

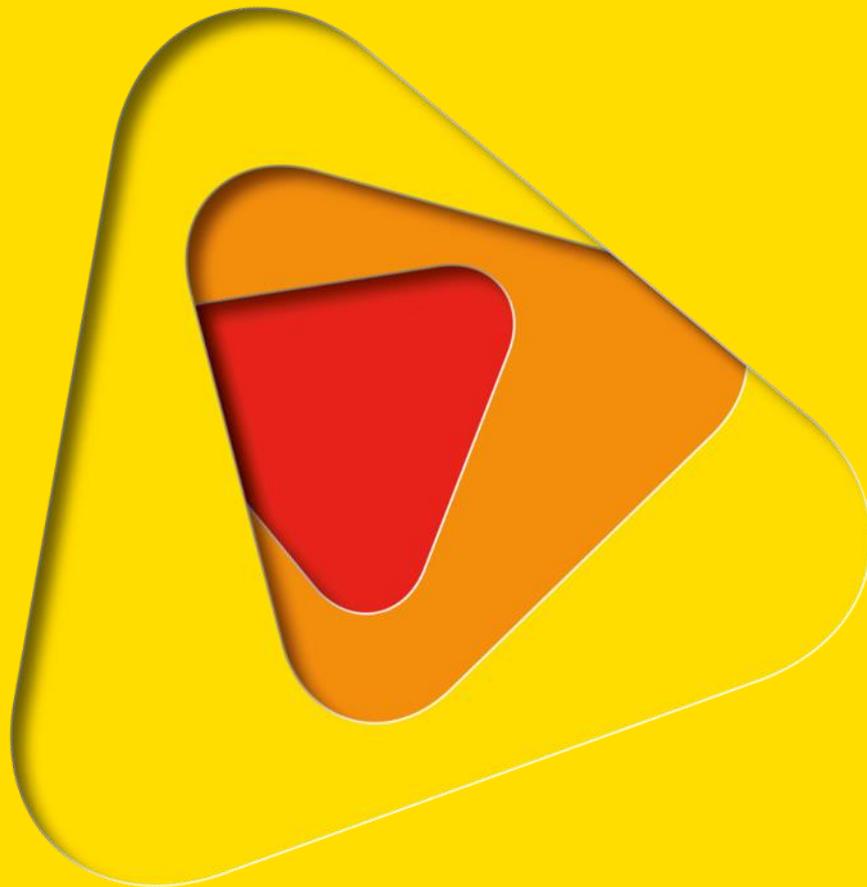


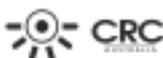
# SCIENTIFIC UNCERTAINTY AND RISK MITIGATION POLICY AND PLANNING PROJECT

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University of Western Sydney  
Bushfire and Natural Hazards CRC

**Annual Report 2014**





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## Section 1: Introduction

**This Annual Report reports on activities to June 30 2014 of the Scientific Diversity, Scientific Uncertainty and Risk Mitigation Policy and Planning project.**

### Summary of key activities

- Dr Jessica Weir, Professor Steve Dovers, Associate Professor Michael Eburn and Professor John Handmer attended the inaugural BNHCRC Research Advisory Forum (RAF) held in Adelaide from 18 - 20 March 2014.
- On 19 March 2014, Dr Weir presented at the RAF on behalf of the project team. In the talk 'Scientific diversity and uncertainty: bushfire and flood risk mitigation' she advised of staff changes, including her appointment as Senior Research Fellow at the University of Western Sydney, and the decision to recruit a Principal Investigator. This development has increased the in-kind contribution of the project, as Weir is now contributing 0.2EFT as Chief Investigator, and expanded the project's capacity and breadth with the new Principal Investigator.
- Feedback from the RAF end users was twofold: to include a northern case study in the scenario exercises; and, if possible, to consider the use of scientific information by the media. A collaborative northern scenario for peri-urban Darwin has been agreeably canvassed with BNHCRC researchers Steve Sutton and Professor Andrew Campbell.
- The draft Project Management Plan (PMP) was circulated to end users prior to the Adelaide RAF, discussed with end users in Adelaide, and then the final version was completed and submitted to the BNHCRC. A utilisation road map was also prepared at the Adelaide RAF, and later submitted to the CRC with the PMP.
- A Multi-Institutional Agreement to collaborate on the RMPP project was signed between the Australian National University and the University of Western Sydney in March.
- Research Associate Dr Josh Wodak was appointed to undertake the Scenario Exercise Literature Review. Dr Wodak reviewed approximately 250 sources on scenario exercises, as well as conducting interviews with BNHCRC researchers using scenario exercises in their methodology. The report provides the conceptual and methodological insights to establish the use of scenario exercises in our research project. The report was drafted in June 2014 and circulated to end users for feedback, to be published in the next reporting period.
- Principal Investigator recruitment process was successfully undertaken between March-May 2014. The appointment was advertised in April, interviews held in May and appointment to begin 21 July 2014. Project member Associate Professor Michael Eburn contributed as part of the University of Western Sydney selection panel.

