmadillo sp. B09	Yes	3
HH0857R	25/06/2020	10467	-23.38212	120.2064	Lophoturus madecassus	Yes	6
HH0857R	25/06/2020	10467	-23.38212	120.2064	Lophoturus madecassus	Yes	20
HH0858R	25/06/2020	10467	-23.38077	120.2064	Lophoturus madecassus	Yes	14
HH104	9/09/2009	NA	-23.36929	120.1961	Dodecastyla sp. B02	Yes	1
HH104	9/09/2009	NA	-23.36929	120.1961	Nocticola sp.	Yes	1
HH106	10/11/2008	NA	-23.36533	120.1981	Cixiidae sp. B02	Yes	2
HH1522R	6/03/2020	10467	-23.36427	120.1934	Lophoturus madecassus	Yes	12
HH1525R	10/03/2020	10467	-23.36386	120.1929	Palpigradi sp. B03	Yes	1
HH2053R	6/03/2020	10467	-23.36977	120.2276	Japygidae sp.	Yes	1
HH2061R	8/10/2022	10467	-23.37747	120.2306	Curculionidae Genus 1 sp. B01	Yes	1
HH2092R	7/03/2020	10467	-23.37168	120.1915	Lophoturus madecassus	Yes	1
HH2092R	29/06/2020	10467	-23.37168	120.1915	Japygidae `BDP165`	Yes	1
HH2093R	7/03/2020	10467	-23.3723	120.1915	Allopnyxia sp. B01	Yes	50
HH2093R	29/06/2020	10467	-23.3723	120.1915	Allopnyxia sp. B01	Yes	2
HH2096R	29/06/2020	10467	-23.3703	120.1944	Lophoturus madecassus	Yes	1
HH3076R	8/10/2022	10467	-23.37789	120.2251	nr Andricophiloscia sp.	Yes	1
HH3076R	8/10/2022	10467	-23.37789	120.2251	Phaconeura sp. B04	Yes	3
HH3270R	6/03/2020	10467	-23.36215	120.1851	Lophoturus madecassus	Yes	1
HH3278R	26/06/2020	10467	-23.36206	120.1928	Lophoturus madecassus	Yes	20
HSJ0019	21/11/2008	NA	-23.39666	120.1296	Prethopalpus sp. B10		1

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JH0067R	26/08/2009	NA	-23.37915	120.0463	Pauropodidae sp. B07		1
JH0090R	26/08/2009	NA	-23.38052	120.0354	Parajapygidae sp. B26		1
LB022	5/02/2009	NA	-23.37584	120.1811	Cixiidae sp. B02	Yes	1
LB022	5/02/2009	NA	-23.37584	120.1811	Lophoturus madecassus	Yes	2
LB035	4/02/2009	NA	-23.37138	120.1841	Cryptops sp. B09	Yes	1
LB040	5/02/2009	NA	-23.3736	120.1831	Dodecastyla sp. B02	Yes	1
LB040	5/02/2009	NA	-23.3736	120.1831	Phaconeura sp.	Yes	2
LB068	5/02/2009	NA	-23.37086	120.1822	Tyrannochthonius `PSE056`	Yes	1
LB069	4/02/2009	NA	-23.37086	120.1812	Hanseniella sp. B01	Yes	2
LB070	30/11/2008	NA	-23.3718	120.1812	Palpigradi sp. B03	Yes	1
LB084	11/11/2008	NA	-23.37442	120.1791	Hanseniella sp.	Yes	1
LB084	11/11/2008	NA	-23.37442	120.1791	Tyrannochthonius `PSE056`	Yes	1
LB091	11/11/2008	NA	-23.37353	120.1782	Palpigradi sp.	Yes	1
MCM0067	9/09/2009	NA	-23.36523	120.1954	nr Encoptarthria sp. B03	Yes	1
MCM0109	10/11/2008	NA	-23.36538	120.1973	Dodecastyla sp. B02	Yes	1
MCM0114	10/11/2008	NA	-23.36578	120.198	Lophoturus madecassus	Yes	3
MCM0114	4/02/2009	NA	-23.36578	120.198	Nocticola sp.	Yes	2
MCM0116	10/11/2008	NA	-23.36812	120.1991	Lophoturus madecassus	Yes	9
MCM0120	10/11/2008	NA	-23.36532	120.1991	Prethopalpus sp. B09	Yes	1
