



**Victorian 2009 Bushfire  
Research Response**

**Household Mail  
Survey**

**January 2010**

## **Bushfire CRC**

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**Research Results from February 7<sup>th</sup> Victorian Fires  
Second Report on:**

# **Human Behaviour & Community Safety**

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This work was undertaken for the Bushfire CRC as part of the Post-fire Research Program in Human Behaviour.

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We acknowledge with gratitude the participation in this research of the residents of the bushfire-affected areas, many of whom had suffered major losses.

This project has many debts. Numerous people contributed to the research, including in the field, in logistics, intellectual support, leadership and countless other ways. Our sincere thanks go to all who contributed, including those not named below.

The project began a few days after the February 7<sup>th</sup> bushfires. The first part of the project involved interviews with more than 600 residents who were affected by the February 7<sup>th</sup> fires. Field interviewers were drawn from agencies and groups across Australia, including from: Terramatrix; the Tasmania Fire Service; NSW Rural Fire Service; SA Country Fire Service; CFA; DSE; CSIRO; and RMIT and La Trobe universities. The 'Human Behaviour' team worked collaboratively and productively with the 'Building and Planning Issues' team, led by Justin Leonard of CSIRO. Our sincere thanks are due to all who worked in our teams or who collaborated with us, in particular to Sarah McCaffrey who joined us from the US Forest Service and provided valuable advice at the critical, early stage.

There were many teams in the field at fire sites across Victoria at any one time. Coordination of such large numbers of people in terms of logistics was a major task undertaken by the Bushfire CRC and AFAC. We thank these organisations sincerely for their leadership, patience and capabilities, in particular Lyndsey Wright, overall manager of the post-fire research program, Duncan Maughan of Terramatrix, who coordinated the fieldwork, and Richard Thornton, who oversaw the process. They were supported by staff from the CFA, DSE, OESC and elsewhere. The individuals who contributed are too numerous to mention, but include Alison Stone of DSE, Gary Morgan of the Bushfire CRC, Naomi Brown of AFAC, John Gledhill of the Tasmania Fire Service, Euan Ferguson of the SA Country Fire Service, Neil Bibby of the CFA and Bruce Esplin of the OESC.

The 'Householder response to the February 7<sup>th</sup> bushfires' survey was developed from the initial field interview research. In addition to the individuals and groups mentioned above, many of whom contributed directly to the survey's development, we would like to thank Michael Black of Spatial Vision, and Robert Pascale and Stephen Pittman of Datatime Services Pty Ltd.

Finally, we acknowledge with appreciation our home institutions, which have supported the research and accepted that, for the moment, our priorities lie elsewhere.

#### Disclosure

This work was undertaken under the auspices of the Bushfire CRC, a research body established under the Federal Government's CRC program. The Bushfire CRC has members who contribute financially to the centre; these include fire and land-management agencies as well as research partners such as universities, CSIRO and others. In particular, the CFA and DSE are members of the Bushfire CRC.

This report and the survey it describes were conducted as part of a major research response to the Victorian February 7<sup>th</sup> Bushfires; this research was funded by the Victorian Government through the CFA, DSE and OESC contributing cash, with other fire services and research providers providing in-kind resources. The research direction, however, was determined by the Bushfire CRC and its researchers and not dictated by the agencies involved.

### Executive Summary

On Saturday February 7<sup>th</sup>, 2009, Victoria experienced the worst bushfires in Australia's recorded history. One hundred and seventy three people lost their lives and more than 2000 homes were destroyed, in addition to substantial economic and environmental impacts.

In response to these events, the Bushfire CRC established a Research Taskforce to undertake research for the fire and land management sector and the fire research community in Australia and internationally. The Research Taskforce covered three key areas:

- Fire Behaviour
- Human Behaviour and Community Safety Issues
- Building (infrastructure) and Planning Issues

This is the second report of the 'Human Behaviour and Community Safety Issues' team. It presents preliminary findings from a survey of approximately 6000 households in fire-affected areas. There were 1350 completed surveys returned from households that were affected by the February 7<sup>th</sup> bushfires. The findings presented in this report are based on an analysis of 1104 of these completed surveys. Those surveys returned after the first round of data entry was completed were not included in this analysis. The full dataset will be available for subsequent analysis.