- Principal Investigator Dr Timothy Neale was appointed and will begin on 21 July 2014.
- A poster based on the research report was drafted by Dr Wodak and will be submitted to the 2014 AFAC conference in July or August 2014.
- An end users meeting is scheduled to be held on Thursday 24 July 2014, to discuss Year 1 outcomes. Mick Ayre, Clare Speechly, John Schauble, Dr Jessica Weir and Dr Timothy Neale will be in attendance.
- Dr Tara McGee has identified a potential funding source for the Canadian scenario exercise.
- Dr McGee gave an invited presentation at the Forest Fuels Management Workshop in Alberta, which brought together wildfire management practitioners from agencies across Canada. Dr McGee also strengthened my links with fire practitioners at Alberta Environment and Sustainable Resource Development, which should assist us to develop and implement the planned scenario exercise in Alberta.
- Professor Steve Dovers attended the CRC Hobart Research Forum and, as well as presenting past work undertaken with Associate Professor Michael Eburn, communicated the aim of the new project and discussed this informally with emergency managers. Earlier this year, Dovers was engaged with the Victorian Bushfire Management Reform process through its Expert Reference Group, and held discussions on the potential for the project to engage with ongoing activities in that state.
- Professor John Handmer is working with the Project Team to develop case studies and has assisted with end user liaison. He is working with Dr Weir on a paper about scientific information and predicting natural hazard risk. He also met with and discussed the project aims and potential outputs with fire and emergency managers.
- Dr Christine Hansen has been working with her Swedish peers to organise the upcoming international workshop 'Disaster and Culture' to be held in Sweden in 2015. She recently presented papers at the 2014 World Congress of Environmental History in Portugal and at the 2013 Fire Stories Conference at Melbourne University's Centre for the History of Emotions.

## Lead end user report

The project is off to a solid start after its first two quarters. While the outputs at this stage have been understandably limited, the research framework and the engagement of research staff has proceeded satisfactorily. Dr Wodak's literature review, circulated to end users for comment, represents a substantial methodological input into the project.

While end user engagement in the project to this point has been limited, end users are genuinely engaged with the project. It is anticipated that the level of end user involvement will escalate as the research gains momentum.

John Schauble  
Emergency Management Victoria

## Section 2: Background

### Project outline

The Scientific Diversity, Scientific Uncertainty and Risk Mitigation Policy and Planning project commenced in January 2014. It is part of the Governance and Institutional Knowledge cluster of the Bushfire and Natural Hazards Cooperative Research Centre. This project is focussing on how a better understanding of the role of science in decision-making will help industry articulate and defend decisions to the community, media, inquiries and elsewhere, and, better frame information and advice on how scientists and professionals communicate.

The project is led by the University of Western Sydney and the Australian National University, in collaboration, and has four components:

1. Exploring how people have different understandings of the science of flood and bushfire risk.
2. A focus on flood and bushfire mitigation activities in urban, peri-urban and rural locales. This will include sites where flood and fire risk are combined, such as catchment and riparian vegetation management upstream and downstream of large metropolitan water storages.
3. Considering bushfire and flood risk across the spectrum of Prevent, Prepare, Respond and Recover, with an emphasis on mitigation activities.
4. Informing bushfire and flood mitigation practice, policy and planning, and engaging with the experiences of practitioners.

New public policy positions for bushfire and flood risk planning, preparedness, response and recovery rely on best practice scientific evidence, however, scientific evidence does not always meet the knowledge needs of practitioners.<sup>1</sup> Scientific studies are fragmented and highly specialised, constantly evolving, and span diverse disciplinary approaches. Further, scientific evidence is produced, understood and used in relation to other sources of knowledge - professional expertise, local knowledge, law, politics and so on - and is thus subject to competing interpretations, public mistrust and dismissal. This project takes an interdisciplinary approach, drawing on human geography, political science, legal studies and science, technology and society studies, to investigate how policy makers, practitioners, courts, inquiries and the community differentiate, understand and use scientific knowledge in relation to bushfire and flood risk. It will use qualitative social science methods including scenario exercises, theoretical tools and case studies, to analyse how diverse knowledges are ordered and judged as salient, credible and authoritative, and the pragmatic meaning this holds for emergency management across the PPRR spectrum. At this early stage, the project's methodology and case studies remain under negotiation.

