CALL FOR EXPRESSION OF INTEREST

FRM19 – HEATHLAND SANDS (GENERAL) ECOLOGICAL FIRE GROUP RETURN SAMPLING

PROPOSALS DUE 13 JUNE 2025 TO research@naturalhazards.com.au

SUMMARY

INTRODUCTION

The Natural Hazards Research Centre (hereafter the Centre), in conjunction with our client, the Department of Energy, Environment and Climate Action (Victoria) (DEECA) is seeking Expressions of Interest for the following project.

FRM 19 – Heathland Sands (general) ecological fire group return sampling

PROJECT AIMS AND OBJECTIVES

This project will research the effects of both bushfire and planned burning, on ecosystem resilience in the Heathland Sands (general) ecological fire group (EFG) by:

1. providing knowledge and data-based evidence to support strategic bushfire management modelling, evaluation, reporting and decision making.
2. enabling rigorous assessment of ecosystem resilience metrics across this EFG, as improved empirical data supports modelling and analysis/program adaptation, used to understand their effectiveness for guiding fire management.
3. verifying that underlying assumptions or evaluation of existing EFG data are robust and scientifically valid and enabling trend analysis.
4. provision of high quality ecosystem fire response data to further the effectiveness of decision making tools and analysis.

BUDGET

The total maximum budget for this project is **$500,000 (excl. GST)** and all work must be completed by 13 June 2025

RESPONSE

Any research proposal once submitted will be treated as commercial in confidence. Applications must be submitted to: research@naturalhazards.com.au **by 5:00pm AEST, 13 June 2025**

Research teams responding to this Call for Expression of Interest are required to submit a project proposal (4-6 pages) clearly addressing the requirements of the specifications set out in this document and a project budget including details of any in kind contribution from the research organisation.

INTRODUCTION

The Natural Hazards Research Centre (hereafter the Centre), in conjunction with our client, the Department of Energy, Environment and Climate Action (Victoria) (DEECA) is seeking Expressions of Interest for the following project:

FRM 19– Heathland Sands (general) ecological fire group return sampling

PROJECT AIMS AND OBJECTIVES

This project willresearch the effects of both bushfire and planned burning on ecosystem resilience in the Heathland Sands (general) ecological fire group (EFG) by:

1. providing knowledge and data-based evidence to support strategic bushfire management modelling, evaluation, reporting and decision making.
2. enabling rigorous assessment of ecosystem resilience metrics across this EFG, as improved empirical data supports modelling and analysis/program adaptation, used to understand their effectiveness for guiding fire management.
3. verifying that underlying assumptions or evaluation of existing EFG data are robust and scientifically valid and enabling trend analysis.
4. provision of high quality ecosystem fire response data to further the effectiveness of decision making tools and analysis.

BACKGROUND AND CONTEXT

Background

Ecosystem resilience is the capacity of an ecosystem to absorb natural and management-imposed disturbances but still retain its basic structure, function and identity. DEECA currently has three metrics of ecosystem resilience that tell us about how plants, habitat structure and animals respond to fire:

- tolerable fire interval (TFI)
- growth stage structure (GSS)
- geometric mean abundance of species (GMA)

Resulting from the *Scientifically based monitoring* research project partnership with La Trobe University, an ecosystem resilience monitoring (ERM) program has been developed to collect, analyse and interpret high quality data on how fire management affects ecological values. The ERM program is a two tiered program of biodiversity monitoring:

- a statewide tier to assess fire regimes

- a regional tier assessing fire events

The proposed sampling design for the statewide monitoring involves surveys of flora/vegetation, birds, and ground-dwelling mammals at 200 sites within each of 11 priority EFGs, with sites selected to encompass gradients of time since fire and inter-fire interval. All of the 11 priority EFGs currently have close to 200 sites established.
This program is described in the 'Guidelines for ecosystem resilience monitoring, evaluation and reporting' within the Victorian Bushfire Monitoring Program: scientifically-based monitoring project – final report (**available upon request**).
This research project contributes to the delivery of the statewide stream and focuses on resampling of the priority EFG, Heathland Sands (desert). This work will provide additional data to verify and refine the response curves generated in the first survey round, provide further insight into the ongoing effects of fire on ecosystem resilience, and may provide a starting point for trend over time analysis.

