Natural Hazards Research Australia

The Predictions in Public Project:

Enabling risk informed decision-making through research utilisation

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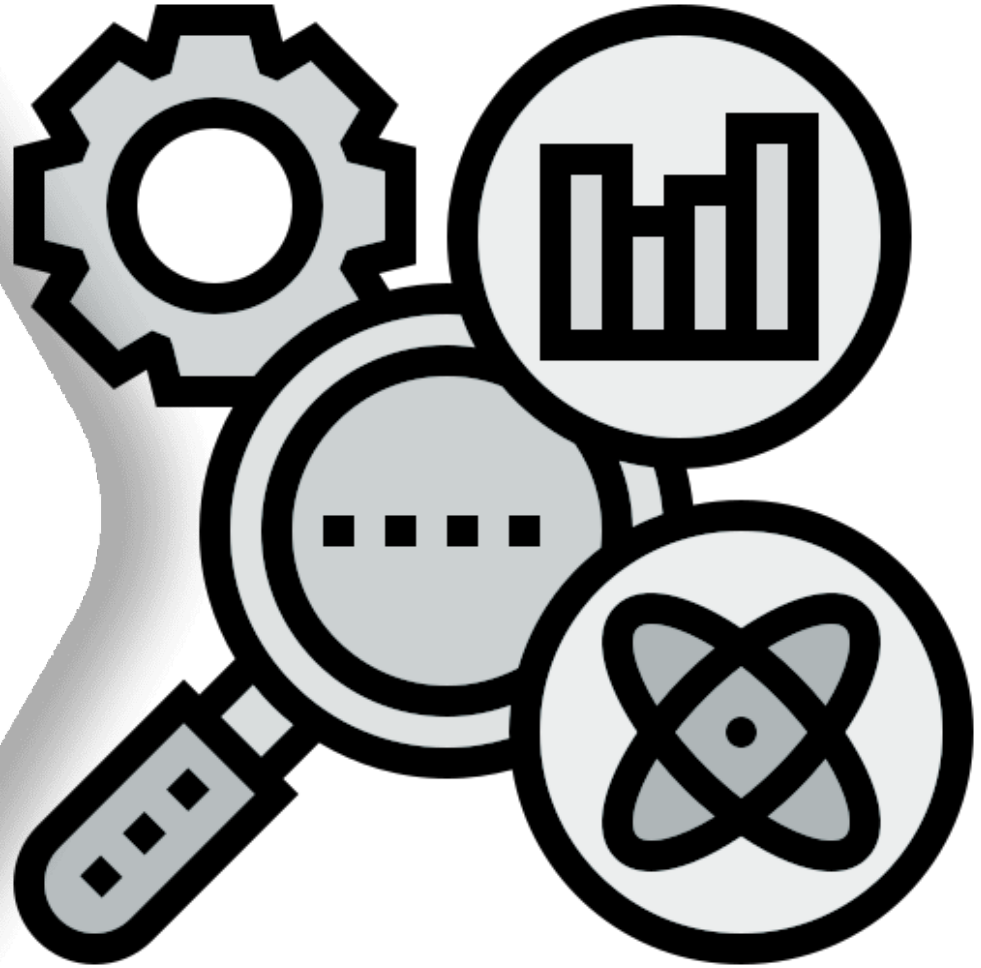
Overview

