

FIRE NOTE

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HOUSEHOLDERS' SURVIVAL DECISIONS UNDER IMMINENT BUSHFIRE THREAT

– 2011 LAKE CLIFTON (WA) FIRE: A JOINT FESA-BUSHFIRE CRC FIELD RESEARCH STUDY

SUMMARY

This *Fire Note* explores the survival decisions householders made when they came under threat from a bushfire. The bushfire occurred on 10 January 2011, and threatened the rural community of Lake Clifton in Western Australia. There was much comment in the media about how the fire was managed. The week following the fire, a taskforce of researchers from the University of Western Australia, La Trobe University, Victoria University and staff from the Fire and Emergency Services Authority (FESA) was established by the Bushfire CRC and FESA to interview affected residents. Over four days, 40 interviews were conducted covering 56 percent of households directly impacted by the fire. Joint researcher-FESA staff interview teams proved highly effective in capturing residents' bushfire survival experiences that will inform future community safety endeavours. Residents reported a high level of awareness of bushfire risk, but less than half had prepared for a possible fire. Most had thought about what they would do in case of a bushfire, and acted accordingly. Residents reported that their greatest need in order to survive was accurate information about the location of the fire.

ABOUT THIS PROJECT

Bushfire CRC Program: *Communicating Risk*.

Project: *Decisions under stress: Understanding community members' survival-related decision making during bushfires*. An activity update.

AUTHORS

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▲ Members of the FESA-Bushfire CRC taskforce (from left), Rachel Jones (FESA), Patrick Dunlop (UWA), Heather McNamara (FESA), Jim McLennan (La Trobe University), Suellen Shea (FESA), Karli Riseborough (UWA) and Megan Tyler (VU), while Vivienne Gardner (FESA) is behind the camera.

CONTEXT

To assist community members to prepare for a bushfire, fire agencies need to understand (1) if and how community members prepare, (2) what decisions they make under threat from a bushfire and (3) how their level of preparedness impacts on these decisions. This field research study investigated two questions: What influenced bushfire-survival decisions by residents under imminent threat? How can field researchers best obtain useful information from residents impacted by a recent bushfire?

BACKGROUND

From 1900 to 2008, bushfires in Australia caused 552 recorded civilian deaths. Two-thirds of these deaths resulted from 10 fires or fire seasons, which all involved extreme fire weather conditions (Haynes *et al.*, 2010). Fires that occurred in several parts of Victoria on Black Saturday, 7 February 2009, caused 173 deaths and the destruction of more than 2000 homes.

While there has been considerable research into aspects of community bushfire safety in Australasia and North America, most of the published material has focused on factors which promote, or impede, long-term preparation of property to mitigate the effects of bushfires on households (e.g., McFarlane *et al.*, 2011; Paton *et al.*, 2008). From an industry perspective, there is a recognised need for agencies to track the effectiveness of their community bushfire safety endeavours following fires. Therefore, agencies need to obtain high quality information about how householders prepare for bushfires, what householders did under imminent bushfire threat and why.

LAKE CLIFTON FIRE – 10 JANUARY 2011

Lake Clifton is a rural residential area approximately 109 km south of Perth. The vegetation is open woodland and there was considerable cured (dry) grass at the time of the fire. Properties are relatively large and house construction varies, with the most prevalent modern construction being brick veneer with steel roofs.

The Fire Danger Rating was forecast as ‘Very High’ for the south west area of Western Australia, on 10 January 2011 with the automatic weather station at nearby Mandurah recording peak readings of 37.2° C, 15% relative humidity, and east-south-east winds of 20 kilometres per hour.

The fire broke out on the western side of the Forest Highway and moved in a west north west direction toward Lake Clifton. Smoke associated with the fire was detected at 11.47am, and firefighting assets were deployed.

