



Conference Abstract

# Research and stakeholders: Bathynellidae (Bathynellacea, Crustacea) case studies in mining areas. New genera from Australia and the enigma of the “cosmopolitan” *Bathynella* genus

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## Abstract

It seems obvious to say that research can provide benefits to multiple stakeholders and that stakeholder involvement is more often than not essential for research to proceed. Concrete examples of these mutual dependencies are valuable, where industry, government agencies and biological studies increase each others' potential and efficiencies.

In the past 20 years the number of subterranean taxa discovered in Australia, especially in the Pilbara bioregion, has increased consistently thanks to environmental and biological surveys, often associated with mining development, but the investment on research needed to understand this vast biodiversity is far from what is required.

The family Bathynellidae (Crustacea) occur in most Australian aquifers, but collecting them is not simple and their study and identification are very difficult due to their small and fragile bodies and their conservative morphology. Additionally, the poor and incomplete

description of the type genus and species of this family (*Bathynella natans* Vejdovsky, 1882) have led to the assignment of many species occurring around the world, including Australia, to this genus. The taxonomic framework is therefore not well defined and their biodiversity and distribution assessments needed by government agencies become challenging. This research started with a collaboration with different environmental consultants who provided a conspicuous number of specimens collected through several years, which allowed an accurate analysis of specific aquifers. Studies of Bathynellidae populations occurring in different areas produced results useful to inform mining companies on species distribution and groundwater connectivity, underling the importance of cooperation among stakeholders. Morphological and molecular data reveal new genera and species with fascinating relationships, and the collection of some fresh material from type localities belonging to *Bathynella* clarifies the position of this “cosmopolitan” genus.

This example demonstrates (again) the value of research as both underpinning, and supplementing, existing knowledge to improve the management and monitoring of the delicate subterranean environment and its resources.

## **Keywords**

Crustacea, Bathynellidae, Pilbara, stygofauna, Environmental Protection, Western Australia

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