1. The challenge of research utilisation.

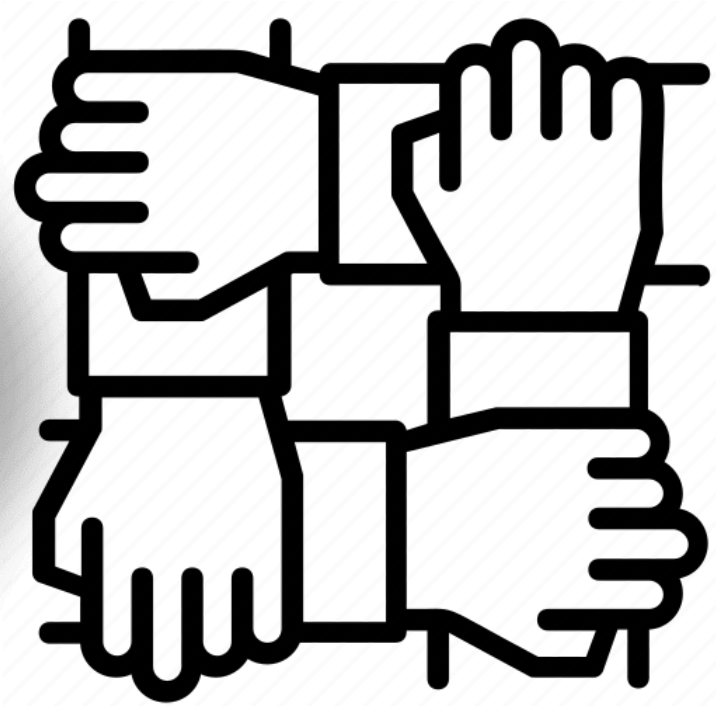
2. The benefits and risks of collaborative research.

3. How we have designed the NHRA-funded *Predictions in Public project* to ensure that its outputs are useful, usable and used in fire agency practice.



The **challenges** of research utilisation

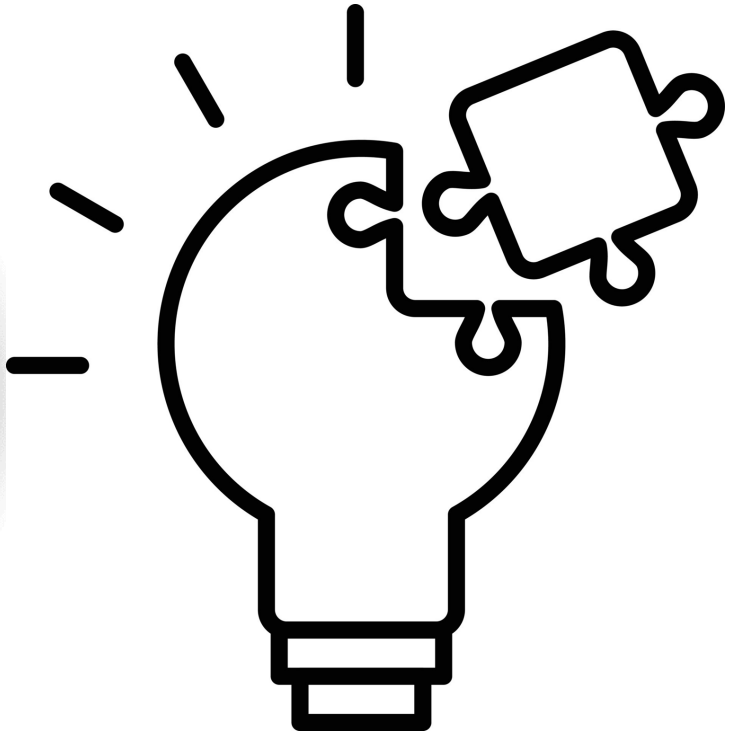
- Often research is conducted with limited involvement from end users.
- Research tends to simplify complex problems to enable rigorous study and generalisable results.
- This can lead to a gap between research and practice.



The **benefits** of collaboration

- Terms such as co-design, co-production, and co-creation are used in many disciplines and government agencies.

- They have positive connotations.
  - Complex problem solving.
  - Creation of research outputs that are useful, usable and used.