MCM0120	10/11/2008	NA	-23.36532	120.1991	Pselaphinae sp. B01	Yes	1
MCM0132	19/01/2009	NA	-23.36987	120.202	Lophoturus madecassus	Yes	2
MCM0142	2/02/2009	NA	-23.36603	120.2032	Hanseniella sp. B01	Yes	1
MCM0157	20/10/2008	NA	-23.36778	120.2072	Lophoturus madecassus	Yes	1
MCM0241	27/08/2009	NA	-23.36643	120.1723	nr Encoptarthria sp. B03	Yes	1
MCM0241	27/08/2009	NA	-23.36643	120.1723	Tyrannochthonius `PSE056`	Yes	1
MCM0282	30/01/2009	NA	-23.37087	120.2685	Lophoturus madecassus	Yes	2

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MCM0282	14/08/2009	NA	-23.37087	120.2685	Trinemura sp.	Yes	1
MCM1530	11/11/2008	NA	-23.37495	120.1821	Palpigradi sp. B03	Yes	1
MCM1543	12/11/2008	NA	-23.37129	120.1792	Lophoturus madecassus	Yes	1
MCM1545	9/09/2009	NA	-23.37853	120.1803	Hanseniella sp. B01	Yes	1
MG0057R	12/02/2009	NA	-23.3363	120.0942	Decapauropus tenuis		1
MG0165R	24/03/2009	NA	-23.33366	120.1031	Lechytia `PSE019`		1
MS273	28/08/2009	NA	-23.37525	120.187	Lophoturus madecassus	Yes	1
PI003	23/10/2008	NA	-23.37612	120.2226	Lophoturus madecassus	Yes	1
PI012	23/10/2008	NA	-23.3726	120.2227	Japygidae `DPL002` s.l.	Yes	1
PI012	23/10/2008	NA	-23.3726	120.2227	Tyrannochthonius `PSE057`	Yes	1
PI031	27/06/2020	10467	-23.3756	120.2187	Japygidae `BDP192`	Yes	1
PI044	23/10/2008	NA	-23.373	120.2227	Symphylella sp. B02	Yes	1
PI059	23/10/2008	NA	-23.37426	120.2187	Hanseniella sp. B01	Yes	1
PP023	4/04/2009	NA	-23.38867	120.0209	Palpigradi sp. B03		3
SJ0033R	28/01/2009	NA	-23.39472	120.1146	Nicoletiinae sp.		1
SJ0591R	20/08/2009	NA	-23.39737	120.1658	Palpigradi sp.		1
SJ0591R	27/08/2009	NA	-23.39737	120.1658	Palpigradi sp.		1
SJ0591R	27/08/2009	NA	-23.39737	120.1658	Symphylella sp. B07		1
SJ0591R	8/09/2009	NA	-23.39737	120.1658	Symphylella sp. B07		1
SJ2454RDG	5/03/2020	10467	-23.39461	120.1905	Troglarmadillo sp. B09	Yes	1
WH049	19/06/2009	NA	-23.36539	120.0972	Cixiidae sp. B02		1
WH050	19/06/2009	NA	-23.36251	120.0972	Palpigradi sp. B01		1
WH051	19/06/2009	NA	-23.36353	120.0971	nr Encoptarthria sp. B03		1
WJR001	8/10/2008	NA	-23.38598	120.0321	Lophoproctidae sp.		1
WJR001	8/10/2008	NA	-23.38598	120.0321	Phaconeura sp.		1
WJR001	8/10/2008	NA	-23.38598	120.0321	Phaconeura sp. B04		7

Bore ID	Date Sampled	Survey ID	Latitude	Longitude	Lowest Identification	In Study Area	Number of Specimens
WJR001	8/10/2008	NA	-23.38598	120.0321	Phaconeura sp. B04		69
WJR001	27/01/2009	NA	-23.38598	120.0321	Phaconeura sp.		1
WJR001	27/01/2009	NA	-23.38598	120.0321	Phaconeura sp.		10
WJR001	12/08/2009	NA	-23.38598	120.0321	Phaconeura sp.		1
WRKRC148	9/02/2009	NA	-23.39167	120.3398	Dodecastyla sp. B02	Yes	2
WRKRC148	9/02/2009	NA	-23.39167	120.3398	Palpigradi sp. B01	Yes	7

