



Natural
**Hazards
Research**
Australia

Call for Expressions of Interest

T8-A8: Quantifying and predicting bushfire risk following large-scale drought-induced vegetation die-off

Expressions of Interest due **5pm AEDT 2 April 2025**
to research@naturalhazards.com.au



Australian Government

naturalhazards.com.au

Australia's leading research centre for natural hazard resilience and disaster risk reduction

Overview

Natural Hazards Research Australia (hereafter the Centre) is seeking Expressions of Interest (EOI) from project teams for the following project:

T8-A8 Quantifying and predicting bushfire risk following large-scale drought-induced vegetation die-off

Project description	<p>Large areas of temperate Australia, including Southwestern Australia, parts of South Australia and Tasmania, experienced significant, widespread and severe heatwave and drought-induced vegetation die-off in 2024. However, how the bushfire risk has been altered as a result is unknown – this is a clear and critical gap in knowledge.</p> <p>This project aims to understand the impacts of heatwave and drought on bushfire disaster risk by:</p> <ol style="list-style-type: none"> 1. Quantifying fuel characteristics for the range of vegetation types affected by vegetation die-off across southwestern Australia 2. Calculating potential fire behaviour under a range of scenarios 3. Identifying the interactions between climate change and bushfire risk by utilising remote sensing and heatwave/drought die-off research sites to project future die-off and bushfire risk.
Estimated duration	1.5 years
Budget	<p>The budget envelope for this project is \$250,000 to \$300,000 (ex GST)</p> <p>The research team should note that this is a competitive process. Expression of Interest submissions will be assessed on value for money and justification for any funds requested.</p>
Related national research priorities¹	<ul style="list-style-type: none"> → Sustainable, safe and healthy natural landscapes: → Resilient built environment → Resilient communities → Situational awareness → Operational response and innovation → Evidence-informed policy, strategy and foresight
Related Centre research priorities for 2024–26²	<ul style="list-style-type: none"> → Understanding and mitigating risk → Environmental solutions → Social equity

1 Natural Hazards Research Australia (2022) National research priorities for disaster risk reduction and community resilience to the impacts of natural hazards, accessible at www.naturalhazards.com.au/sites/default/files/2022-05/NatHazResAus_ResearchPriorities_FA02.pdf

2 Natural Hazards Research Australia (2024) *Biennial Research Plan 2024–26*, accessible at <https://www.naturalhazards.com.au/sites/default/files/2024-07/NHRA%20ResearchPlan24%E2%80%9326%2004.pdf>

Supporting organisations

- Alcoa
- City of Armadale
- Shire of Augusta/Margaret River
- City of Kalamunda
- Department of Biodiversity, Conservation and Attractions (DBCA)
- Department of Fire and Emergency Services (DFES)
- Forest Products Commission (FPC)

Centre contact

For any questions regarding this Call for EOIs, please email research@naturalhazards.com.au.

Online project briefing

For more information or questions, an online project briefing webinar will be held at **2:00pm AEDT on 18 March 2025**

Submission of EOI

EOIs must be prepared using the Centre's [EOI submission form](#) and [Budget Template](#). EOIs are to be submitted to research@naturalhazards.com.au by **5:00pm AEDT on 2 April 2025**

Statement of requirements

Background and context

The need for this project arose because there is a potential of increased bushfire risk following the 2024 drought and heatwave-induced die-off of an estimated 100,000ha in southwestern Australia.

A wide range of stakeholders have expressed concern about the drought-induced large-scale vegetation die-off in terms of the impacts on fuel characteristics and biodiversity, but also concern about the longer-term impacts of such events and whether we should expect these events to occur at a higher frequency, severity and intensity in the future. Southwestern Australia, parts of South Australia and Tasmania have each experienced significant widespread and severe heatwaves and drought-induced vegetation die-off in the first half of 2024.

However, how the bushfire risk has been altered as a result is unknown – this is a clear and critical gap in knowledge.

Stakeholders from across jurisdictions and sectors have a critical need for on-ground data on the widespread vegetation die-off and its implications for bushfire potential behaviour, as well as vegetation recovery and fuel development as the vegetation recovers.

Quantifying fuels in these ecosystems is needed to make informed decisions regarding mitigating bushfire risk and prescribed burn planning, whilst protecting biodiversity. Understanding this risk is a current and urgent priority, across multiple sectors as these events may be expected to occur with greater frequency and represent potentially a new and widespread risk.