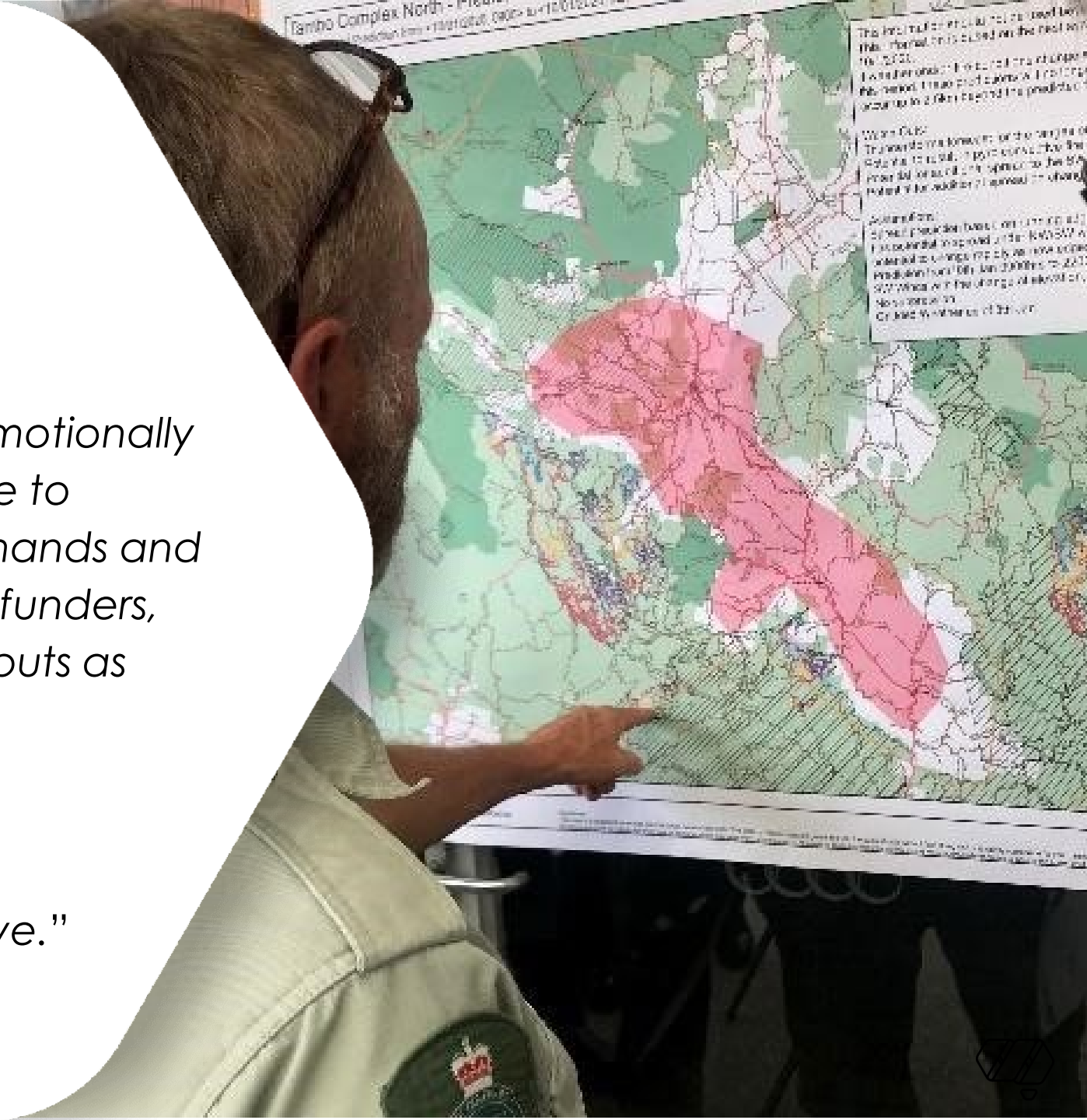
The **risks** of collaboration

Flinders et al, 2016, p. 266:

"It is time-consuming, ethically complex, emotionally demanding, inherently unstable, vulnerable to external shocks, subject to competing demands and expectations, and other scholars (journals, funders, and so on) may not even recognise its outputs as representing 'real' research…"