Policy Context

The Code of Practice for Bushfire Management on Public Land The Code of Practice for Bushfire Management on Public Land (the Code) specifies that the Department of Energy, Environment and Climate Action (DEECA) must report on the effectiveness of bushfire management for achieving the two primary objectives of the Code. The two primary objectives for bushfire management on public land in Victoria are:

- To minimise the impact of major bushfires on human life, communities, essential and community infrastructure, industries, the economy and the environment. Human life will be afforded priority over all other considerations.
- To maintain or improve the resilience of natural ecosystems and their ability to deliver services such as biodiversity, water, carbon storage, and forest products.

2019-20 Bushfire Inquiries

Following the 2019-2020 Bushfire season the Victorian Auditor-General's Office (VAGO) and the Inspector General for Emergency Management (IGEM) undertook inquiries into the impacts and management actions relating to bushfire management. The inquires made to following recommendations relating to the monitoring, evaluation and reporting of the impacts of bushfire and planned burning on the environment.

VAGO Recommendation 1

DEECA in partnership with the Country Fire Authority (CFA) and Fire Rescue Victoria (FRV) develops, implements and publicly reports on a holistic suite of performance metrics to demonstrate:

- the impact that planned burning has on public and private land on ecosystem resilience
- measures of ecosystem resilience, and the effect of bushfire and fuel management on these.

VAGO Recommendation 12

DEECA conducts more effective ecosystem resilience monitoring by:

- setting a target for regions on the quantity of ecosystem resilience monitoring assessments that they should complete annually
- setting an outcomes-level target that defines desirable values for key ecosystem resilience metrics
- report publicly against all of the metrics in its Measuring Ecosystem Resilience in Strategic Bushfire Management Planning policy in its fuel management reports (see Section 3.5).

Existing Academic Research

The project leverages the investment that DEECA and the Centre have already made across numerous projects including:

- ERP 01: *Framework for using and updating ecological models to inform bushfire management (ARI).* This research project developed a decision-making framework, including the Fire Analysis Module for Ecological values (FAME), to facilitate more effective and transparent consideration of ecological values in strategic fire management decisions. Monitoring data will provide validated empirical data to update the models and analysis underpinning the ecological risk assessment, leading to more reliable and robust decision-making for bushfire management.

- ERP 02*: Establishment, collection, and analyses of ecosystem resilience data for two priority ecological fire groups (EFG)* – Lowan Mallee and Heathland (sands) – Desert (La Trobe University). This project involves the collection of ecosystem resilience data (for birds and flora/vegetation) in two priority ecological fire groups (Lowan Mallee, Heathland Sands - desert), using protocols outlined in the report for the Scientifically Based Monitoring project.

- ERP 22: *Ecosystem resilience data – technological advancements* (Deakin University). In collaboration with ERP 02, ERP 22 will undertake camera monitoring in the Lowan Mallee and Heathland (Sands) – Desert EFGs, and assess the efficiency of improved monitoring methods using technological advances to develop improved field data capture, camera technology, and automated image analysis and classification. Expected output is improved (repeatable) monitoring methods, data integrity and calibration of field techniques.

- ERP 06: *Evaluation of ecosystem resilience data* (University of Melbourne). This project involves the analysis of pilot data collected using protocols outlined in the *Scientifically based monitoring* project report. The aim was to provide guidance on protocols for analysing the data and the capacity of the methods for answering key evaluation questions.

- ERP 24: *Collection of ecosystem resilience data in Heathland Sands* (University of Melbourne). This project will research the effects of fire, including both bushfire and planned burning, on ecosystem resilience and provide knowledge and evidence to support decision making for strategic bushfire management. It will assess ecosystem resilience metrics across one key ecosystem (Heathland Sands – (General) EFG) and measure their effectiveness for guiding fire management, and provide data for models and tools used for decision making in relation to bushfire management across the state, specifically the DELWP framework for using and updating ecological models to inform bushfire management planning.