Appendix 5 – Stygofauna specimens collected in two survey periods (2008-2009 and 2020-2022)

Bore ID	Date Sampled	Survey ID	Latitude	Longitude	Lowest Identification	In Study Area	Number of Specimens
FG2188R	28/04/2008	NA	-23.39288	120.1748	Oligochaeta sp.	Yes	5
FG2190R	28/04/2008	NA	-23.39691	120.1513	Nematoda spp.		1
FG2202R	29/04/2008	NA	-23.3961	120.1044	Nematoda spp.		4
FG2202R	29/04/2008	NA	-23.3961	120.1044	Nematoda spp.		20
FG2204R	29/04/2008	NA	-23.39429	120.1044	Nematoda spp.		22
FG2214R	29/04/2008	NA	-23.39386	120.1044	Nematoda spp.		200
FG2216R	28/04/2008	NA	-23.3942	120.1747	Nematoda spp.	Yes	1
FG2216R	28/04/2008	NA	-23.3942	120.1747	Oligochaeta sp.	Yes	8
FG2219R	28/04/2008	NA	-23.39508	120.1718	Oligochaeta sp.	Yes	5
FG2219R	28/04/2008	NA	-23.39508	120.1718	Oligochaeta sp.	Yes	14
FG2236R	28/04/2008	NA	-23.39647	120.1719	Oligochaeta sp.	Yes	1
FG2339R	28/04/2008	NA	-23.39212	120.1866	Oligochaeta sp.	Yes	12
FG2360R	29/04/2008	NA	-23.39592	120.0927	Nematoda spp.		10
FG2365R	29/04/2008	NA	-23.39455	120.0692	Nematoda spp.		3
FG2365R	29/04/2008	NA	-23.39455	120.0692	Nematoda spp.		15
FG2381R	29/04/2008	NA	-23.3927	120.1162	Nematoda spp.		14
FG2382RDT	29/04/2008	NA	-23.39565	120.0808	Oligochaeta sp.		16
FG2386R	29/04/2008	NA	-23.39007	120.0693	Oligochaeta sp.		4
FG2386R	29/04/2008	NA	-23.39007	120.0693	Oligochaeta sp.		100
FG2150R	30/05/2008	NA	-23.37094	120.1373	Nematoda spp.		1
FG2187R	31/05/2008	NA	-23.39378	120.1748	Enchytraeidae sp.	Yes	1
FG2188R	31/05/2008	NA	-23.39288	120.1748	Enchytraeus sp. AP PSS2 s.l.	Yes	5
FG2219R	31/05/2008	NA	-23.39508	120.1718	Enchytraeus sp. AP PSS2 s.l.	Yes	2
FG2348R	31/05/2008	NA	-23.39671	120.1631	Nematoda spp.		1
FG2352R	30/05/2008	NA	-23.3949	120.1631	Enchytraeidae sp.		3

Bore ID	Date Sampled	Survey ID	Latitude	Longitude	Lowest Identification	In Study Area	Number of Specimens
FG2352R	30/05/2008	NA	-23.3949	120.1631	Nematoda spp.		21
FG2340R	1/06/2008	NA	-23.39268	120.1867	Enchytraeus sp. AP PSS2 s.l.	Yes	18
FG2341R	1/06/2008	NA	-23.39314	120.1866	Enchytraeus sp. AP PSS2 s.l.	Yes	1
SJ0500R	12/08/2008	NA	-23.39166	120.1865	Oligochaeta sp.	Yes	56
EXR0106	9/10/2008	NA	-23.38759	120.0452	Oligochaeta sp.		2
EXR0644	8/10/2008	NA	-23.38316	120.0355	Oligochaeta sp.		9
EXR0789	8/10/2008	NA	-23.38613	120.0328	Oligochaeta sp.		7
EXR1010	9/10/2008	NA	-23.38847	120.0386	Oligochaeta sp.		3
EXR1541R	9/10/2008	NA	-23.38935	120.0386	Nematoda spp.		10
EXR1544R	9/10/2008	NA	-23.39102	120.048	Oligochaeta sp.		48
EXR1676R	8/10/2008	NA	-23.38516	120.0354	Nematoda spp.		2
EXR1677R	8/10/2008	NA	-23.38509	120.0283	Oligochaeta sp.		10
FG2322R	21/10/2008	NA	-23.37731	120.1125	Oligochaeta sp.		30
HH0132R	22/10/2008	NA	-23.37324	120.2159	Nematoda spp.	Yes	1
