

ISSUE 90 FEBRUARY 2021

TOPICS IN THIS EDITION | DECISION MAKING | MULTI-HAZARD | POLICY

LEARNING LESSONS FROM THE PAST WITH THE INQUIRIES AND REVIEWS DATABASE



▲ **Above:** THE INQUIRIES AND REVIEWS DATABASE CATALOGUES 315 NATURAL HAZARD INQUIRIES AND REVIEWS ABOUT EMERGENCY MANAGEMENT FROM THE PAST 130 YEARS IN AUSTRALIA. SHOWN HERE IS THE NUMBER OF INQUIRIES, BY HAZARD TYPE, ACCESSIBLE IN THE DATABASE.

ABOUT THIS PROJECT

The Inquiries and Reviews Database catalogues the outcomes of more than 300 inquiries, reviews and Royal Commissions across all states and territories in Australia. Initially developed as part of research completed by Martijn Gough (Aither), Prof Stephen Dovers (Australian National University), A/Prof Michael Eburn (Australian National University) and Lawson Cole (Aither) for the *Major post-event inquiries and reviews: review of recommendations* Tactical Research Fund project, the Database has since been considerably expanded and now brings together more than 130 years' worth of data, capturing the outcomes from more than 300 inquiries and reviews into emergency management and natural hazards in Australia since 1886.

SUMMARY

The Inquiries and Reviews Database is web-based and builds on research that reviewed post-event inquiries in Australia. Using the outcomes of the research, the CRC developed the Inquiries and Reviews Database, which is now hosted on its website at <https://tools.bnhcrc.com.au/inquiries>.

The Database currently holds 4,194 recommendations from 315 reviews and inquiries dating back to 1886 – making it a highly valuable resource for gaining an oversight of, and insight into, the recommendations that are made across multiple Australia states and territories, hazards and inquiry types.

The Database captures and categorises the recommendations by state/territory, hazard type and inquiry type, allowing

users to access all of this information in one place and making it easy to incorporate lessons learned during past natural hazards. Australia's emergency services sector can now use the Database to easily navigate through more than 130 years of data, facts and recommendations from 315 different inquiries, reviews and coronial inquests into natural hazards in Australia.

The Database is being used to support increased inter-jurisdictional lesson sharing, giving emergency services the upper hand in learning from the past to create a safer future.

You can access the Inquiries and Reviews Database at <https://tools.bnhcrc.com.au/inquiries>



▲ **Figure 1:** NUMBER OF INQUIRIES BY INQUIRY TYPE IN THE INQUIRIES AND REVIEWS DATABASE.

BACKGROUND

Natural hazards and emergencies in Australia are often followed by formal, complex, post-event inquiries, Royal Commissions and reviews, most recently the *2020 Royal Commission into National Natural Disaster Arrangements*. These inquiries vary in form and focus, however their common objective is to identify the causes and consequences of natural hazards, so as to inform better future practices that reduce damage and loss. Together, these inquiries have made thousands of recommendations and findings, varying across states and territories.

The outcomes and recommendations that arise from major inquiries in one state or territory sometimes have ramifications and can lead to reform in other states and territories. While this is especially the case with larger, higher profile events and inquiries, the extent to which cross-jurisdictional lessons have been applied from less high-profile post-event inquiries and reviews is unclear. To enable lessons to be learned between states and territories after a natural hazard inquiry or review, emergency services need to be able to access a synthesised and categorised set of outcomes. This would help states and territories identify the main recurrent

themes and would assist agencies in the application of lessons in their own context.

This project and the subsequently developed Inquiries and Reviews Database addressed this need by developing a comprehensive and user-friendly database of thousands of recommendations from post-event reviews and inquiries, which can inform agencies' own identification of lessons now and into the future.

BUSHFIRE AND NATURAL HAZARDS CRC RESEARCH

The Inquiries and Reviews Database was initially developed through a partnership between researchers at Aither and ANU, before being further expanded and managed by the CRC. The research team's approach broadly consisted of three phases: development of the database, coding recommendations and thematic analysis, and interpretation of findings. The research aim was to examine the ongoing value for state and territory emergency services to consider lessons from major reviews and inquiries from other states and territories.

Database preparation

The preparation of a searchable, retainable and updateable database, that compiles the

recommendations of inquiries and after-action reviews, was required first, before undertaking analysis. Through a desktop search of keywords and relevant websites, more than 140 reviews and inquiries were identified, initially just between 2009 and 2017. This was refined by applying exclusion and inclusion criteria to identify a subset of appropriate reports. Reviews that did not appear to yield any practicable recommendations were ignored. A final shortlist of 55 major post-event reviews and inquiries was selected for analysis.

Data coding and thematic analysis

Initially, researchers incorporated 1,336 recommendations into the Database. This has since been expanded. Each recommendation was then independently coded into one of 32 broad themes, which are now included in the current Database's 39 recommendation topics. The themes were analysed to separate the largest high-level themes into groupings of recommendations with similar subject matters. The same process was applied to several themes that contained an average number of recommendations. The themes containing the least recommendations were also identified for analysis.

END-USER STATEMENT

“Such a relatively simple system, but such an incredible amount of knowledge contained within. It really is such a potentially powerful tool, and brilliant that it enables practitioners from across the sector to assess such a wide range of knowledge.”

Stephen Sennet, Volunteer National Incident Management Officer, Australian Red Cross

“The inquiries and reports following major natural disasters are produced in the context of powerful community sentiment and political considerations such that, despite their best intentions, investigators often struggle to produce reports that are fully objective and complete. The CRC’s new Inquiries and Reviews Database enables researchers to more effectively distil the accumulated wisdom from across a large and growing body of inquiry reports.”