- ERP 28: *Establishment, collection, and analyses of ecosystem resilience data for four priority EFGs*. The overarching aim of this project is to understand the effects of bushfires and planned burning on ecosystem resilience. This will be achieved through collecting data on biodiversity in four key ecosystems (the Grassy Heathy Dry Forest, Iron Bark / Box, High Altitude Shrubland Woodland and Tall Mixed Forest EFGs), modelling associations between animals, plants and habitats with variation in fires, and synthesising changes in ecosystem resilience metrics in space and time.

- FRM01: *Establishment, collection, and analysis of ecosystem resilience data for four priority ecological fire groups*. The overarching aim of this project is to understand the effects of bushfires and planned burns on ecosystem resilience. This will be achieved through collecting data on biodiversity in four key ecosystems (Forby Forest, Moist Forest, Foothill Forest and Hummock grass Mallee).

- FRM13: *Lowan Mallee ecological fire group return sampling*. This project aims to research the effects of bushfire and planned burning, on ecosystem resilience in the Lowan Mallee ecological fire group.

SCOPE

INCLUSIONS

The appointed service provider will be required to complete the following tasks:

1. Standardised surveys to collect ecosystem resilience data for flora, vegetation structure, birds and ground-dwelling mammals at 200 sites in one EFG – Heathland Sands (general). Data collection includes information outlined in the Standard Operating Procedures defined by the *Scientifically based monitoring project - guidelines for*

ecosystem resilience monitoring, evaluation and reporting within the Victorian Bushfire Monitoring Program report developed by La Trobe University and the DEECA derived work instructions.

2. The establishment of new sites within the Heathland Sands (general) EFG to fill time since fire or inter-fire interval gaps that exist within the sites established as part of ERP24 and incorporating more recent fire events.
3. Data analysis and interpretation of ecosystem resilience data and metrics as outlined for the statewide monitoring stream in the *Scientifically based monitoring* project report (La Trobe University)
4. Provision of quality assured data as per the DEECA data provision sheets – in the required format that allows seamless transition into the DEECA database and integration into existing models for decision making.
5. Participation, as required, in the DEECA-led Ecosystem Resilience Monitoring Program Reference Group.

EXCLUSIONS

The following tasks are excluded from the project:

1. collection of ecosystem resilience data at other EFGs
2. data storage and maintenance.

PROJECT SPECIFICATIONS

KEY STEPS

In developing the project proposal to be submitted in response to this Call for Expression of Interest, researchers should be mindful of the following project requirements:

Key steps	Lead	Due date
1. Desktop analysis and selection of new sites	Research org	As agreed in Project Plan
2. Obtain permits and ethics approvals	Research org	As agreed in Project Plan
3. Begin site establishment of new sites and collection of ecosystem resilience data in accordance with work instructions	Research org	As agreed in Project Plan
4. Collect vegetation structure and floristic data	Research org	As agreed in Project Plan

5. Collect bird data both in person and acoustic	Research org	As agreed in Project Plan
6. Collect mammal data	Research org	As agreed in Project Plan
7. Data processing cameras and automatic call recorders	Research org	As agreed in Project Plan
8. Data entry, quality assurance and integration with Ecosystem Resilience Database*	Research org	As agreed in Project Plan
9. Data analysis and evaluation of collected monitoring data (interpretation of ecosystem resilience data)	Research org	As agreed in Project Plan
10. Support for the integration of data into models for decision making including the provision of modelled outputs	Research org	As agreed in Project Plan
11. Draft final report	Research org	As agreed in Project Plan
12. Provide documentation for all elements above, final report and evaluation report	Research org	As agreed in Project Plan

*: Project approach section should include a brief description of how the team would conduct a robust quality assurance process of the data.

