



Australia's National
Science Agency

GISERA | Gas Industry Social and Environmental Research Alliance

Progress report

Examination of stygofauna ecosystems of the Beetaloo Sub-basin



Australian Government
Department of Industry, Science,
Energy and Resources



Supported by
Government of
South Australia



Progress against project milestones

Progress against milestones/tasks are approved by the GISERA Director, acting with authority in accordance with the [GISERA Alliance Agreement](#).

Progress against project milestones/tasks is indicated by two methods: Traffic light reports and descriptive Project schedule reports.

1. Traffic light reports in the Project Schedule Table below show progress using a simple colour code:

- **Green:**

- Milestone fully met according to schedule.
- Project is expected to continue to deliver according to plan.
- Milestone payment is approved.

- **Amber:**

- Milestone largely met according to schedule.
- Project has experienced delays or difficulties that will be overcome by next milestone, enabling project to return to delivery according to plan by next milestone.
- Milestone payment is withheld.
- Milestone payment withheld for second of two successive amber lights; project review initiated and undertaken by GISERA Director.

- **Red:**

- Milestone not met according to schedule.
- Problems in meeting milestone are likely to impact subsequent project delivery, such that revisions to project timing, scope or budget must be considered.
- Milestone payment is withheld.
- Project review initiated by GISERA Director.

2. Progress Schedule Reports outline task objectives and outputs and describe, in the 'progress report' section, the means and extent to which progress towards tasks has been made.

Project schedule table

TASK NUMBER	TASK DESCRIPTION	SCHEDULED START	SCHEDULED FINISH	COMMENT
1	Knowledge discovery phase	01 Jul 22	30 Sept 22	Completed.
2	Planning and approvals for drilling of observation bores + drilling contractor procurement	1 Oct 22	30 Sept 23	
3	Field trip 1 – initial campaign	1 Oct 22	29 Feb 23	Completed.
4	Field trip 2 – wide-scale campaign	1 Apr 2023	29 Feb 24	
5	Construct observation bores for Stygofauna	1 Jul 23	29 Feb 24	
6	Field trip 3 – small, targeted campaign	1 Mar 24	31 May 24	
7	Analysis and reporting	01 Nov 22	31 Jul 24	
8	Communicate findings to stakeholders	Full duration of project		

Project schedule report

TASK 1: Knowledge discovery phase

BACKGROUND

While some work has now been carried out on Stygofauna in the Beetaloo Sub-basin, along with a significant amount of work into the ground water system, it will be important to ensure all the relevant information is captured prior to commencing work. It is important that this knowledge base, combined with the latest findings from current projects in the NT inform the proposed activities and that they will address the important issues associated with industry. The task involves a workshop with industry, stygofauna and groundwater experts to elicit what regulators and industry need to know to make decisions.

TASK OBJECTIVES

- 1) collate all relevant groundwater and stygofauna literature
- 2) carry our work shop that includes evaluation of the proposed scope of works, ensuring works address industry needs

TASK OUTPUTS AND SPECIFIC DELIVERABLES:

A document addressing task objectives.

PROGRESS REPORT

A presentation on the project was given to a small group of stakeholders on 17 October 2023. This presentation set the scene for engaging with relevant stakeholders, and the opportunity to make further input to the direction of the project.

The knowledge gathering phase is complete. The project team has a very extensive of the hydrochemistry and physical properties of bores relevant to this project. These data have been aggregated into a database (Excel spread sheet) and combined with all current knowledge on the distribution of stygofauna across the Beetaloo Sub-basin.

This database is most comprehensive data set on the groundwater and subterranean biology of the Beetaloo biota and is now being used to inform future activities of the project.

TASK 2: Planning and approvals for drilling of observation bores + drilling contractor procurement

This task is due for completion September 2023.

TASK 3: Field trip 1 (initial campaign)

BACKGROUND

The previous stygofauna sampling program provided a snapshot of their presence in a small number of bores. However, whether the distribution is the result of specific environmental requirements, sampling artefacts, or some combination of the two is unclear. This task sets out a

structured process to examine the knowledge gaps associated with stygofauna and their distribution.

The task involves an initial field campaign, carrying out a very detailed examination of up to 6 bores known to harbour stygofauna and those where stygofauna are known to be absent. Outputs will be used to inform a second field campaign (task 4). An internal workshop of technical experts will be engaged to provide commentary of the second field campaign (task 4).

TASK OBJECTIVES

- 1) Carry out an initial field campaign that targets bores known to harbour stygofauna as well as an equal number of bores where stygofauna have not previously been detected.
- 2) Sample for stygofauna, while simultaneously carrying out detailed analysis of the physical and chemical aspects of the subsurface and ground water.

TASK OUTPUTS AND SPECIFIC DELIVERABLES:

- 1) Databases of stygofauna observations.
- 2) Database of relevant physical properties of the regions associated with the bores and groundwater chemistry.
- 3) Plan for second field campaign (task 4).

PROGRESS REPORT

Task 3 has been completed. Stygofauna could be retrieved from bores previously found to have stygofauna present (fig 1) and were not present in bores that did not possess stygofauna during previous sampling campaigns.

Water chemistry was determined for all bores sampled and sampling approaches, such as dissolved oxygen and salinity profiling throughout the bore were also trialled during the field trip. These data have also been used to update database details for Task 1.



Fig 1. Shrimp collected as part of task 3


Planning for field campaign 2 is well underway and will include intense water quality sampling, based on scoping methods from task 3, down hole photography, as two examples of additional approaches to be carried out in Task 4.

Variations to Project Order

Changes to research Project Orders are approved by the GISERA Director, acting with authority, in accordance with the [GISERA Alliance Agreement](#). Any variations above the GISERA Director’s delegation require the approval of the relevant GISERA Research Advisory Committee.

The table below details variations to research Project Order.

Register of changes to Research Project Order

DATE	ISSUE	ACTION	AUTHORISATION
22/06/23	The project team wish to proceed with the proposed wide-scale field campaign (task 4) and then conduct the stage gate/decision point presentation to the GISERA NT Research Advisory Committee in November 2023.	<ul style="list-style-type: none">• Milestone 2 delivery date extended from September 2023 to November 2023• Milestone 5 commencement date pushed back from July 2023 to December 2023 and delivery date extended from February 2024 to June 2024• State gate/decision point moved to November 2023.	

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GISERA is a collaboration between CSIRO, Commonwealth and state governments and industry established to undertake publicly-reported independent research.

The purpose of GISERA is to provide quality assured scientific research and information to communities living in gas development regions focusing on social and environmental topics including: groundwater and surface water, greenhouse gas emissions, biodiversity, land management, the marine environment, and socio-economic impacts. The governance structure for GISERA is designed to provide for and protect research independence and transparency of research.