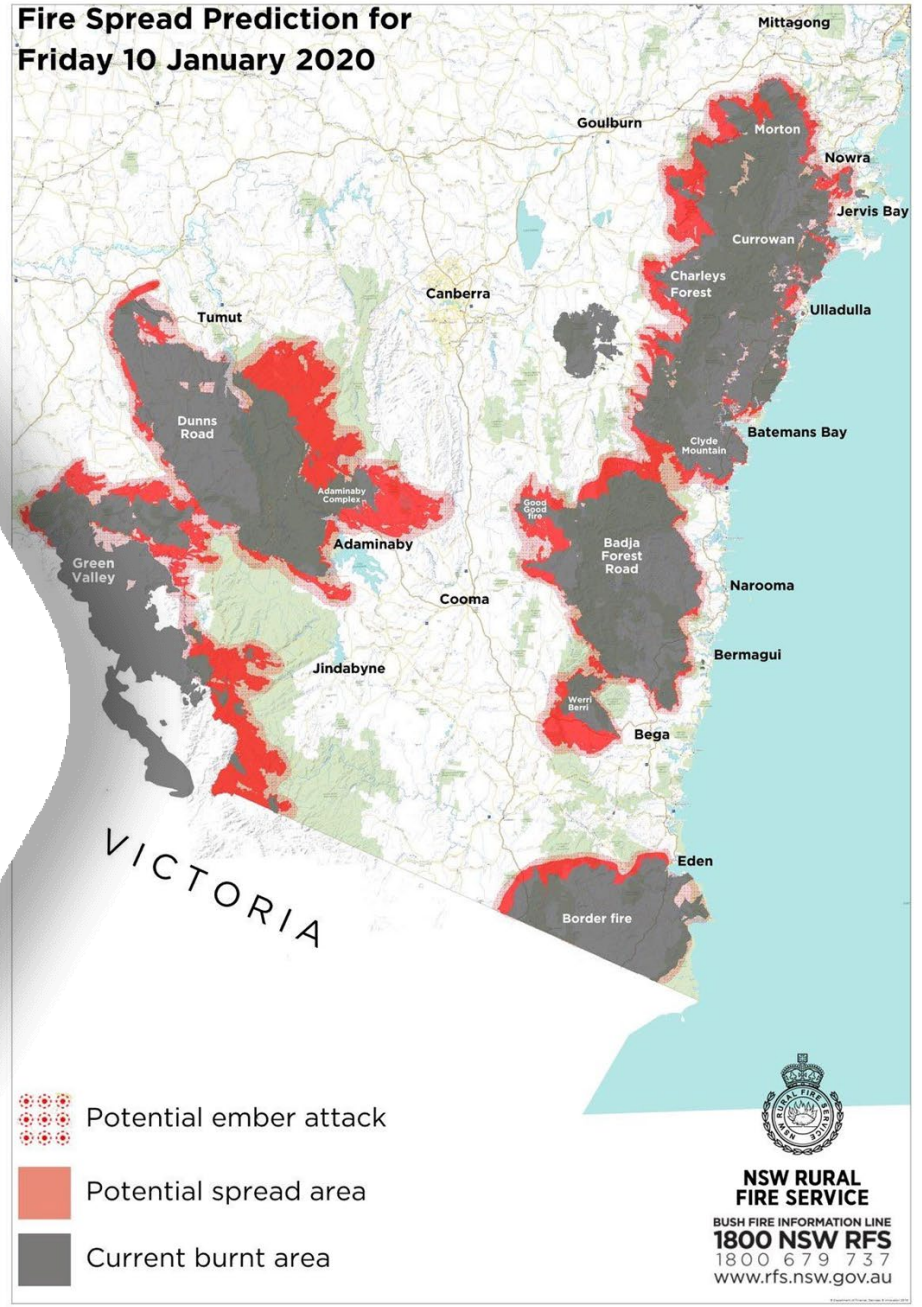
But,

"This is what makes it so fresh and innovative."



Predictions in Public Project: Background

- Technological advancements
- Expectations from the public
- Recommendations from reviews, inquiries, and royal commissions
- Political pressure
- Previous research in Victoria found support for use of predictions in public but, concerns remain for how to embed predictions into existing warning products and when and how to release them to the public (Begg et al. 2021).



Project Aims

- to use empirical evidence and collaborative processes to contribute to a national approach to the future use of public-facing predictive fire spread products during an emergency.

Project Team

Coordinators

- Chloe Begg (CFA)
- Angela Gardner (Vic Dept. Edu.)

