Australia's National
Science Agency

GISERA | Gas Industry Social and Environmental Research Alliance

Progress report

Identifying drought refuges for terrestrial species in the Cooper Basin

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	Identify focal species of plants and animals	2 Sept 2024	24 Dec 2024	Completed
2	Assess geospatial data on the focal species to identify important habitat during dry periods	2 Jan 2025	28 Mar 2025	Completed
3	Undertake field surveys of potential drought refuges of focal species.	31 Mar 2025	28 Feb 2026	
4	Measure habitat attributes and assess habitat condition of drought refuges	1 May 2025	30 Apr 2026	
5	Develop a methodology for assessment of habitat quality condition at drought refuges for each focal species	1 Mar 2026	30 Jun 2026	
6	Project reporting	2 Sept 2024	30 Jun 2026	
7	Communicate project objectives, progress and findings to stakeholders	2 Sept 2024	30 Jun 2026	

Project schedule report

TASK 1: Identify focal species of plants and animals

BACKGROUND

The GBA prioritised 12 threatened species (4 birds, 3 mammals, 5 plants) as the focus of causal pathway assessment. However, other endemic or near-endemic species to the Cooper Basin may be valued by the community. Of these 2 groups of species only a subset will be chosen to focus on in this project. The species chosen will be those expected to occupy drought refuges and that will occur within areas of high prospectivity for onshore gas development.

TASK OBJECTIVES

To examine existing reports and consult with interested stakeholders to develop a list of threatened and significant species in the Cooper Basin that occupy terrestrial environments and are likely to depend on drought refuges for continued survival and resilience.

TASK OUTPUTS AND SPECIFIC DELIVERABLES:

A list of target focal species that will be the basis of the remaining tasks for the project.

There are no other specific deliverables for this task; however, the methods and outcomes will be discussed in the final report for the project.

PROGRESS REPORT

This task was completed on 11th December 2024. The final list of six species was developed from a candidate list of 31 animals and five plants.

TASK 2: Assess geospatial data on the focal species to identify important habitat during dry periods

BACKGROUND

A range of databases hold location records of the focal species that will be determined in task 1. Most of these data have not been systematically collected and none have been interrogated with the aim of obtaining the location of drought refuges. Most species in the study area occur widely during wet (boom) periods when primary productivity is high. In contrast, records during the long intervening dry periods are rarer. Database searches will be carried out to identify those sites that are only occupied during dry periods. This will be done by accessing historical rainfall data and determining the occurrence of dry periods. Records during wet periods will be filtered out of the search for each species. This will produce information of potential drought refuges of each of the focal species.

TASK OBJECTIVES

To obtain information on the geospatial locations that are potentially drought refuges of each of the target species

TASK OUTPUTS AND SPECIFIC DELIVERABLES:

A database that for each of the focal species has the locations of potential drought refuges within the study area. The results will be discussed in the final report for the project. There are no specific deliverables for this task; however, mapping outputs will be used in subsequent tasks.

PROGRESS REPORT

This milestone is complete.

Data has been obtained from publicly accessible sources including Atlas of Living Australia. Other data sources have been pursued with varying success.

TASK 3: Undertake field surveys of potential drought refuges of focal species.

BACKGROUND

The desktop assessment in task 2 will identify the geospatial location of a number of potential drought refuges for each species. Field surveys in each location are needed to determine whether the species is present. These need to be undertaken during periods of low primary productivity (dry periods), hence the long duration of this task. The study design will include multiple visits to each location. Surveys will be undertaken using methods that are appropriate for the target species at each location. These methods will vary and depend on the composition of the final list of focal species but are likely to include active searches, call playback, trapping and spotlighting.

TASK OBJECTIVES

To undertake field surveys to determine whether the target species is currently occupying each of the potential drought refuges.

TASK OUTPUTS AND SPECIFIC DELIVERABLES:

Knowledge of the location of drought refuges of focal species within the study area in the Cooper Basin.

A specific deliverable will be geospatial data on the spatial extent of each drought refuge identified during this task. These data will be supplied to the company that is the holder of the exploration licence for each location.

PROGRESS REPORT

This task will be completed February 2026.

TASK 4: Measure habitat attributes and assess habitat condition of drought refuges.

