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HAZARDSCRC

SCIENTIFIC DIVERSITY, SCIENTIFIC UNCERTAINTY AND BUSHFIRE AND FLOOD RISK MITIGATION PROJECT: 2016 RAF UPDATE

Dr Tim Neale

Institute for Culture and Society, Western Sydney University

@tdneale t.neale@westernsydney.edu.au

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Australian Government
Department of Industry,
Innovation and Science

Business
Cooperative Research
Centres Programme



Australian
National
University

PROJECT RESEARCHERS

Dr Jessica Weir, Chief Investigator, WSU-ANU

Dr Timothy Neale, Principal Investigator, WSU

A/Prof Michael Eburn, ANU College of Law

Prof Stephen Dovers, Fenner, ANU

Prof John Handmer, RMIT University

Dr Christine Hansen, University of Gothenburg, Sweden

A/Prof Tara McGee, University of Alberta, Canada

PROJECT END USERS

John Schauble, Emergency Management Victoria

Chris Irvine, State Emergency Service, Tas

Ed Pikusa, Fire and Emergency Services Commission, SA

Monique Blason, Dept. Premier and Cabinet, SA

Patrick Schell, Rural Fire Service, NSW

Leigh Miller, Country Fire Service, SA

Don Cranwell, Metropolitan Fire Service, SA

Dylan Rowe, DELWP, Victoria

OBJECTIVES

Across the PPRR spectrum in Australia:

- 1) To investigate the diversity and uncertainty of bushfire and flood science, and its contribution to risk mitigation policy and planning;
- 2) To explore how diverse individuals use and understand scientific evidence and other knowledges in their bushfire and flood risk mitigation roles; and,
- 3) To analyse how this interaction produces particular kinds of opportunities and challenges in the policy, practice, law and governance of bushfire and flood risk mitigation.

Scientific uncertainty lit review

Scenario exercise lit review

CASE STUDY

Scoping interviews + survey

Scenario exercise

Final interviews

Case study findings → Case study publications

Whole-of-project findings → Whole-of-project publications

CASE STUDY 1: BARWON-OTWAY, VICTORIA

- high risk area + innovative scientific methods
- bushfire risk: contiguous lands; geographic distribution of population; few historical 'fires of chance'; and, prevailing weather pattern
- governance context: 2002-3 and 2006-7 fires; activity-based measures; and, new tools and data



CASE STUDY 2: GREATER DARWIN, NT



- ancient and modern 'risk' in pro-development context
- bushfire risk: increased fire intensity; invasive fuels; subdivision in peri-urban area; climate change
- governance context: low regulatory power and high discretionary power; distributed responsibilities and incentives; operational focus over planning focus

RESEARCH + ENGAGEMENT

1. Barwon-Otway Case Study:

- 1-1.5 hour interviews with 21 practitioners
- 58-question survey distributed
- 1-day scenario exercise with 12 practitioners (+ Prof Paul James and A/Prof Tara McGee)
- Follow-up interviews with 10 practitioners

2. Greater Darwin Case Study:

- 1-1.5 hour interviews with 28 practitioners
- 58-question survey distributed
- 1-day scenario exercise with 14 practitioners (+ Prof Paul James and Dr Elspeth Oppermann)
- Follow-up interviews in May-June 2016

RESEARCH + ENGAGEMENT

- End user engagement: teleconferences, face-to-face meetings, and project newsletters
- Sector engagement: teleconferences and face-to-face meetings with case study stakeholders including DELWP, BushfiresNT, DLPE (NT), NTFRS, INSW, SES NSW, IAG, and others
- Case study research presentation at DELWP (+ more planned)

RESEARCH OUTPUTS + DISSEMINATION

KEY OUTPUTS:

- 5 journal articles
- 2 literature reviews
- 2 conference posters
- 6 research seminars

KEY DISSEMINATION:

- Distribution to end users, participants, project team
- Open Access publishing options where possible
- Researcher, WSU and CRC social media
- *Fire Australia* and *BNHCRC Blog*



Scientific uncertainty lit review

2 lit review pubs

Scenario exercise lit review

CASE STUDY

Scoping interviews + survey

Scenario exercise

Final interviews

Case study findings

Whole-of-project findings

3 case study pubs,
3 'extension' pubs

Whole-of-project publications

PUBLICATIONS

JOURNAL ARTICLES

- Neale, T (Accepted), 'Burning anticipation: wildfire, risk mitigation and simulation modelling in Victoria, Australia', *Environment & Planning A*.
- Neale, T, Weir, JK & McGee, TK 2016, 'Knowing wildfire risk: scientific interactions with risk mitigation policy and practice in Victoria, Australia', *Geoforum*, vol. 72, pp. 16-25.
- Neale, T, Weir, JK & Dovers, S 2016, 'Science in motion: integrating scientific knowledge into bushfire risk mitigation in southwest Victoria', *Australian Journal of Emergency Management*, vol. 31, no. 2, pp. 13-7.
- Wodak, J & Neale, T 2015, 'A critical review of the application of environmental scenario exercises', *Futures*, vol. 73, pp. 176-86.
- Neale, T & Weir, JK 2015, 'Navigating scientific uncertainty in wildfire and flood risk mitigation: a qualitative review', *International Journal of Disaster Risk Reduction*, vol. 13, no. 3, pp. 255–65.

LITERATURE REVIEWS

- Neale, T 2015, *Scientific knowledge and scientific uncertainty in bushfire and flood risk mitigation: literature review*, Bushfire & Natural Hazards CRC.
- Wodak, J 2014, *Scientific diversity, scientific uncertainty and risk mitigation policy and planning: scenario exercise literature review*. Bushfire & Natural Hazards CRC.

OBJECTIVES + DISCUSSION POINTS

How practitioners use science and other knowledge in mitigation	Opportunities/challenges in policy, practice and governance of mitigation
Making things count: speaking 'up,' 'in' and 'out' to policymakers, practitioners and publics	Explicit numbers create new questions: what counts and why; data reliability; data dissemination
Other knowledge vital, particularly to manage large uncertainties (especially re: public PPRR)	Relation between scientific and other knowledge: adversarial, complimentary, other?
Create awareness and involve communities, institutions and agencies in planning	Authoritative quality of science and expertise: key role of 'outsiders' and relationships
Science vs 'science': everyday scientific knowledge, 'new science,' legacy science, etc.	Different science for different contexts, managed by practitioners

UPCOMING DATES

- Final interviews for the Greater Darwin case study, May-June
- Submission of 6th journal article, May-June
- End-of-Year 3 meetings and annual report, July-August
- Beginning 3rd case study, August-September
- Dr Neale, Dr Weir, Prof. Handmer and Prof. Dovers will be presenting at the AFAC 2016 conference, August-September
- 3rd case study scenario exercise, December-January

THANKS

Project leader: Dr Jessica Weir (Western Sydney University)

Principal investigator: Dr Tim Neale (Western Sydney University)

Project team: Dr Christine Hansen (University of Gothenburg); Associate Professor Tara McGee (University of Alberta); Associate Professor Michael Eburn (ANU); Professor Stephen Dovers (ANU); Professor John Handmer (RMIT)

End users: Monique Blason (Department of Premier and Cabinet, South Australia); Don Cranwell (Metropolitan Fire Service, South Australia); Chris Irvine (State Emergency Service, Tasmania); Leigh Miller (Country Fire Service, South Australia); Ed Pikusa (Fire and Emergency Services Commission, South Australia); Dylan Rowe (Department of Environment, Land, Water and Planning, Victoria); John Schauble (Emergency Management Victoria, Victoria); Patrick Schell (Rural Fire Service, New South Wales)