Research Team

- Paula Dootson (QUT)
- Amy Griffin & Erica Kuligowski (RMIT)
- Timothy Neale (Deakin University)
- Graham Dwyer (Swinburne)

Project Team

Project Steering Committee:

- Representatives from **AFAC PSG** and **AFAC WG** from each Australian jurisdiction.
  - **TAS** - Chris Collins (PSG) and Heather Stewart (previously Peter Middleton) (WG)
  - **WA** - Jackson Parker (PSG) and Anni Fordham/Deana Pullella (WG)
  - **QLD** - Jack Emeleus/Mandy Price (PSG) David Dumsday (WG)
  - **NSW** - Laurence McCoy/David Field (PSG) and Ben Shepherd (WG)
  - **VIC** - Phillip Brien (PSG) and Reegan Key/Marc Unsworth (WG)
  - **ACT**- Ailish Milner/Ryan Lawery (PSG) and Leighton Bush (previously James Morris) (WG)
  - **SA** - Simeon Telfer (previously Mike Wouters) (PSG) and Monique De Silva (WG)
  - **NT** - Don MacCorquodale and Angus Farlam (previously Akshy Athukorala)
  - **BOM** – TBC (previously Fiona Dunstan)

Project Design

Phase 1:

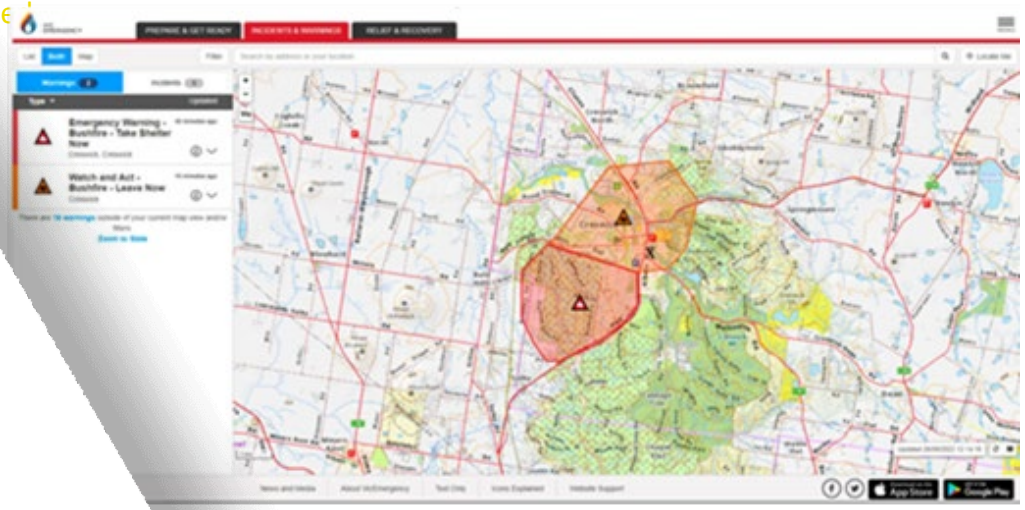
Understanding current agency practice and community comprehension and use of existing public-facing map-based products (i.e., incident warning maps and fire spread prediction maps).

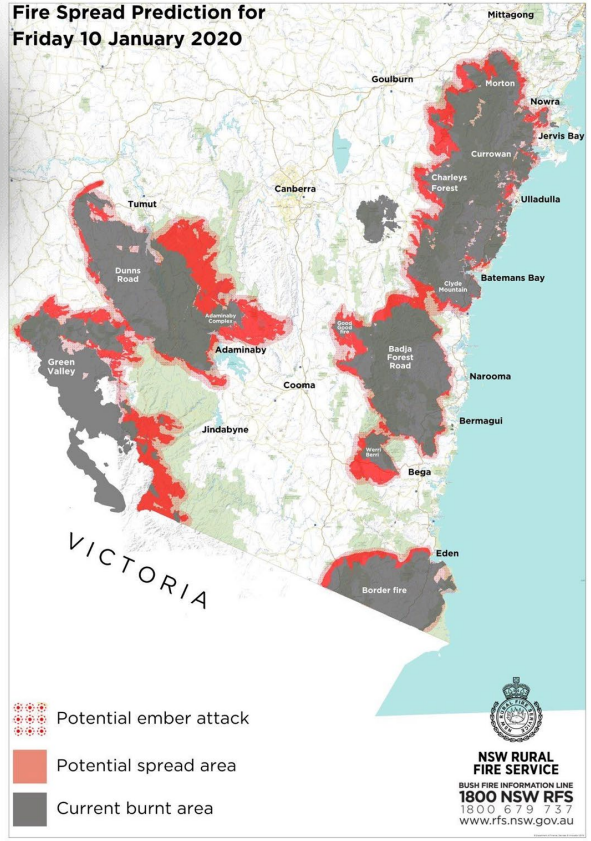
Phase 2:

Developing and testing public-facing fire spread prediction map concepts.