BACKGROUND

To facilitate future efforts to find the focal species, especially during environmental assessments for onshore gas development, it is important to characterise the key components of the drought refuges for each species that are identified in task 3. At each drought refuge a range of environmental variables will be measured including:

- structural and floristic components of the vegetation;
- soil type and condition;
- fire history; and
- disturbance regime including presence of potential threats.

This will enable common features of drought refuges to be recognised and will assist in future survey work. These measurements should be taken as soon as possible after the target species is located at a site.

TASK OBJECTIVES

There are two objectives as follows:

- To determine common features of the drought refuges of each focal species and, thus, to build a model of how to identify drought refuges of that species; and
- To assess habitat condition at each individual drought refuge.

TASK OUTPUTS AND SPECIFIC DELIVERABLES:

The main output from this task will be a detailed description of the characteristics of the drought refuges of each focal species.

PROGRESS REPORT

This task will be completed April 2026.

TASK 5: Develop a methodology for assessment of habitat quality condition at drought refuges for each focal species.

BACKGROUND

Habitat quality assessment is integral to assessing both environmental impacts from a proposed development and the suitability of offset proposals. While existing, established methodologies exist for some species, the majority of threatened species prioritised in the GBA Cooper assessment are not adequately accounted for by existing habitat assessment methods. The Environment Assessment branch of the Australian Government's Department of Climate Change, Energy, the Environment and Water (DCCEEW) acknowledges that this results in protracted negotiations with proponents and suboptimal environmental outcomes.

Given that the majority (probably all) of the focal species to be selected in task 1 of this project will not be accounted for by existing habitat assessments and the need for this information for both proponents and regulators of the onshore gas industry, this task has been added to here.

TASK OBJECTIVES

To produce a habitat quality assessment methodology, focussed on dry period habitat, for each focal species covered in this project that is also listed nationally as threatened. In other words, the methodology will be written for each species that could trigger a referral under the *Environment Protection and Biodiversity Conservation Act* (EPBCA).

TASK OUTPUTS AND SPECIFIC DELIVERABLES:

A series of habitat quality assessment methodologies prepared at a sufficient level of detail to be submitted for potential use to the Australian Government (Environment Assessment Queensland branch, Nature Positive Regulation Division, DCCEEW).

PROGRESS REPORT

This task will be completed June 2026.

TASK 6: Project Reporting

BACKGROUND

All aspects of reporting are covered in this task.

TASK OBJECTIVES

To provide the necessary reporting as required.

TASK OUTPUTS AND SPECIFIC DELIVERABLES:

1) Preparation of a final report outlining the scope, methodology, scenarios, assumptions, findings and any suggestions/options for future research;

2) Following CSIRO ePublish review, the report will be submitted to the GISERA Director for final approval; and

3) Provide 6 monthly progress updates to GISERA office.

PROGRESS REPORT

This task will be completed June 2026.

TASK 7: Communicate project objectives, progress and findings to stakeholders.

BACKGROUND

Communication of GISERA's research is an important component of all research projects. The dissemination of project objectives, key findings and deliverables to relevant and diverse audiences allows discourse and decision making within and across multiple stakeholder groups.

TASK OBJECTIVES

Communicate project objectives, progress and findings to stakeholders through meetings, Knowledge Transfer Session, fact sheets, project reports and journal article/s, in collaboration with GISERA Communication Team.

TASK OUTPUTS AND SPECIFIC DELIVERABLES:

Communicate project objectives, progress and results to GISERA stakeholders according to standard GISERA project procedures, which may include, but are not limited to:

1) Engagement with an established Technical Advisory Group.

2) Two project factsheets: A fact sheet will be developed at commencement of a project, and another that will include peer-reviewed results and implications will be developed at completion of project. Both to be published to the GISERA website.

3) Preparation of an article for GISERA newsletter and other media outlets as advised by GISERA's communications team.

4) Project reporting.

5) Knowledge Transfer session with Government/Gas Industry.

6) Peer reviewed scientific manuscript ready for submission to relevant journal.

7) Presentation of research results at an Australian and International Conference.

8) Development of project-specific communication tool, where appropriate.

PROGRESS REPORT

This task will be completed June 2026.

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

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Contact us

1300 363 400
+61 3 9545 2176
csiro.au/contact
csiro.au

For further information

1300 363 400
gisera.csiro.au

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.