



Natural
**Hazards
Research**
Australia

Call for Expressions of Interest

T7-A3: Fire mosaics in landscape fire planning

Expressions of Interest due **5:00pm AEDT, 9 December 2024**
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 (EOIs) from project teams for the following project:

T7-A3 Fire mosaics in landscape fire planning

Project description

The purpose of this project is to develop operational guidance comprised of a shared conceptual framework, language and metrics, for describing fire mosaics. This will enhance the capability of practitioners throughout temperate Australia to integrate fire mosaics into landscape planning so they can meet their management objectives.

Fire mosaics are perceived to be important for achieving ecological, cultural and hazard reduction objectives in fire-prone landscapes. However, operational guidance regarding mosaics lags substantially behind that for other areas of fire management (e.g. impacts of fire interval on ecosystems). Therefore, managers continue to face considerable uncertainty regarding defining objectives, implementation and assessment of outcomes from 'mosaic burning'. Establishing commonly understood concepts, language and metrics around fire mosaics is a key first step towards addressing this gap.

This project will deliver operational guidance with practical application to fire management and will also be foundational for subsequent work to develop information and tools to assist in planning, implementing and assessing fire mosaics.

Estimated duration

12 months

Budget

The budget envelope for this project is \$150,000-\$200,000

While this is the maximum available budget, the research team should note that this is a competitive process, and assessment of Expression of Interest Submissions will include a value for money component, see Evaluation Criteria.

Related national research priorities¹

- Evidence-informed policy strategy and foresight
- Situational awareness
- Sustainable, safe and healthy landscapes

Related Centre research priorities for 2024–26²

- Understanding and mitigating risk
- Resilient recovery
- Environmental solutions
- Next generation capability
- 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	<ul style="list-style-type: none">→ Department of Natural Resources and Environment, Tasmania→ Tasmania Parks and Wildlife Service→ Sustainable Timber Australia→ Tasmania Fire Service→ Aboriginal Heritage Tasmania→ Department of Energy, Environment and Climate Action, Victoria→ Country Fire Authority, Victoria→ National Parks and Wildlife Service, NSW→ Queensland Parks and Wildlife Service→ ACT Parks and Conservation Service→ Department of Environment and Water, South Australia→ Department of Biodiversity, Conservation and Attractions, WA→ Department of Fire and Emergency Services, WA→ National Council for Fire and Emergency Services (AFAC)
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Centre contact	For any questions regarding this Call for EOIs, please email research@naturalhazards.com.au .
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Online project briefing	There will be no online briefing for this project.
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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, 9 December 2024
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Statement of requirements

Background and context

Fire mosaics incorporate spatial and temporal variation in fire events and regimes and potentially enhance resilience in socio-ecological systems by generating landscape heterogeneity.

The idea that biodiversity and hence ecosystem resilience are enhanced by heterogeneity in fire spatial and temporal patterns ('pyrodiversity begets biodiversity'), is a key concept in fire ecology. In fire management, this concept often manifests as a (perceived) need for a 'variable mosaic' within landscapes. The relationship between variable mosaics and biodiversity is intuitively appealing and, for some systems, supported by empirical evidence. 'Variable mosaics' may also buffer ecosystems against the homogenising influence of large bushfires, increasing resilience to such events.

'Fine grained' mosaics are particularly a feature of Indigenous burning regimes, which have been shown to increase the availability and diversity of eco-cultural resources, as well as promoting biodiversity and limiting bushfire extent.

Simulation modelling and field observation also indicate that increased mosaic heterogeneity may reduce bushfire spread and intensity. This suggests the possibility of implementing mosaics that meet hazard reduction, ecological and cultural objectives.

Despite evidence for the importance of mosaics, operational guidance lags substantially behind that for other areas of fire management (e.g. impacts of fire interval on ecosystems). Therefore, managers continue to face considerable uncertainty in implementing fire mosaics.

The overarching aim of this project is to use existing and new knowledge drawn from western and Indigenous science to produce tools and guidance that will enhance capabilities of Indigenous and non-Indigenous fire managers to incorporate fire mosaics into landscape fire planning, thereby achieving desired land management objectives.

Project description

The purpose of this project is to develop a shared conceptual framework, language and metrics, for describing fire mosaics. This will enable practitioners throughout temperate Australia to better integrate fire mosaics into landscape planning so they can meet their management objectives.

Fire mosaics are perceived to be important in achieving ecological, cultural and hazard reduction objectives in fire-prone landscapes. However, guidance regarding mosaics lags substantially behind that for other areas of fire management (e.g. impacts of fire interval on ecosystems). Therefore, managers continue to face considerable uncertainty regarding defining objectives, implementation and assessment of outcomes from 'mosaic burning'.

Through a strong emphasis on understanding the current state of the mosaic burning knowledge base from literature and consultation with stakeholders, this project will deliver operational guidance with practical application to mosaic burning and fire management and will also be foundational for subsequent work. Accordingly, the aims of this project are to:

1. Build a shared understanding of the objectives of 'mosaic burning'.
2. Define key attributes of mosaics and develop language, metrics and methods for standardised characterisation of mosaics at various scales, appropriate for different objectives (e.g. ecological, cultural, hazard reduction).
3. Provide a framework to guide further work to address the key identified knowledge and capability gaps regarding managing fire mosaics, including developing approaches to determining and assessing mosaic-related objectives.

Expected outputs

Outputs are the products that are expected to be delivered by this project.

Core outputs

- A project plan co-designed with Project Management Committee (PMC) with milestones and expected timeframes.
- A final report which includes:
 - A review of the current knowledge of and processes for managing fire mosaics, including identifying approaches that may have broad applicability, as well as key knowledge and capability gaps.
 - A compilation of common language, definitions and metrics for attributes of fire mosaics at various scales most relevant to fire management for cultural, ecological and hazard reduction purposes.
 - A conceptual framework for defining and assessing mosaic-related management objectives and a 'roadmap' for future work to further improve guidance for managing fire mosaics.
- Stakeholder presentation/s.

Additional outputs

- Project plan and plain language statement
 - Quarterly progress reports
 - Project evaluation report
 - Relevant communications outputs including but not limited to a presentation, poster and a Hazard Note
 - Journal paper manuscript(s)
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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

Current processes for incorporating mosaics in fire planning are rudimentary at best.

This project will lay the foundations for the development of information and tools that will assist fire managers in assessing and planning fire spatial patterns. As such, the project will deliver a major step forward in incorporating mosaics and associated ecological, cultural and hazard reduction objectives into fire management planning.

Ultimately, the outcome of this project and subsequent future work will be increased ecological resilience, improved management of eco-cultural resources and reduced bushfire risk in key fire-prone landscapes.

The project will be undertaken as a collaborative partnership between Indigenous and non-Indigenous fire experts, with the aim of producing outputs of utility and benefit to all end users.

Quality control and reporting

The project will be overseen and supported by a Project Management Committee 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. The PMC will also report to the AFAC Predictive Services Group Research Working Group for guidance and advice.

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

11 Nov 2024	Call for EOIs opens
9 Dec 2024	Due date for EOIs
11 April 2025	Final due date for submitting co-developed project proposal

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 EOIs, 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 Frequently Asked Questions (FAQs), prior to the closing date.

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