EXPECTED OUTPUTS

1. Revisit data collection at 180 ecosystem resilience monitoring plots already established across the Heathland Sands (General) EFG.
2. Establishment of new sites (up to a total of 200) to address any gaps in time since fire and inter fire interval that occurred in ERP24 and the selection of sites that have been burnt since the initial survey was conducted.
3. Ecosystem resilience data for all sites listed at points 2 and 3 - including data on birds, ground-dwelling mammals, habitat structure and plants - as per the methods outlined in the *Scientifically based monitoring* project report and DEECA provided work instructions and any relevant method changes arising from associated monitoring projects (ERP06, 02, 22, 24, 28 and FRM01).

4. Provision of all quality assured project data including raw audio recordings and model outputs to DEECA in a DEECA preferred format that allows seamless transition into the DEECA database.
5. Analysis of data to test for ecosystem, species and habitat responses to fire and provide response models to feed into DEECA decision making and reporting models, metrics, and tools. Quarterly reports outlining arising risks, key findings, and accomplishments to date.
6. A draft and subsequent final report that has been peer reviewed and copy edited, and includes:
    - analyses of ecosystem resilience data for species response
    - recommendations for improvements to the program or TFIs or decision-making models and tools.

QUALITY CONTROL

Final report and other project outputs

It is the expectation of the Centre and our client DEECA that the data and material delivered as part of this project will meet the highest quality assurance and scientific standards and will be suitable for internal and external distribution.

It is a requirement of this project that the final report (and any supporting material) be submitted to the Project Control Board's satisfaction (see under Project Governance). To ensure the final report meets this expectation, it will be subject to up to two rounds of review (with a minimum of two weeks for each review) by DEECA. Research organisations are required to ensure an internal peer review process is undertaken prior to the draft final report being submitted for DEEECA consideration.

Before the final report is submitted to the Project Control Board for approval it must also have been:

- through an independent peer reviewer approved by the Centre's Project Manager
- professionally proof read and copy edited.

These steps must be arranged by the research organisation costed as part of project budget and completed within the project timeframe.

Reports that have not been independently peer reviewed and professionally proof read and copy edited will not be considered final. A copy of the independent peer review and the researcher response to any comments must be provided to the Centre.

Project teams should ensure that sufficient time is included in the proposed project timeline for review of the draft final report by DEECA, revision and completion of the final report. This may take up to two months.

Communication

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

- The project team will utilise a consultative approach when developing the overall framework and data management processes/criteria and will demonstrate this by documenting engagement activities within the relevant reports. This will involve seeking input from DEECA subject matter experts to ensure the development of a framework and processes that are fit for purpose.
- The research team leader will give periodic presentations (e.g. annually) to key stakeholder groups to gain critical feedback on project milestones.

Any further quality control processes that are required for this piece of work, as well as key success measures, will be agreed with the DEECA Research Lead as part of the planning process.

PROJECT MANAGEMENT AND PROCESSES

CONTRACTUAL ARRANGEMENTS

This project is being delivered under an Agreement in place between Natural Hazards and Disaster Resilience Research Centre Ltd, t/as Natural Hazards Research Australia (the Centre), and the Department of Energy, Environment and Climate Action (DEECA) in the State of Victoria. Under this Agreement the Centre is responsible for the delivery of a number of bushfire, ecological and compliance related research projects. The contract put in place between the Centre and the research organisation selected to undertake this work will reflect the terms of the Agreement between DEECA and the Centre.

A draft copy of the contract between the Centre and the successful research organisation is provided with this document. **This contract should be reviewed as part of the EOI process**. This is a standard agreement, and any changes will be at the sole discretion of the Centre. If you would like to request amendments to any of the terms and conditions set out in the proposed contract, details of the proposed changes and the reason the changes are requested must be included with the submitted response. In considering this contract and proposing changes, please note the Centre has been advised by DEECA that (i) changes to provisions relating to the ownership of Intellectual Property will only be varied to take account of substantial in-kind contribution from the successful research organisation/s, and (ii) no changes can be made to the publications approvals processes.

PROJECT GOVERNANCE

Each project is carried out under the supervision of a Project Control Board (PCB) and in accordance with the governance arrangements agreed between the Centre and DEECA.

While the contractual relationship for the delivery of this project will be between the research organisation and the Centre, there will also be a strong relationship between the research team and DEECA staff. Communication is an important element of the success of this project and Researchers will be required to maintain strong links with both the DEECA Research Lead and the Centre Project Manager throughout the project.