At 3.19pm homes came under threat, with the first house lost at 5pm. The fire was declared contained at 3am the next morning. While more than 40 threatened homes were saved, 10 were destroyed. Most residents had evacuated the area shortly before their homes came under attack and were not permitted to return until the area was deemed safe on 13 January 2011.

BUSHFIRE CRC RESEARCH

The week following the fire, a task force of researchers from the University of Western Australia, La Trobe University, Victoria University and staff from the Fire and Emergency Services Authority (FESA) was established by the Bushfire CRC and FESA. An interview guide was prepared, based on that used for the Bushfire CRC post-Black Saturday survivor interview project.

The Task Force began interviewing residents on 18 January, with 40 interviews conducted over four days. Thirty-five (56%) of the 62 households within the area impacted by the fire were interviewed, plus another five households adjacent to this area. Most interviews were conducted by teams of two: a university researcher paired with a FESA staff member.

AS THE FIRE APPROACHED ...

For many residents, despite the warnings and the smoke plume, there was no sense of immediacy or urgency; a ‘wait and see’ approach was common.

“...it was a case of like, well, should I move them (computers and valuables) or not? Is it going to come? That was what was going through my mind. Like it might not even come that far and I’ve gone to the trouble of moving them all and it might not just happen. I know it sounds really stupid, but that’s sort of what I thought ... but at the back of my mind I’m thinking it’s not going to come anyway. So I wasn’t going to start whacking things in the trailer. I know that sounds really weird when I think about it. I could kick myself. ‘Cause I’m thinking it’s not going to come anyway and I’m going to have to unpack all this bloody stuff when I get home. That was the bottom line.”

“It was only – that was 1.15. I didn’t actually get in my car till quarter to two because I kept thinking to myself, ‘Righto, what haven’t you done?’ Or, ‘It’s still pretty much the same as it’s been for the last hour or more, do you really need to go?’ I potted around, put a few dishes in the sink. I thought if it was going to burn down I’d like it to be tidy!”

Nearly one in five residents interviewed expected to be warned individually that the fire would threaten them:

“By this stage J_____ ... he’d rung me and said ‘I’m on my way home, it looks close.’ Then my daughter kept ringing me saying ‘Mum, have you left yet, have you left yet?’ I said ‘No, FESA – they haven’t been here yet.’ She said ‘I believe they are going door to door.’ I said ‘They haven’t been here yet, I’m sure, you know, if we have to evacuate we’ll be told.’ ”

Interview questions were developed from those used in the post Black Saturday research project to enable comparisons of findings where appropriate. Residents were asked about:

- Their perceptions of bushfire risk.
- Knowledge of and preparations for bushfires.
- Bushfire plans or intentions.
- Sense of bushfire danger on the day.
- Awareness of official and unofficial warnings and other communications about the fire.
- Their experiences and actions on the day.

Interviews were led by the university researcher, with the FESA staff member typically following up with targeted questions about official warnings and communications. In all but two instances, residents were approached on their properties and invited to be interviewed about what happened on the day of the fire (two interviews were conducted in the local community centre, which served as the relief centre after the fire). There were few refusals.

RESEARCH OUTCOMES

The major findings are documented in the Bushfire CRC report available at www.bushfirecrc.com. These findings are summarised here:

- Very few of the 40 people interviewed had any previous experience of bushfire.
- Most residents interviewed had received FESA bushfire safety and preparedness material in the post from the Waroona Shire; however many confessed they had not studied it.
- There was a high level of awareness of bushfire risk in the community – but few personalised the risk; less than half indicated that they had made any preparations for a possible bushfire. There was very limited appreciation of the potential for a serious bushfire on that particular day, despite the predicted conditions.
- Most of the 40 residents interviewed self-evacuated: 15% (6) on receiving a warning about the fire from family or friends or on sighting smoke, 57% (23) left late when the threat was imminent – they saw flames or embers. 18% (7) stayed and defended their homes successfully. Ten per cent (4) were not home on the day of the fire – by chance, not by any decision to be in a safer location because of the predicted weather.
- For many residents, their initial

END USER STATEMENTS

“The Lake Clifton fire occurred just over 12 months after the implementation of a range of new approaches including Australia’s revised arrangements for bushfire communication and the new national position for bushfires and community safety. The research provided an invaluable, if not sobering, insight into the state of community knowledge and awareness, and translation of that information into actions. In particular, the evidence that some of our new initiatives may have, in their own way, added to community complacency is an important insight for consideration as we continue to look for opportunities to improve community preparedness.”

