

FIRE NOTE

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HOUSEHOLDER PREPARATIONS FOR BUSHFIRES CHECKLIST ITEMS FOR RESEARCHERS



BACKGROUND

Historically, Australian communities have proved vulnerable to various kinds of natural disasters, particularly tropical cyclones, severe storms, floods and bushfires. Of these, bushfires have accounted for the most fatalities (Ellis, Kanowski & Whelan, 2004). From 1900 to 2008, bushfires caused 552 recorded civilian deaths. Two-thirds of the deaths resulted from just 10 fires or fire seasons which all involved extreme fire weather conditions (Haynes, Handmer, McAneney, Tibbits, & Coates, 2010). Fires which occurred in several parts of Victoria on 7 February 2009 ('Black Saturday') caused 173 deaths and the destruction of more than 2000 homes. Fires in Western Australia on 29 December 2009 (Toodyay), 10 January 2011 (Lake Clifton) and on 6 and 7 February 2011 (Perth Hills) resulted in the destruction of more than 100 homes in total.

Only a modest amount of research into householder preparation for bushfires, as an aspect of community bushfire safety, has been published in scientific journals to date. A few other studies have been conducted by agencies, and written up as in-house reports (for examples see Whittaker & Handmer, 2010). One factor which may have contributed to the limited amount of available research about householder preparations for bushfire is a lack of a suitable checklist-type instrument describing bushfire preparation activities for researchers to use or adapt, without the need to 're-invent the wheel from scratch' for each study.

A recent report (McLennan & Elliott, 2011) aims to make available to community bushfire safety researchers a checklist of householder bushfire preparation activities which can be used as the basis for research investigating community bushfire safety issues associated with preparation for bushfires. The goal was to generate a manageable (rather than an exhaustive, and lengthy) checklist of activities,

SUMMARY

Bushfires are a serious hazard for many Australasian communities, accounting for numerous deaths and considerable economic loss. Only a modest amount of research into community bushfire safety has been reported so far. The availability of a generic research checklist of householder bushfire preparation activities may assist researchers to build on this body of work. This *Fire Note* describes the development of a 30-item research checklist which includes items related to both staying to defend and leaving safely. It can be modified for particular research purposes and can be used in paper, electronic and on-line formats. The checklist is available at www.bushfirecrc.com/resources/research-report/checklist

ABOUT THIS PROJECT

This research is from the *Communicating Risk/Human Behaviour Under Stress (2)* project.

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Jim McLennan



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▲ Dr Jim McLennan, left, working in the field at Strathewen with members of the the multi agency research taskforce after the 2009 Victorian Black Saturday fires.

incorporating those actions regarded by experienced community bushfire safety practitioners and researchers as sound preparation by residents of communities at-risk of bushfire attack for either staying and defending or for leaving safely.

BUSHFIRE CRC RESEARCH

A search of the scientific literature revealed only one published Australian study which listed householder bushfire preparation activities (Paton, Kelly, Buergelt & Doherty, 2006). (A list of preparation activities tailored for the Californian wildfire risk situation was published by Martin, Bender, and Raish, 2007). Another list of householder bushfire preparation activities was developed for use in a postal survey of residents of communities affected by the Victorian 7 February 2009 ('Black Saturday') bushfires (Whittaker, Haynes, McLennan, Handmer & Towers 2010).

Items from the two Australian lists were combined, after amalgamating items with similar content, to form a draft version of a proposed checklist of householder bushfire preparation activities. This draft checklist was circulated by the authors to an eight-person panel comprising members with expertise in: community bushfire safety research;

READY FOR FIRE?

Accounts by residents of Lake Clifton, WA, impacted by the fire of 10 January 2011 about bushfire preparation:

"I bought a fire fighting pump. I put in a secondary fire break around the house ... I burnt kind of around here, where the bush was closest to the house ... I had 70 metres of firefighting hose. ('water?') Rain, 95,000 litre galvanised iron tank." [A003]

"I always used to go around the block and make sure I cut it down; slashed all the vegetation down. I picked up all the loose stuff that I could and made fires during the winter ... I've got about half a dozen reticulation points around the house. I've got a very long lead from the bore directly into the tank, bore water and as soon as that fire started there I turned the bore on and sprinklers then came on to my roof and sprinklers all came around here ... we filled a suitcase and this was after reading that fire brigade stuff that came through the post ... we put all relevant documents in there and we put a few photographs in there, all photograph albums and we filled that suitcase with what we called 'memories.'" [A001]

"None, I didn't even think about it." [A007]

community bushfire safety education; bushfire behaviour; buildings fire safety and approval; and post-bushfire investigation.

