PROJECT SUMMARY

# Fire Case Studies

Natural Hazards Research Australia

RESEARCH TEAM

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SUPPORTING ORGANISATIONS

Bureau of Meteorology

Project duration: 2 years

## Background

Agency practitioners and communities require contextual, timely and relevant information to optimally prepare for and respond to extreme events. More frequent and extreme high impact weather events are projected in a changing climate, and these will present a demand for effective learning that translates to modified behaviour and policy.

The context of lived experience is a valuable platform from which to extract learnings. Case studies have been proven as a valuable post-event learning tool.

Rapid learning from events can be delivered through an integrated framework for case studies run by a multi-expertise team who use targeted, contemporary delivery methods for sharing outcomes across agencies and communities. Well-designed case studies require a streamlined process to run sophisticated numerical models, with efficient data retrieval and processing, followed by skilled interpretation of physical processes and integration with other event data including social media.

## Project description

The project comprises two related activities. Firstly, two fire case studies will be delivered, the Currowan fire in NSW (2019) and the Wooroloo fire in WA (2021). Secondly, our historical, unstructured case-study approach will be extended and refined to define a best practice, multifaceted and data rich framework for future NHRA case study activities that is hazard agnostic and can be applied to all weather events.

Data analysis will include satellite imagery, radar imagery, high resolution ACCESS-Fire simulations and AWS data. Comparison and validation will be made against data captured by Fire and Emergency Management agencies on fire activity and impacts, fire reconstruction data and other available information.

The standardised framework and streamlined procedure will provide an environment that can contribute rapid answers to questions arising from adverse events, enabling a richer, state-of-the-art assessment of what happened. This can provide detailed and comprehensive input to debriefs, enquiries, reviews, scientific reports and coronial inquests.

## Intended outcomes

This project will deliver two case studies:

(1) Currowan fire, in partnership with RFS NSW.
(2) Wooroloo fire, in partnership with DFES and DBCA WA.

The case studies will develop and share learnings that will enable agencies to prepare and respond to future events. They will also deliver learnings and identify inputs that shape science-based policy. Delivery methods will include presentations and workshops, scientific publications and a pathway to training material.

The streamlined case study framework will enable effective and comprehensive analysis and documentation of future events that are crafted to meet the needs of a range of stakeholders including emergency services agencies, community members, policy makers and researchers.

## Translation and implementation potential

The project deliverables will provide an efficient process to support documentation and learning of future weather events. This will meet future demands for evidence-based improvements to behaviour and policy in a future climate with more frequent and impactful high impact weather systems. Other researchers will be able to leverage the project outputs.

A discussion paper on the gaps and opportunities presented by case studies of severe weather events will reflect on the approaches to, uses of and value delivered by case studies as comprehensive post-event analyses and as a method of delivering and richer and more informative submissions to official enquiries.

## Further information

For full project details head to:
https://www.naturalhazards.com.au/research/research-projects/fire-case-studies
Or contact nicola.moore@naturalhazards.com.au