HH0132R	22/10/2008	NA	-23.37324	120.2159	Oligochaeta sp.	Yes	13
MCM0154	20/10/2008	NA	-23.37053	120.2073	Nematoda spp.	Yes	1
MCM0168	20/10/2008	NA	-23.37081	120.2101	Oligochaeta sp.	Yes	2
PI012	23/10/2008	NA	-23.3726	120.2227	Oligochaeta sp.	Yes	5
PI012	23/10/2008	NA	-23.3726	120.2227	Oligochaeta sp.	Yes	30
EXR0639	25/11/2008	NA	-23.38903	120.0353	Enchytraeus sp. AP PSS2 s.l.		153
EXR0644	26/11/2008	NA	-23.38316	120.0355	Enchytraeus sp. AP PSS2 s.l.		1
EXR0979	25/11/2008	NA	-23.38857	120.021	Enchytraeidae sp.		2
EXR0983	25/11/2008	NA	-23.38822	120.0239	Enchytraeus sp. AP PSS2 s.l.		2
EXR1010	24/11/2008	NA	-23.38847	120.0386	Enchytraeus sp. AP PSS2 s.l.		2
EXR1541R	24/11/2008	NA	-23.38935	120.0386	Enchytraeus sp. AP PSS2 s.l.		8
EXR1544R	24/11/2008	NA	-23.39102	120.048	Enchytraeus sp. AP PSS2 s.l.		1

Bore ID	Date Sampled	Survey ID	Latitude	Longitude	Lowest Identification	In Study Area	Number of Specimens
EXR1677R	26/11/2008	NA	-23.38509	120.0283	Enchytraeus sp. AP PSS2 s.l.		1
EXR1678R	26/11/2008	NA	-23.38593	120.0411	Nematoda spp.		10
FG2201R	26/11/2008	NA	-23.39296	120.081	Enchytraeus sp. AP PSS1 s.l.		1
FG2214R	26/11/2008	NA	-23.39386	120.1044	Enchytraeus sp. AP PSS2 s.l.		6
FG2338R	27/11/2008	NA	-23.37882	120.1155	Enchytraeidae sp.		1
HH003	10/11/2008	NA	-23.36772	120.1973	Nematoda spp.	Yes	3
HH004	10/11/2008	NA	-23.36783	120.1981	Nematoda spp.	Yes	17
HH0115R	12/11/2008	NA	-23.37222	120.1753	Nematoda spp.	Yes	3
HH0118R	11/11/2008	NA	-23.37018	120.1745	Nematoda spp.	Yes	5
HH049	10/11/2008	NA	-23.36652	120.2003	Nematoda spp.	Yes	19
HH050	10/11/2008	NA	-23.36604	120.2012	Nematoda spp.	Yes	4
HSJ0003	21/11/2008	NA	-23.39309	120.1514	Enchytraeus sp. AP PSS2 s.l.		1
LB017	11/11/2008	NA	-23.37486	120.1791	Nematoda spp.	Yes	6
PP023	25/11/2008	NA	-23.38867	120.0209	Nematoda spp.		2
W262	21/11/2008	NA	-23.40639	120.1384	Nematoda spp.		1
W262	21/11/2008	NA	-23.40639	120.1384	Origocandona `BOS099`		9
WJR001	25/11/2008	NA	-23.38598	120.0321	Enchytraeidae sp.		19
EJR0001	28/01/2009	NA	-23.37969	120.2455	Nematoda spp.	Yes	2
EJR0015	28/01/2009	NA	-23.37216	120.2281	Nematoda spp.	Yes	100
EJR0019	30/01/2009	NA	-23.37497	120.2339	Nematoda spp.	Yes	10
MCM0256	28/01/2009	NA	-23.38167	120.2399	Nematoda spp.	Yes	100
EXR0800	6/02/2009	NA	-23.3847	120.2893	Oligochaeta sp.	Yes	2
EXR0801	6/02/2009	NA	-23.38427	120.3012	Oligochaeta sp.	Yes	10
EXR1358	9/02/2009	NA	-23.3899	120.345	Oligochaeta sp.	Yes	24
EXR1461R	9/02/2009	NA	-23.38804	120.3391	Oligochaeta sp.	Yes	1
EXR1562R	6/02/2009	NA	-23.38809	120.2892	Nematoda spp.	Yes	1

Bore ID	Date Sampled	Survey ID	Latitude	Longitude	Lowest Identification	In Study Area	Number of Specimens