Project description

Southwestern Australia, parts of South Australia and Tasmania have experienced significant widespread and severe heatwaves and drought-induced vegetation die-off in the first half of 2024.

However, how the bushfire risk has been altered is unknown – this is a clear and critical gap in knowledge.

This project aims to understand the impacts of heatwaves and drought on bushfire disaster risk by:

1. Quantifying physical fuel characteristics for the range of vegetation types affected by vegetation die-off across southwestern Australia (and other sites, if possible).
2. Calculating potential fire behaviour under a range of scenarios.
3. Identifying the interactions between climate change and bushfire risk by utilising remote sensing and heatwave/drought die-off research sites to project future die-off and bushfire risk.

Expected outputs

Outputs from this project will have real on-ground use for stakeholders and will include detailed implications of die-off in terms of fuel characteristics and vegetation condition, suitability of implementing bushfire risk mitigation following heatwave/drought-induced die-off, remote sensing tools to predict vegetation recovery trajectories and how future climate change will influence recovery and changes in bushfire risk. The research team conducting this project will be expected to:

- Report on fuel characteristics for a range of vegetation types affected and unaffected by drought-induced die-off (Report 1).
- Report on implications for fire behaviour potential associated with drought-induced die-off, for a range of vegetation types using contemporary fire behaviour models (including for example, effects on rate of spread, fuel consumption and fire line intensity (Report 2).
- Indicate how bushfire risk may change in the future due to drought-induced die-off leveraging the above two research outputs (Report 3).

Core outputs

- Reports 1,2 and 3, as described above
- Stakeholder presentation/s
- Academic publications in a high-ranking international journal

Additional outputs

- Project plan and plain language statement
- Quarterly progress reports
- Project evaluation report
- Relevant communications outputs including but not limited to a presentation and a poster

Collaborative approach

Researchers are expected to undertake the research using a collaborative approach to assist in the translation and transfer of knowledge to end-users and to ensure the project meets their needs. Researchers are encouraged to outline their approach to ensuring effective collaboration which could include embedding researchers within end-user organisations for a period of time.

Anticipated outcomes

Much of the southern portion of Australia experiences heatwaves drought, and frequent fire. Heatwaves and drought events are projected to increase in severity, frequency, and intensity in the future, so understanding the implications of these disturbances in different vegetation and forest types is critical for bushfire preparedness and mitigation.

Short-term outcomes from this work are envisaged to be the quantification of current fuel characteristics and risk profiles for communities and agencies, with particular interest for those with assets in peri-urban areas, to plan mitigation and improve public safety - quantifying the change in bushfire risk, and where and when to mitigate that risk.

The longer-term outcomes include confidently projecting future bushfire risk given knowledge of likely climatic conditions (e.g., heatwaves/droughts and soil dryness) along recovery trajectories in a range of vegetation and forest types – identifying how heatwaves/drought events and fire interact and how vegetation recovery will change in the future.

Quality control and reporting

The project will be overseen and supported by a Project Management Committee (PMC) comprising the Principal Researcher, a Centre representative, and at least one stakeholder representative. Composition of the PMC will be determined in consultation with the Principal Researcher.

Reports

The Centre expects that the outputs delivered by this project will meet the highest scientific standards and will be suitable for publication on the Centre website and in industry newsletters, as well as in high-quality scientific journals.

The successful research organisation/s must co-develop with end-users a project plan and project summary using the Centre's templates. The project summary should explain in plain language what the project is about, what questions it intends to answer and describe the expected practical outputs that will make use of the research findings. The project plan must be approved by the PMC and will become an attachment to the contract.

Reports (and any supporting material) must be submitted to the PMC's satisfaction and will be subject to review by PMC members. The project team will be required to ensure an internal peer review process is undertaken prior to the final report being submitted.

Milestone reporting

The project team must report all milestone deliverables and engagement activities into the Centre's Project Management System. This will include sufficient justification for the completion of milestones to the satisfaction of the PMC and the Centre.

Communication

To further assist with quality assurance, it is expected that:

- regular PMC meetings will be held
- the project team will use a consultative approach, documented in quarterly reports
- the Principal Researcher will give periodic presentations to key stakeholder groups to gain critical feedback on project milestones.

Additional quality control processes may be agreed as part of the project planning process.

Contractual arrangements

A copy of the 'Research Services Agreement', the proposed form of contract for the purposes of this project, [can be found here](#).