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<sup>1</sup> Lorrae van Kerkhoff and Louis Lebel, "Linking Knowledge and Action for Sustainable Development," *Annual Review of Environment and Resources* 31, no. 1 (2006).

## Section 3: Performance review

### Objective

To identify the diversity and uncertainty of scientific knowledges used in bushfire and flood risk mitigation planning and policy.

### Strategies

**Research:** The research methodology includes comprehensive literature reviews of scenario exercises and scientific diversity and scientific uncertainty in bushfire and flood risk mitigation planning and policy.

**Engagement:** The project will be highly inclusive of stakeholders across planning, forecasting and emergency management sectors to ensure relevance and practicality of outcomes.

### Key research activities

- Research Associate appointed.
- Principal Investigator appointed.

### Key research themes

Establishing the key research themes will be an important 'first step' in the project, in helping to identify research gaps and steer the scope of the literature reviews. The key research themes are yet to be agreed with end users and may be modified as the project progresses.

The case studies for the scenario exercises are still being developed in consultation with industry and research partners, however it is anticipated that they will be:

- Flood risk mitigation in the Hawkesbury-Nepean, Greater Western Sydney
- Prescribed fuel reduction burning in Victoria
- Fire and flood risk in peri-urban Darwin

### Literature reviews

A major milestone document during the year was the completion of the first in a two-part series of literature reviews. This first Scenario Exercise Literature Review, concerning scenario exercises and scenario exercise methods, reviewed approximately 250 sources on the topic, as well as conducting interviews with BNHCRC researchers using scenario exercises in their methodology. This literature reviews is an important component of the overall research project's methodology.

### Key engagement activities

Over the year, the researchers established partnerships and engaged with the following key stakeholder groups:

- the lead end user
- end users from the Bushfire and Natural Hazards CRC
- the Expert Reference Group of the Victorian Bushfire Management Reform

Key engagement activities for the year ahead are outlined in Figure 3.1.

**Figure 3.1: Key engagement activities in Year 1**

ACTIVITY	STAKEHOLDER GROUP
Project leader and principal investigator meeting by teleconference with lead end user and BNHCRC end users, Thursday 24 July 2014.	Lead end user; BNHCRC end users
Discussion of research project at the Fighting Fire with Fire: Climate Modification and Ethics in the Anthropocene symposium, 30 July 2014, UNSW Australia.	Research community
Discussion of research project at BNHCRC Hobart Research Forum	BNHCRC end users; industry groups; research community
Discussion of research project with Expert Reference Group of the Victorian Bushfire Management Reform	Research community
Discussion of research project with Project Team members and industry partners from the Bushfire and Natural Hazards CRC at AFAC2014, 2-5 September 2014	BNHCRC end users; industry groups; research community

## Section 4: Performance summary

### Presentations

- Hansen, C (2013). All Gone Dead: Fire and History in the Yarra Valley. *Fire Stories*. ARC Centre of Excellence for the History of Emotions, University of Melbourne, Victoria.
- Hansen, C (2014). Fire, History and Taxonomies of Country. *World Congress of Environmental History*. Guimaraes, Portugal.
- McGee, T (2014). Social science research insights into public support for wildfire mitigation *Forest Fuels Management Workshop*. Hinton, Alberta, Canada.
- Weir JK. (2014). Scientific Diversity and Uncertainty: Bushfire and Flood Risk Mitigation. *BNHCRC Research Advisory Forum*. Adelaide, South Australia.

## Section 5: Year ahead

### Projected key activities and outputs 2014-15

Key activities and outputs over the following year are:

- Preliminary case studies identified and confirmed.
- End users will be briefed on preliminary themes prior to the first case study. Research themes will be finalized and cross-referenced for synergies and tensions.
- Scientific knowledge literature review: papers and sources identified, literature review finalized and discussed with end users.
- First scenario exercise will be prepared and convened.
- A journal article on 'Knowledge Practices and Natural Hazards' (title TBC) will be submitted to the Bushfire and Natural Hazards CRC for approval.
- A conference or seminar abstract will be submitted.
- A conference poster will be submitted.
- Researcher(s) will present to a research forum.
- An end user meeting will be convened to review Year 2 outcomes and findings.

### Fieldwork and reporting on results of case studies

- First scenario exercise will be prepared and convened.
- Results from the first scenario exercise will be distributed to end users and then discussed with end users.

### Journal articles, discussion papers and Bushfire CRC Fire notes

- A journal article on 'Knowledge Practices and Natural Hazards' (title TBC) will be submitted to the Bushfire and Natural Hazards CRC for approval and then submitted for publication.

## Section 6: Contacts

### Project Leader

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### Project Team

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Professor Stephen Dovers, Fenner, ANU  
Professor John Handmer, RMIT University