EXR1563R	6/02/2009	NA	-23.38622	120.3067	Nematoda spp.	Yes	100
EXR1568R	10/02/2009	NA	-23.38886	120.3306	Oligochaeta sp.	Yes	34
LB019	5/02/2009	NA	-23.37398	120.1791	Nematoda spp.	Yes	1
MG0042R	11/02/2009	NA	-23.33692	120.1242	Nematoda spp.		5
MG0055R	12/02/2009	NA	-23.3361	120.1001	Nematoda spp.		5
MG0076R	12/02/2009	NA	-23.33441	120.0913	Nematoda spp.		7
MG0086R	12/02/2009	NA	-23.33582	120.0971	Nematoda spp.		1
MG0109R	12/02/2009	NA	-23.33468	120.0767	Nematoda spp.		1
MG0130R	11/02/2009	NA	-23.33361	120.1179	Nematoda spp.		2
MG0130R	11/02/2009	NA	-23.33361	120.1179	Oligochaeta sp.		4
MG0159R	11/02/2009	NA	-23.3311	120.1091	Nematoda spp.		1
MG0172R	12/02/2009	NA	-23.33667	120.0972	Nematoda spp.		11
MG0172R	12/02/2009	NA	-23.33667	120.0972	Nematoda spp.		14
MG0182R	12/02/2009	NA	-23.33179	120.1031	Nematoda spp.		9
EBR0011	24/03/2009	NA	-23.33317	120.106	Billibathynella cassidis		2
EBR0011	24/03/2009	NA	-23.33317	120.106	Kruptus `AMP004`		3
EXR1678R	24/03/2009	NA	-23.38593	120.0411	Oligochaeta sp.		10
EXR0789	3/04/2009	NA	-23.38613	120.0328	Enchytraeus sp. AP PSS2 s.l.		12
EXR0983	4/04/2009	NA	-23.38822	120.0239	Ostracoda sp. unident.		1
EXR1010	2/04/2009	NA	-23.38847	120.0386	Enchytraeus sp. AP PSS2 s.l.		2
EXR1677R	4/04/2009	NA	-23.38509	120.0283	Enchytraeus sp. AP PSS2 s.l.		33
EXR1677R	4/04/2009	NA	-23.38509	120.0283	Notacandona gratia		3
PP023	4/04/2009	NA	-23.38867	120.0209	Cyclopoida sp.		1
HSJ0018	18/05/2009	NA	-23.40573	120.1393	Parastenocaris `COP001`		156
May09unknown3	18/05/2009	NA	-23.40811	120.1379	Amphipoda sp.		2
May09unknown3	18/05/2009	NA	-23.40811	120.1379	Diacyclops humphreysi s.l.		10

Bore ID	Date Sampled	Survey ID	Latitude	Longitude	Lowest Identification	In Study Area	Number of Specimens
May09unknown3	18/05/2009	NA	-23.40811	120.1379	Notacandona gratia		42
May09unknown3	18/05/2009	NA	-23.40811	120.1379	Parastenocaris `COP001`		1
May09unknown4	18/05/2009	NA	-23.40942	120.1376	Billibathynella cassidis		1
May09unknown4	18/05/2009	NA	-23.40942	120.1376	Diacyclops humphreysi s.l.		28
May09unknown4	18/05/2009	NA	-23.40942	120.1376	Ostracoda sp. unident.		5
May09unknown4	18/05/2009	NA	-23.40942	120.1376	Parastenocaris sp.		1
May09unknown6	18/05/2009	NA	-23.41078	120.1372	Diacyclops humphreysi s.l.		17
May09unknown6	18/05/2009	NA	-23.41078	120.1372	Kruptus `AMP004`		1
May09unknown6	18/05/2009	NA	-23.41078	120.1372	Notacandona gratia		20
May09unknown6	18/05/2009	NA	-23.41078	120.1372	Phreodrilidae sp.		1
May09unknown8	19/05/2009	NA	-23.409	120.1377	Bathynellidae sp.		2
May09unknown8	19/05/2009	NA	-23.409	120.1377	Diacyclops humphreysi s.l.		30
May09unknown8	19/05/2009	NA	-23.409	120.1377	Kruptus `AMP004`		1