Phase 3:

Developing practical outputs for agency use.

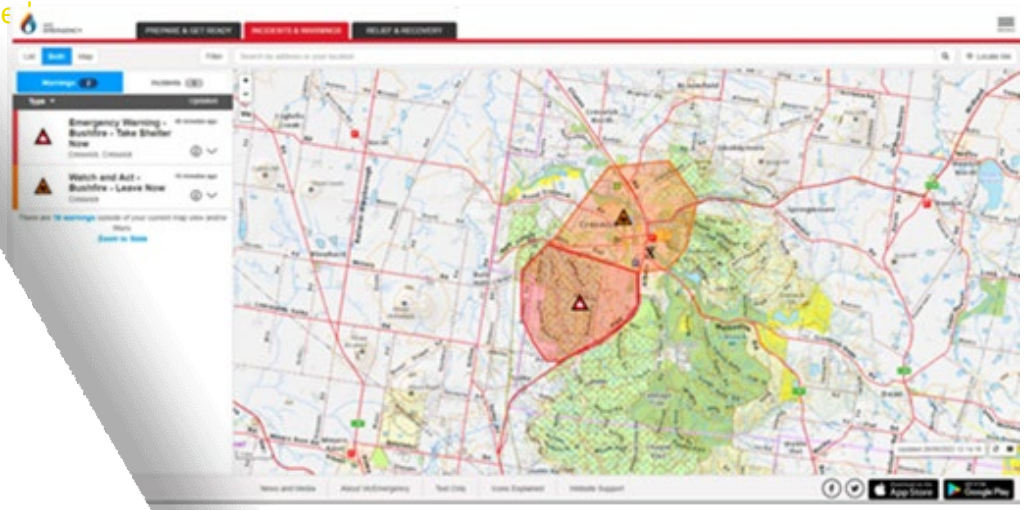


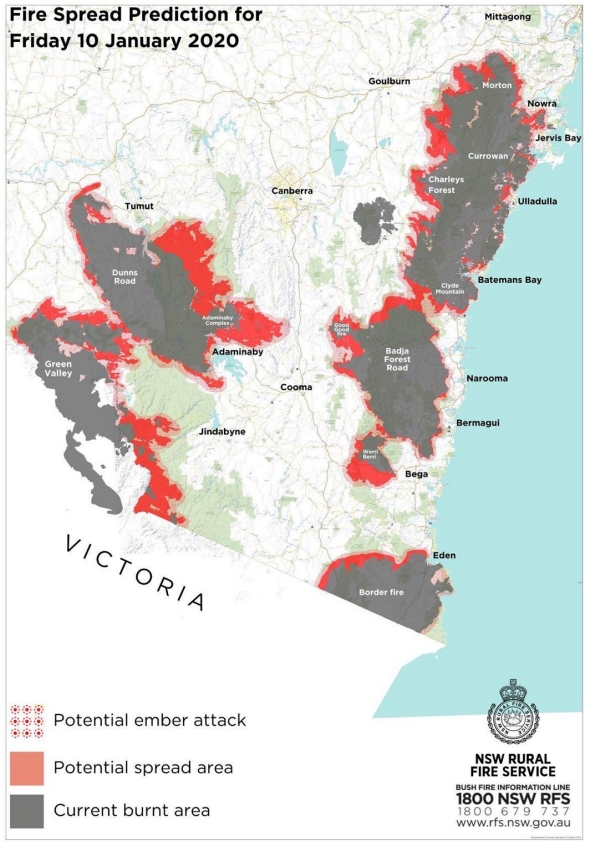


Research Findings

Community interviews

- **Focus of the study:** examine how community members with bushfire experience understood, used and took action in response to existing bushfire maps (incident and prediction).
- **Comprehension challenges:** meaning of warning polygons, triangle symbols and the meaning of their location, and risks associated with certain map areas (e.g., grey/burnt and red areas).
- **Additional Information requested:** wayfinding and navigation, environmental conditions, weather information/forecasts, and emergency response information.