A response rate of approximately 25% was obtained. This is generally considered sufficient to avoid sampling bias. This figure excludes 699 uncompleted surveys that were returned to the RMIT University's Centre for Risk & Community Safety, the vast majority of which were undeliverable. It is also possible that a number of other residents did not receive the survey.

Despite the apparently small response rate (25%), the results are statistically valid but, like any survey, these results should be read in the appropriate context, *viz.*:

- owing to time and resources, the survey was not Victoria-wide, so it would be inappropriate to assume the responses reflect the broader Victorian community;
- the survey is not longitudinal, so we cannot yet compare changes in attitude over time; however, there is obvious scope and opportunity to pursue similar longer-term and ongoing surveys to build a meaningful picture of attitudinal change over time;
- there was no 'control group' of non-fire affected respondents to compare these results with; and
- like any survey, the results are affected by normal bias (e.g. the benefits of 'hindsight' in reporting fire planning, or those severely affected by fire may not have responded).

This report presents the basic frequencies and percentages for each question contained in the survey. A comprehensive statistical analysis of trends and correlations within the data is beyond the scope of this report. As such, the preliminary findings detailed within this report should be considered indicative and preliminary. Key preliminary findings from the survey are as follows:

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### **Section 1: How the bushfire affected you and your property**

- Approximately one-third (32%) of respondents reported that their house was destroyed in the bushfires. Rates of house destruction were significantly higher among respondents in the Murrindindi (46%), Churchill (38%) and Kilmore East (32%) fire complexes.
- The vast majority of respondents (88%) reported that their household was adversely affected by the bushfires.
- Thirteen respondents (1%) reported that a member of their household had perished in the fires. A total of seven per cent of respondents reported that a household member was injured in the fires.
- Almost two-thirds of respondents reported that a household member had felt more sad or depressed (64%) and/or more nervous or anxious than usual (60%). More than one-third of respondents (39%) reported increased strain between members of their household as a result of the fires.
- A significant proportion of respondents indicated that they had experienced financial strain due to job loss or loss of livelihood (29%) and/or a lack of insurance (20%). A small number of respondents (4%) reported that they did not have insurance.

### **Section 2: Information and warnings**

- Almost all respondents (99%) reported that they were aware that February 7<sup>th</sup> was a day of Total Fire Ban.
- The majority of respondents (72%) expected to receive an official warning if there was a bushfire in their town or suburb.

Note: the survey did not include newspapers as a potential source of 'official warning'.

- Almost two-thirds (63%) reported that they did not receive an official warning. A majority of respondents in Kilmore East (73%), Bendigo (61%) and Murrindindi (56%) reported not receiving an official warning.
- More than two thirds (68 %) of those who reported that they received an official warning reported having had 'ample' or 'just enough' time to respond safely.
- Almost two-thirds of respondents (63%) reported that they received information and warnings about the fire from a family member, friend or neighbour.
- Respondents most commonly became aware of the fire through: sensory cues from the environment (i.e. smoke, embers, fire; 49%); a warning from family, friends or neighbours (28%); or a radio announcement (8%).
- The survey did not directly ask respondents whether they lost power and/or phone services during Black Saturday; such losses would have had obvious effects on respondents accessing the web, TVs and some phones to receive 'official warnings'.