Adrian Birch, private data analyst and developer

Interpretation

The last stage of the research was to examine the specific meaning of recommendations against others of the same subject matter, to understand whether they were generic in nature and recurred across multiple inquiries (and so could be valuable across multiple states and territories), or were specific to unique contexts.

RESEARCH FINDINGS

The analysis and interpretation showed that there were a significant number of parallel recommendations made amongst the reviews and inquiries, as well as a number of recommendations that could have broad significance for multiple states and territories. While there were several recommendations that were not matched across states and territories, this may be due to the fact that some states and territories have not yet experienced an event that reveals specific weaknesses or issues in a system.

The analysis revealed that recommendations can generally be understood as belonging to one of what is now 39 descriptive topics, grouped under six key themes: agency organisation, responsibility, response, preparedness, research and technology, and recovery. The number of recommendations within each of the themes is represented in Figure 2 (page 4).

Within those themes, the topics with the largest number of recommendations are:

- doctrine, standards and reform (760 recommendations)
- emergency management agency and authority (334 recommendations)
- government responsibility (253 recommendations)
- training and behaviour (209 recommendations)
- inquiry, audit, lessons management (206 recommendations).

Among the recommendations were several calls for national consistency and cooperation, which has been recently echoed in the *2020 Royal Commission into National Natural Disaster Arrangements*. These recommendations are important because they elevate the goal of accurate and consistent information and communications across Australia, not just isolated to one or several states and territories.

HOW IS THE RESEARCH BEING USED?

Since its release in 2019, the Inquiries and Reviews Database has been a valuable resource for gaining an overview of, and insight into, the recommendations that are made across multiple states and territories, hazards and inquiry types – helping government and emergency management agencies recognise past lessons and identify effective practices both now and into the future. The *2020 Royal Commission into National Natural Disaster Arrangements* referenced the Database and noted that it would not be seeking to duplicate efforts of past inquiries.

As of February 2021, the Database contains recommendations and findings from 315 inquiries and reviews relating to emergency management and natural hazards across all jurisdictions in Australia between 1886 and 2020, including agency, audit, coronial, government, independent parliamentary and Royal Commission inquiries (see Figure 1, page 2).

The data can be sorted by disaster and inquiry type, date and state/territory using a simple table display. For more in-depth analysis, CSV files can be downloaded allowing users to run local queries and reports.

The Database also contains the full recommendations from 186 inquiries and

reviews between 2003 and 2020. A faceted exploration interface enables a filter-search of 4,194 recommendations, allowing effective search and comparison through keywords and themes (Figure 2, page 4).

The Inquiries and Reviews Database can be used for a variety of purposes including:

- to compare equivalent recommendations between inquiries, themes and jurisdictions
- to track inquiries across jurisdiction, year and types
- to download and work with all inquiries and listed recommendations for the particular needs of an organisation.

To give a specific example, a search for bushfire inquiries in the Database shows that, since 2003, there have been 82 inquiries, resulting in 1,748 recommendations. The ‘doctrine, standards and reform’ classification has the most recommendations (254). ‘Emergency management agency and authority’ and ‘Incident Management Teams’ have also had many related recommendations, with 110 and 88 respectively.

For floods since 2003, there have been 19 related inquiries with 478 resulting recommendations; 135 of which relate to ‘land use and building regulations’, 76 to ‘government responsibility’ and 72 to ‘doctrine, standards and reform’.

On the other hand, there have been only two tsunami-related inquiries in Australia since 1886, with three resulting recommendations relating to ‘research’ and the ‘role of Commonwealth Government’ from the 2005 *Tsunamis – Does anyone have to die?* Federal inquiry.

FURTHER READING

Cole L, Dovers S, Eburn M & Gough M (2017) Major post-event inquiries and reviews: review of recommendations, Bushfire and Natural Hazards CRC, Melbourne, <https://www.bnhcrc.com.au/publications/biblio/bnh-4392>.

Royal Commission into National Natural Disaster Arrangements (2020) *Background paper: Australian inquiries and reports concerning natural disasters*, Commonwealth of Australia, <https://naturaldisaster.royalcommission.gov.au/publications/background-paper-australian-inquiries-and-reports-concerning-natural-disasters>

Inquiries and Reviews Database website (2019) Bushfire and Natural Hazards CRC, <https://tools.bnhcrc.com.au/inquiries>

RECOMMENDATION TOPICS

4,194



▲ **Figure 2:** NUMBER OF RECOMMENDATIONS BY CODED THEME IN THE INQUIRIES AND REVIEWS DATABASE.



The Inquiries and Reviews Database webpage, accessible at <https://tools.bnhcrc.com.au/inquiries>

The Bushfire and Natural Hazards CRC is a national research centre funded by the Australian Government Cooperative Research Centre Program. It was formed in 2013 for an eight-year program to undertake end-user focused research for Australia and New Zealand.

Hazard Notes are prepared from available research at the time of publication to encourage discussion and debate. The contents of *Hazard Notes* do not necessarily represent the views, policies, practises or positions of any of the individual agencies or organisations who are stakeholders of the Bushfire and Natural Hazards CRC.

All material in this document, except as identified below, is licensed under the Creative Commons Attribution-Non-Commercial 4.0 International Licence. Material not licensed under the Creative Commons licence:

- Bushfire and Natural Hazards CRC logo
- All photographs.

All rights are reserved in content not licenced under the Creative Commons licence. Permission must be sought from the copyright owner to use this material.