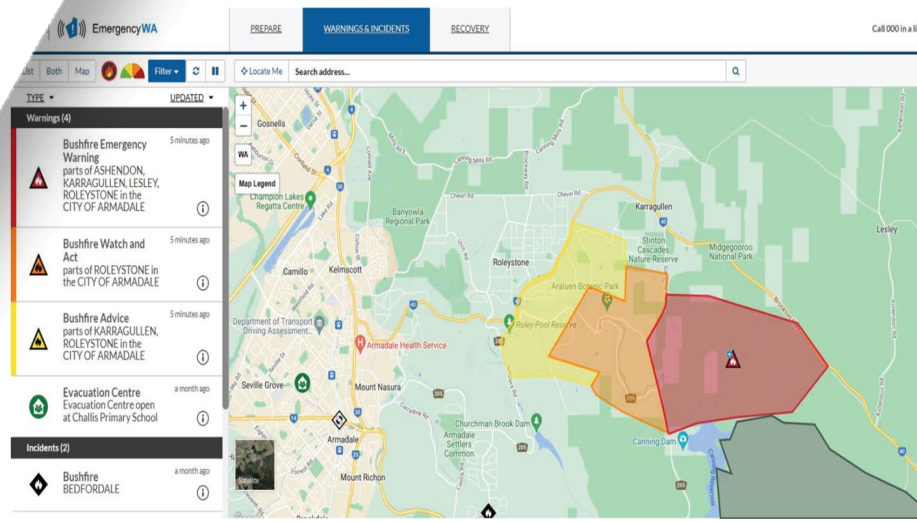


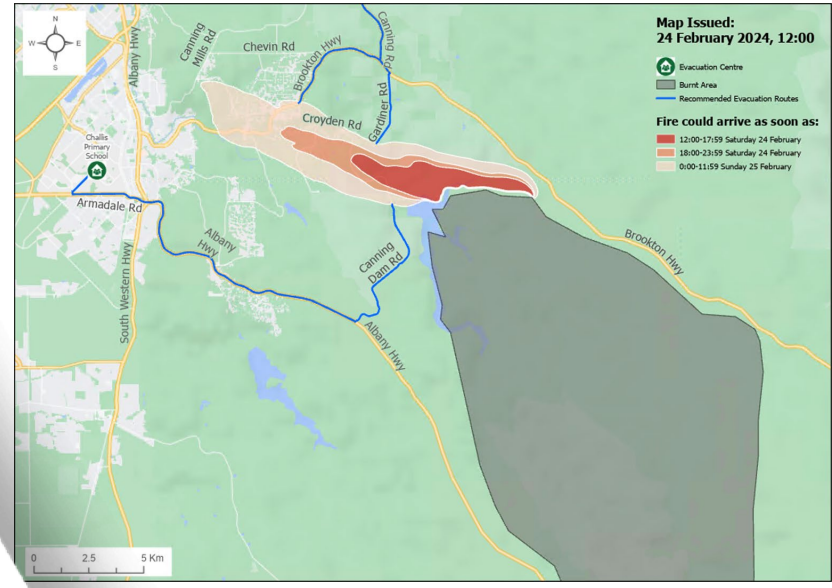


Evidence-Based Principles

Six principles to help structure the design of the empirical studies:

- **Principle 1:** Ensure there are clear triggers for predictive map production, dissemination, and updates.
- **Principle 2:** Ensure that map readers can understand their location in relation to the hazard (self-localisation) and the information that is displayed on the map can support appropriate protective actions.
- **Principles 3:** Ensure maps communicate risk and uncertainty.
- **Principle 4:** Ensure predictive maps complement incident warning maps.
- **Principle 5:** Ensure that maps are accessible to a wide range of audiences.
- **Principle 6:** Ensure cross-border coordination regarding authorisation of map dissemination to the public.





Lessons for research utilisation

- Create **incentives** for researchers and/or ensure that research design results in an **academic contribution** as well as **practically relevant outputs**.
- Allow for more **time** than you would for a standard research project (and then add a contingency plan!).
- Create a **facilitation** role between researchers and end users.
- Ensure that there are planned, clear, inclusive and transparent **feedback opportunities** and decisions.

Thank you!

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