A governance plan has been prepared which shows the roles and responsibilities of each of the participants. The successful research team will be required to comply with the processes and expectations as set out in that document.

PROJECT PLANNING

The project overview included in this document describes the way the DEECA subject matter experts believe the project can most successfully be undertaken. Alternative approaches can be considered. Any alternative approaches must ensure the delivery of the required outputs including any intermediate outputs identified in this document.

Following acceptance of a project proposal, the successful research organisation must prepare a detailed project plan and risk treatment plan using the DEECA template. This plan must be approved by the DEECA Research Lead and will become an attachment to the contract. The project plan must be approved within three months of the notification of the acceptance of the project proposal.

REPORTING

The successful research organisation will be required to make at least one presentation (and possibly two) annually to the Project Control Board or other nominated DEECA group during the life of the project.

Research organisations will also be required to:

- provide a poster for the annual AFAC/the Centre conferences
- provide a fact sheet within three months of signing the contract between the research organisation and the Centre (DEECA/Safer Together template)
- provide detailed progress reports on a quarterly basis

- contribute to the Project Evaluation Report.

Dates for submitting Quarterly Progress Reports:

Period covered	Report required
1 July to 30 September	Second week of October
1 October to 31 December	Second week of January
1 January to 31 March	Second week of April
1 April to 30 June	Second week of July

SUBMISSION OF EXPRESSION OF INTEREST

SUBMISSION REQUIREMENTS

Research teams responding to this Call for Expression of Interest are required to submit their response, including:

- A draft project proposal (4-6 pages) clearly addressing the requirements of the specifications set out in this document. Proposals must include achievable timelines, which will be used to monitor progress. A statement of capability demonstrating the ability of the proposed project team to undertake the work. This statement of capability should include the names and experience of key team members and their proposed contribution to the project (The capability statement should not exceed 4 pages).
- Project budget including details of any in kind contribution from the research organisation. A statement of acceptance of the terms and conditions of the proposed contractual arrangements. If such arrangements are not acceptable, details of any changes must be included with the submitted response.

ADDITIONAL INFORMATION

- Research bids from a consortium of research organisations with expertise in the relevant fields are specifically encouraged.
- Attached is a draft contract which we ask your organisation to review. In your response to the EOI you should identify any items in this contract that will require attention/amendment should your organisation be selected to undertake this piece of work. This contract is based on the Head Agreement between DEECA and the Centre and

as such there is very limited scope to make changes to the draft contract. **The total maximum budget for this project is $500,000 (excl. GST) and all work must be completed within 30 months of contracting.**

Any research proposal once submitted will be treated as commercial in confidence. Applications, must be submitted to: **research@naturalhazards.com.au by 13 June 2025 2025.**

EVALUATION CRITERIA

After the closing date the Centre, along with the DEECA Research Lead, will review proposals against the evaluation criteria below and make a recommendation to the state's representative on the most appropriate organisation to undertake this work. The evaluation criteria provide an indication of those matters that should be included in the project proposal and associated documentation – details are provided in the table below.

You will be advised by the **end of June 2025** if your application has been accepted and it is expected work on the project will commence upon signing of the contract.

The decision of the Centre and our client DEECA will be final. 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 client's needs. The Project Control Board 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 applied research project in a Victorian environment.	15
Project proposal A clear demonstration that the research team has an understanding of the project scope through the proposed research approach The proposal must also include an indicative timetable of work and interim milestones/project outputs as described in this document **Quality control** Clear documentation of quality control processes of project outputs and data, including proposed internal and external reviewers. Identification of copy editors and proof readers.	50
Industry engagement Strong Track record of industry engagement with the ability to support and influence bushfire management in Victoria through interaction with land and fire agency personnel	15

Victorian focus Ability to undertake research in Victorian environments individually and/or in cooperation with land and fire managers	
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. The evaluation team will consider the membership of the project team and the proposed roles and time commitment.	20

ATTACHMENTS - AVAILABLE BY REQUEST

1. Draft contract