The Centre reserves its rights to make amendments to the form of contract.

This agreement should be reviewed by applicants as part of the EOI submission.

If you would like to request amendments to any of the terms and conditions set out in the proposed form of contract, details of the proposed changes and the reason the changes are requested must be included in the EOI submission form. Requests for any changes will be at the sole discretion of the Centre.

Selection as a shortlisted or preferred provider does not give rise to a contract (express or implied) between the shortlisted or preferred provider and the Centre for the supply of goods or services. No legal relationship will exist between the Centre and the shortlisted or preferred provider until such time as a binding contract in writing is executed by both parties.

In the case of consortiums, the Centre requests that one consortium member be nominated as Lead Research Provider and take responsibility for subcontracting other parties.

Submitting an Expression of Interest

Application and review process

Project selection and approval will be a two-stage process. The first stage is evaluation of the EOIs that are received. The second stage is development of a project proposal, where a preferred provider will be selected and offered an opportunity to co-develop a detailed project proposal with input from key stakeholders.

Key dates

5 March 2025	Call for EOIs opens
18 March 2025	Online project briefing
2 April 2025	Due date for EOIs

Submission requirements for this EOI

Project teams responding to this EOI are required to submit their response using the Centre's [EOI submission form](#) and [Budget Template](#). Submissions must include:

- a statement of capability (max 600 words), including the proposed contributions of each research team member to the project
- a statement (max 400 words) about the diversity of the project team
- a statement (max 400 words) about the project's inclusion and respect of First Nations peoples, philosophies, cultures, rights and/or knowledges
- an outline (max 1000 words) describing how the project team intends to approach the project, strategies for effective collaboration and an indicative methodology
- an indicative schedule of work and interim milestones/project outputs as described in this document
- a proposed project budget in line with the budget envelope provided, including details of any in kind contribution from research organisation/s – a detailed budget to be provided using the downloadable [Budget Template](#) provided on the Centre's website
- a clear statement (max 400 words) describing the outcomes that will be delivered for this project and how they will be used by stakeholders
- a clear statement (max 400 words) describing the outputs that the proposed approach to this project will deliver and how the findings could translate into practice
- a statement (max 500 words) demonstrating the project team's relevant industry and stakeholder engagement
- a risk management statement (max 500 words)
- any requested changes to the Centre's proposed form of contract
- up to two-page CVs for each proposed project team member.

Additional information

In responding to this Call for Expressions of Interest, advice should be provided on any known or anticipated impacts of COVID or other pandemic restrictions or human resource risks on the timely delivery of the project. Where appropriate, risk management for the impacts of pandemic restrictions should be incorporated into the EOI.

Frequently asked questions

Additional information provided to individual respondents will also be published on the Centre's website to ensure access to all interested parties. Respondents are encouraged to check the website for any additional information via these published FAQs, prior to the closing date.

Online project briefing

An online webinar scheduled for **2:00pm AEDT on 18 March 2025** will provide a more detailed briefing of the project and the opportunity for interested parties to pose specific questions.

Registrations for this webinar can be made via the project page on the Centre's website. Once completed, a recording of this webinar will be posted to the website to ensure all interested respondents have access to this information.

Evaluation criteria

After the closing date, the Centre will review submitted EOIs against the evaluation criteria below. The evaluation criteria provide an indication of those matters that should be included in the EOI and supporting material – details are provided in the table below.

The Centre reserves the right not to offer the work, or only allocate a proportion of the available funding, if a proposal does not meet the Centre's needs. The Centre reserves the right to invite any other specific researchers as it sees fit to submit proposals before or after the closing date.

Evaluation criteria	% weighting
Research capability: the capacity and capability to deliver an excellent research project in an Australian environment	20
Project approach: a demonstrated understanding of the project requirements and a proposed project approach and methodology that is appropriate, feasible and robust Relevant outline of a collaborative approach to assist in the translation and transfer of knowledge to end-users and to ensure the project meets their needs.	25
Project outcomes and outputs: demonstrate a high-level understanding of the intentions of the project and how outputs/outcomes translate to practice	20
Industry engagement: strong track record of industry engagement with the ability to support and influence Australian disaster management at a national or state/territory level through interaction with key stakeholders	15
Value for money: delivery of required outcome within available budget along with the ability to leverage the funds provided with in-kind contributions or supplementary opportunities	20