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### **Section 3: Before the bushfires**

- The majority of respondents (69%) claim to have had a firm plan about what to do if a bushfire occurred before February 7<sup>th</sup>. It is relevant to note that the qualitative analysis of interviews with residents found considerable variation in the quality of people's plans and that a considerable amount of 'last-minute' planning and preparation occurred on the day.
- A greater proportion of respondents from Bendigo (60%) and Horsham (49%) had not considered or decided what they would do if a bushfire occurred, or had decided that they didn't need to do anything. Similarly, the proportion of respondents from Bendigo (29%) and Horsham (24%) that reported having a firm fire plan was significantly lower than in areas such as Beechworth–Mudgegonga (77%), Churchill (77%) and Kilmore East (75%). This is consistent with the finding presented in the first report of the team<sup>1</sup> that many interviewees living in more suburban locations had not planned or prepared for bushfires because they did not consider themselves at risk.
- Half of all respondents (50%) reported that, at the beginning of last summer (2008), they intended to stay and defend their house or property from bushfires. A total of 19% reported their intention to leave, including 17% who planned to leave as soon as they knew a fire was threatening and 2% who planned to leave on all days of high fire danger. Significantly, more than a quarter of respondents (26%) reported that they were effectively undecided, including those who planned to stay and defend but leave if threatened by fire (17%) and those who intended to see what the fire was like before deciding whether to stay or leave (9%).
- The majority of respondents (78%) reported discussing their intended response with members of their household. More than two-thirds (68%) had thought about what each member of the household would do. Significantly, fewer respondents had considered how things could change if some members of the household were not at home during a fire (41%) or written down important things to do and remember (26%).

### **Section 4: During the bushfires**

- The majority of respondents (53%) reported that they stayed to defend their homes and properties from the February 7<sup>th</sup> bushfires. A total of 11% of these respondents left when they felt the danger was too great to stay, and 2% did not encounter fire on their properties. Almost half (44%) of respondents left their homes or properties either before or when the fires arrived in their town or suburb. A small proportion (4%) reported that they sheltered inside a house, in a structure other than a house, in a vehicle, or somewhere outside during the fire.
- Half of the respondents (51%) who left their homes and properties before or when the fires arrived considered themselves to have left 'Late' or 'Very late'. A significant proportion of respondents (47%) left because they felt it was too dangerous to stay and protect their house. In addition to seeing or smelling fire nearby, advice from

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<sup>1</sup> *Victorian 2009 Bushfire Research Response Final Report*, October 2009, Bushfire CRC, ISBN: 978-0-9806759-8-6 (<http://www.bushfirecrc.com/research/taskforce2009.html>)

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relatives, friends or neighbours (26%) and the need to remove household members or visitors from danger (25%) were significant factors in motivating people to leave.

- A significant proportion of respondents reported experiencing difficulties associated with leaving late, including: smoke (44%); poor visibility (26%); traffic (24%); embers (22%); flames (17%); and fallen trees (12%).
- The majority of respondents (83%) who stayed with their house or property during the bushfire did so to protect their house, property and/or livestock. A significant proportion (12%) stayed because they felt it was too late to leave, or failed in their attempt to leave.
- One-third (33%) of respondents who stayed with their house or property reported leaving at some stage during the fire. The most commonly cited reason for leaving was that it was too dangerous to stay and defend (46%). Other commonly cited reasons were: there were flames in the immediate vicinity of the property (33%); to remove household members or visitors from danger (27%). One quarter of these respondents (25%) reported leaving because utilities or equipment failed and/or because their house caught fire (15%).
- The majority of respondents (77%) who left their homes and properties before or when the fires arrived stated that they would leave again if there was a similar fire in the future. A similar proportion (78%) of those who stayed with their homes and properties declared their intention to stay and protect their homes and properties from future bushfires.

### **Section 5: Household information**

- The survey revealed a marked disparity in respondents reporting their insurance levels compared with evidence presented to the Victorian Bushfires Royal Commission and in the media. Less than 5% reported having no insurance. The survey did not ask whether residents were under-insured.
- The survey revealed a significant number of respondents whose actions were influenced by their responsibilities to dependents (i.e. elderly, children, disabled)
- The survey respondents appear to have a below-normal distribution of younger adults (<1% of respondents); this is possibly the result of this being a household survey, not an individual survey, and while there may be many young adults living in the area, they may be living in the homes of older residents.