May09unknown8	19/05/2009	NA	-23.409	120.1377	Oligochaeta sp.		2
May09unknown8	19/05/2009	NA	-23.409	120.1377	Parastenocaris `COP001`		1
May09unknown9	19/05/2009	NA	-23.40725	120.1382	Diacyclops humphreysi s.l.		1
May09unknown9	19/05/2009	NA	-23.40725	120.1382	Enchytraeus sp. AP PSS2 s.l.		2
May09unknown9	19/05/2009	NA	-23.40725	120.1382	Ostracoda sp. unident.		1
W262	18/05/2009	NA	-23.40639	120.1384	Bathynellidae sp.		2
W262	18/05/2009	NA	-23.40639	120.1384	Diacyclops humphreysi s.l.		90
W262	18/05/2009	NA	-23.40639	120.1384	Notacandona gratia		70
W262	18/05/2009	NA	-23.40639	120.1384	Parastenocaris `COP001`		6
W262	18/05/2009	NA	-23.40639	120.1384	Phreodrilidae sp.		3
FG1790DT	19/06/2009	NA	-23.36656	120.0973	Oligochaeta sp.		1
FG1790DT	19/06/2009	NA	-23.36656	120.0973	Oligochaeta sp.		5
FG1790DT	19/06/2009	NA	-23.36656	120.0973	Oligochaeta sp.		50

Bore ID	Date Sampled	Survey ID	Latitude	Longitude	Lowest Identification	In Study Area	Number of Specimens
FG2509RDT	19/06/2009	NA	-23.36465	120.0971	Oligochaeta sp.		1
FG2227R	20/08/2009	NA	-23.38712	120.0576	Origocandona `BOS099`		3
SJ0330R	20/08/2009	NA	-23.3963	120.1835	Diacyclops sp.	Yes	1
W262	20/08/2009	NA	-23.40639	120.1384	Diacyclops humphreysi s.l.		10
W262	20/08/2009	NA	-23.40639	120.1384	Kruptus `AMP004`		1
W262	20/08/2009	NA	-23.40639	120.1384	Origocandona `BOS099`		30
W262	27/08/2009	NA	-23.40639	120.1384	Diacyclops humphreysi s.l.		8
W262	27/08/2009	NA	-23.40639	120.1384	Origocandona `BOS099`		3
W262	28/08/2009	NA	-23.40639	120.1384	Diacyclops humphreysi s.l.		5
W262	28/08/2009	NA	-23.40639	120.1384	Kruptus `AMP004`		1
EJR0001	24/09/2009	NA	-23.37969	120.2455	Ostracoda sp. unident.	Yes	1
W262	10/09/2009	NA	-23.40639	120.1384	Diacyclops humphreysi s.l.		5
W262	10/09/2009	NA	-23.40639	120.1384	Kruptus `AMP004`		1
W262	10/09/2009	NA	-23.40639	120.1384	Ostracoda sp. unident.		20
W262	23/09/2009	NA	-23.40639	120.1384	Kruptus `AMP004`		2
W262	23/09/2009	NA	-23.40639	120.1384	Ostracoda sp. unident.		2
W2750	9/09/2009	NA	-23.40811	120.1371	Diacyclops humphreysi s.l.		1
W2750	9/09/2009	NA	-23.40811	120.1371	Ostracoda sp. unident.		10
W2750	9/09/2009	NA	-23.40811	120.1371	Paramelitidae sp. B34		1
EJ1124R	5/03/2020	10467	-23.36823	120.2609	Cyprinotus kimberleyensis s.l.	Yes	1
HCM0007	7/03/2020	10467	-23.37777	120.2829	Nematoda spp.	Yes	1
HCM0007	7/03/2020	10467	-23.37777	120.2829	Schizopera `BHA285`	Yes	1
HCM0021	7/03/2020	10467	-23.38584	120.2781	Tubificidae `BOL074`	Yes	2
HH1267R	9/03/2020	10467	-23.36402	120.19	Enchytraeidae `3 bundle` s.l. (short sclero)	Yes	1
HH1267R	9/03/2020	10467	-23.36402	120.19	Microcyclops varicans	Yes	1
HH1267R	9/03/2020	10467	-23.36402	120.19	Nematoda spp.	Yes	7

