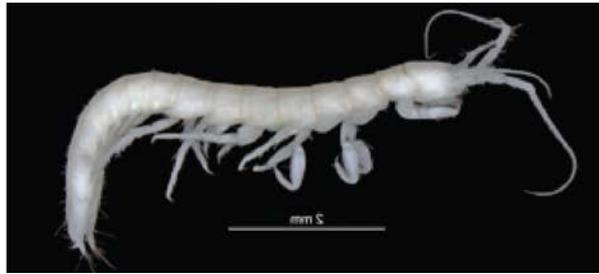
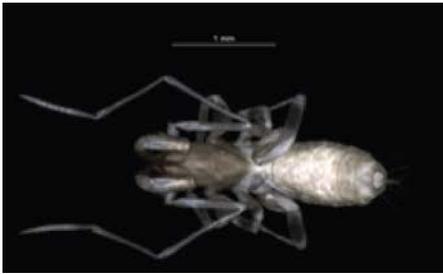


Mulga Downs Project

Hancock Prospecting



CLIENT:

Hancock Prospecting Pty Ltd

LOCATION:

Pilbara

SERVICES:

- Level 2 subterranean fauna survey
- Environmental impact assessment
- Risk-based habitat assessment
- Taxonomy, DNA barcoding

KEY ACHIEVEMENTS:

- Surveys completed within set timelines and budgets
- Rich troglodfauna communities discovered dominated by new species
- Stygofauna shown to be utilising both emergent (from water table) Marra Mamba deposits, and surrounding Alluvium
- Low level impact inferred using risk-based model for environmental impact assessment

A subterranean fauna survey conducted for the project revealed a diverse subterranean fauna community in the Mulga Downs area. Using a combination of species records and surface geology, Phoenix developed a risk based model to assess the likely distribution of troglodfauna communities beyond the impact area.

The Level 2 survey was undertaken concurrently for both troglodfauna and stygofauna to build on a data previously derived from a small scale pilot study. Surveys were undertaken over two seasons from bores inside and outside of the proposed impact area.

Stygofauna records from the pilot study were largely new species but these were found to be fairly uniformly distributed and presented no difficulties for the project. Troglodfauna were more problematic when the client approached Phoenix, with a number of species seemingly confined to single locations in the pilot study. Consequently, bore scraping was implemented in order to increase the effectiveness of the survey and resulting in a greater number of species and individuals than would have been expected compared with the conventional trapping methods that had been employed previously.

Species level identification challenges were overcome using DNA Barcoding analyses, allowing for the most complete characterisation of the fauna in terms of regional context.

A rich and abundant subterranean fauna was discovered. Troglodfauna initially appeared to have uniform distribution; however, analysis of the survey data with surface geology data identified troglodfauna diversity hot-spots. The presence of singleton and doubleton (i.e. only one or two records of a species) troglodfauna made species habitat determinations difficult based solely on species records.

The environmental impact assessment was undertaken using a risk based approach. The model proposed species and community distributions based on the incorporation of the full biological dataset and detailed, local surface geology data and interpretation to extrapolate likely habitat extents both within and beyond the proposed development footprint. The result being that many species seemingly confined would be expected to be recorded far beyond the footprint of the project.



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