Members of the panel were asked to examine the list of items independently and to: (a) identify any items which they did not regard as describing essential bushfire preparatory activities; and (b) suggest other essential preparatory activities which

should be added to the list, including items relevant for property protection and defence and for leaving safely. After collating the responses and combining proposed activities with similar content a second version was prepared. This was circulated to panel members for comment, and suggestions for further revisions were invited, resulting in several changes.



END USER STATEMENT

“There is very little robust research on the extent to which people prepare for bushfires. Understanding the detail of how people prepare for and deal with the threat of fire is critical to policy makers, along with those engaged in community safety and operational command. The availability of a checklist for researchers will help them bring certainty to the interrogation and assessment of just how well-prepared are people who live in high bushfire risk environments.”

– John Schauble,
Manager Policy and
Planning, Fire Services
Commissioner Victoria.

A third version was circulated to a panel of four experienced researchers. Members were asked to review the instructions and format and to suggest revisions to improve the quality of the data likely to be obtained. When the suggestions were compiled some additional items were added to the checklist, and changes made to the instructions and the wording of some items.

Copies of the resulting 30-item checklist, which included items about both preparing for staying to defend and for leaving safely, were then given to five individuals who had no connection with the development of the checklist and whose residence was in a location they judged to be at risk of bushfire attack. They were asked to first complete the checklist *as if* they were taking part in a household bushfire safety survey, and then to go through the checklist a second time noting any difficulties they had experienced in: understanding an instruction, or

understanding an item, or responding to an item. Their comments resulted in several minor changes of wording.

RESEARCH OUTCOMES

The current version of the checklist is at Appendix A of the report by McLennan and Elliott (2011) available from the Bushfire CRC web site at www.bushfirecrc.com/resources/research-report/checklist

The checklist asks first about bushfire safety plans (a) for a fire season, and (b) for when a bushfire warning is received. Then there is a list of bushfire preparatory activities which might be relevant irrespective of whether the householder plans to leave or to stay and defend the property. Finally, there is a list of preparatory activities relevant to a day of predicted Severe or Extreme fire danger rating. It was decided not to include reference to a day of Catastrophic fire danger rating because of an expectation that many residents of at-risk communities would be

aware of fire agency policy that residents of at-risk communities should leave their property on a day of Catastrophic fire danger rating.

The checklist is best viewed as a possible basis or starting point for a given bushfire preparation research project. The number of items can be reduced or increased to meet the specific needs of a study. Response formats can readily be varied by researchers to match the aims of their project. Numerical values can be assigned to response categories for quantitative analyses, as required. The checklist can be embedded in a larger questionnaire, and the instructions concerning the checklist items can be varied as necessary.

The checklist has been constructed so as to be suitable for completion in both hard-copy and electronic formats. Only minor changes in the instructions are needed to make it suitable for on-line administration.

HOW THE RESEARCH IS BEING USED

The checklist is currently being used in a survey of at-risk communities in South Eastern Australia as part of the Bushfire CRC Communicating Risk/ Human Behaviour Under Stress (2) Project at La Trobe University in Melbourne. The survey aims to find out more about what factors drive decisions by residents of communities at risk of bushfires to (a) formulate their household bushfire plan and (b) undertake their particular preparations to implement the plan.

(The potential advantages of using conceptual models from the health promotion and injury domains were the subject of a review by Beatson and McLennan (2011), summarised in *Fire Note 71, Applying social psychology to community bushfire safety* (Beatson & McLennan, December 2010.)

For further information about the survey of at-risk communities, contact Glenn Elliott at La Trobe University at g.elliott@latrobe.edu.au

FUTURE DIRECTIONS

It is expected that the research checklist will encourage community bushfire safety research investigating ways of promoting preparation to survive bushfires.



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