– **David Caporn, Executive Director of Community Development, FESA.**

“Having Community Engagement staff participate in the interviews with the researchers was a great learning experience. The key message that was reinforced is the community’s understanding of leaving early, and the reliance on emergency service personal to tell them to leave. The valuable lessons learnt have been useful in engaging other at risk communities, sharing first-hand knowledge gained during the research at Lake Clifton.”

– **Suellen Shea, Director of Community Engagement, FESA.**

response to evidence of the emerging bushfire threat was to ‘wait and see’ what developed; some drove towards the smoke plume to see for themselves whether or not the fire seemed likely to pose a real threat.

- Most people had thought about what they would do in the event of a bushfire and had a bushfire plan (although for most the plan lacked specifics), and most acted in accord with these thoughts – after the fire most said they would follow the same course of action again.
- Visual cues of the approaching fire such as smoke, embers or flames were particularly important in the decision making process of residents
- Few residents reported that official warnings (radio, SMS alerts, TV) were an important factor in their decisions about what to do.
- Everyone interviewed indicated that they were insured (although some concluded that they were under-insured).
- The majority of people who left went to a nearby community entertainment and recreation precinct where refreshments were available.
- Practical assistance from family

and friends, and information on the location of the fire were seen as key factors impacting on survival.

- In addition to the general sense of threat, visual cues of the approaching fire and the prior commitment to a bushfire plan, a need to protect pets or livestock was identified as an important psychological influence on decision making for many on the day.
- Many residents’ understandings of what constituted leaving safely in the event of bushfire – for example, “when we saw the flames” – was very different from the definition of leaving safely of the FESA community engagement staff.
- Joint agency-university researcher interview teams worked well from the perspective of both FESA staff and university researchers: FESA staff heard directly from residents about how the fire danger was understood and responded to, while university researchers appreciated the knowledge inputs from FESA staff about community safety programs and fire behaviour.

Many of these findings are consistent with those identified in the post Black Saturday research and the study of the February 2011

Perth Hills fires – both of which can be found on the Bushfire CRC website.

A detailed account of the findings is in the report by McLennan *et al.* (2011) available from the Bushfire CRC at: www.bushfirecrc.com/lake_clifton_fire_report. The report also contains the interview guide, the interview coding scheme, the briefing notes for Task Force members and a suggested short checklist for post-bushfire joint field research.

HOW IS THE RESEARCH BEING USED

The findings from the project, and an account of how the joint FESA-universities field research Task Force was organised and managed, were presented as part of the University of Western Australia’s School of Psychology’s *Disaster Research Seminar and Workshop* program in late 2011. Participants came from a range of emergency services agencies, research groups and from local government. The project report provides a template for future joint agency-university post-disaster field research.

FUTURE DIRECTIONS

The field research following the Lake Clifton Fire confirmed several significant challenges for fire and emergency services agencies and local governments in their community bushfire safety endeavours:

1. How to transform residents’ theoretical knowledge of possible bushfire threat into concrete household-appropriate bushfire survival plans and preparation?
2. How to raise householder awareness that severe bushfires can occur on days that have not been declared days of Total Fire Ban?
3. How to counter a tendency for some householders to ‘wait and see’ on receipt of a bushfire warning?
4. How to prevent the introduction of new bushfire information and warning communications technologies from eroding householder vigilance and self-reliance?

These points are discussed fully in the main report.

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