Bore ID	Date Sampled	Survey ID	Latitude	Longitude	Lowest Identification	In Study Area	Number of Specimens
HH2120R	10/03/2020	10467	-23.36848	120.1945	Enchytraeidae `2 bundle` s.l. (long thin 2 per seg)	Yes	5
HH2120R	10/03/2020	10467	-23.36848	120.1945	Enchytraeidae sp. E06-05	Yes	1
HH2120R	10/03/2020	10467	-23.36848	120.1945	Phreodrilidae sp. AP SVC s.l.	Yes	1
HH2121R	10/03/2020	10467	-23.36802	120.1945	Enchytraeidae sp. E12-02	Yes	15
HH2781R	9/03/2020	10467	-23.37911	120.2305	Enchytraeidae `3 bundle` s.l. (short sclero)	Yes	1
PI031	9/03/2020	10467	-23.3756	120.2187	Cyprinotus kimberleyensis s.l.	Yes	6
SJ2634DG	5/03/2020	10467	-23.39236	120.1943	Enchytraeidae `2 bundle` s.l. (short sclero 4 per seg)	Yes	1
CM0077R	28/06/2020	10467	-23.37338	120.2705	Nematoda spp.	Yes	1
EJ0618R	27/06/2020	10467	-23.37839	120.2315	Enchytraeidae sp. E06-05	Yes	28
EJ0639R	27/06/2020	10467	-23.37564	120.2325	Enchytraeidae `3 bundle` s.l. (short sclero)	Yes	1
EJ0868R	28/06/2020	10467	-23.38534	120.2501	Enchytraeidae `2 bundle` s.l. (short sclero 4 per seg)	Yes	1
HCM0021	30/06/2020	10467	-23.38584	120.2781	Aeolosoma sp.	Yes	1
HCM0021	30/06/2020	10467	-23.38584	120.2781	Pristina longiseta	Yes	2
HCM0025	30/06/2020	10467	-23.38592	120.3112	Nematoda spp.	Yes	11
HH0856R	25/06/2020	10467	-23.3839	120.2063	Nematoda spp.	Yes	1
HH1267R	29/06/2020	10467	-23.36402	120.19	Atopobathynella `BSY241`	Yes	9
HH1267R	29/06/2020	10467	-23.36402	120.19	Phreodrilidae `BOL084`	Yes	1
HH1272R	29/06/2020	10467	-23.36256	120.1899	Dero furcata	Yes	2
HH1272R	29/06/2020	10467	-23.36256	120.1899	Enchytraeidae `2 bundle` s.l. (short sclero 4 per seg)	Yes	7
HH1272R	29/06/2020	10467	-23.36256	120.1899	Microcyclops varicans	Yes	17
HH2092R	29/06/2020	10467	-23.37168	120.1915	Nematoda spp.	Yes	1
HH2120R	27/06/2020	10467	-23.36848	120.1945	Enchytraeidae `2 bundle` s.l. (short sclero 4 per seg)	Yes	1
HH2120R	27/06/2020	10467	-23.36848	120.1945	Pristina longiseta	Yes	1

Bore ID	Date Sampled	Survey ID	Latitude	Longitude	Lowest Identification	In Study Area	Number of Specimens
HH2121R	27/06/2020	10467	-23.36802	120.1945	Enchytraeidae `2 bundle` s.l. (short sclero 4 per seg)	Yes	6
EJ0532R	8/10/2022	10467	-23.38326	120.2455	Enchytraeidae sp. E12-02	Yes	5
EJ1051R	9/10/2022	10467	-23.3822	120.2579	Enchytraeidae `2 bundle` s.l. (short sclero 4 per seg)	Yes	6
EJ1258R	6/10/2022	10467	-23.38205	120.232	Enchytraeidae sp. E12-02	Yes	10
HCM0052	5/10/2022	10467	-23.38583	120.3869	Nematoda spp.	Yes	2
HCM0053	6/10/2022	10467	-23.38579	120.3216	Enchytraeidae `2 bundle` s.l. (short sclero 2 per seg)	Yes	1
HCM0060	6/10/2022	10467	-23.36455	120.3282	Nematoda spp.	Yes	10
HCM0060	6/10/2022	10467	-23.36455	120.3282	Pristina aequiseta	Yes	2