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TOPICS IN THIS EDITION | COMMUNITY SAFETY | RISK

SUMMARY

After a major bushfire impacted communities less than two kilometres from Adelaide's suburban edge in January 2015, the South Australian Country Fire Service (CFS) commissioned this research to explore three key questions: what factors affected residents' planning, preparation and actions on the day; the influence of CFS Community Fire Safe groups on bushfire safety; and the effectiveness of information and warnings for people living in the rural/urban interface. The approach followed studies conducted after other major bushfires. The findings were similar, however they provided some new insights, including that although the majority of people felt physically prepared for a fire, only half felt emotionally prepared for the impacts of the fire and its aftermath. Just over one quarter of respondents had a written bushfire survival plan (a strong result compared with the average seen in previous studies of five percent) and nearly 90% had had a discussion about what to do in the event of a bushfire. Being part of a Community Fire Safe group had a positive impact on both planning and preparation. This project showed that the collective learnings from other post-fire studies and the actions being taken by CFS to implement these learnings are being translated into actions in the community.

ABOUT THIS PROJECT

This research was conducted for the CFS by the Bushfire and Natural Hazards CRC through the South Australian-based Appleton Institute of CQUniversity. The CFS aims to use the findings to better support communities in preparing for bushfire and understanding its consequences. The study delivers valuable knowledge on key issues of emotional preparedness, Community Fire Safe groups, and messaging for those living in the rural/urban interface.

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SAMPSON FLAT COMMUNITY BUSHFIRE EXPERIENCES



▲ Above: COMMUNITY MEMBERS AND CFS PERSONNEL WATCH THE SAMPSON FLAT FIRE. PHOTO: ANGRY PLANET.

CONTEXT

The research into the 2015 Sampson Flat bushfire in the northern Adelaide Hills provides a valuable insight into the community and organisational challenges that may arise in other rural/urban interface fires. The research draws on the community experiences of this fire to provide a greater understanding of how to meet these challenges, focusing particularly on three issues: 1) planning, preparation and action; 2) CFS Community Fire Safe groups; and 3) information and warnings in the rural/urban interface.

BACKGROUND

The Sampson Flat bushfire started on 2 January 2015, a day of forecast 'catastrophic' fire conditions in the Adelaide Hills. The ignition point was six km from the suburban edge, and 30 km north east of the Adelaide CBD. The fire burnt approximately 12,500 hectares of shrubland, forest and grassland, destroying

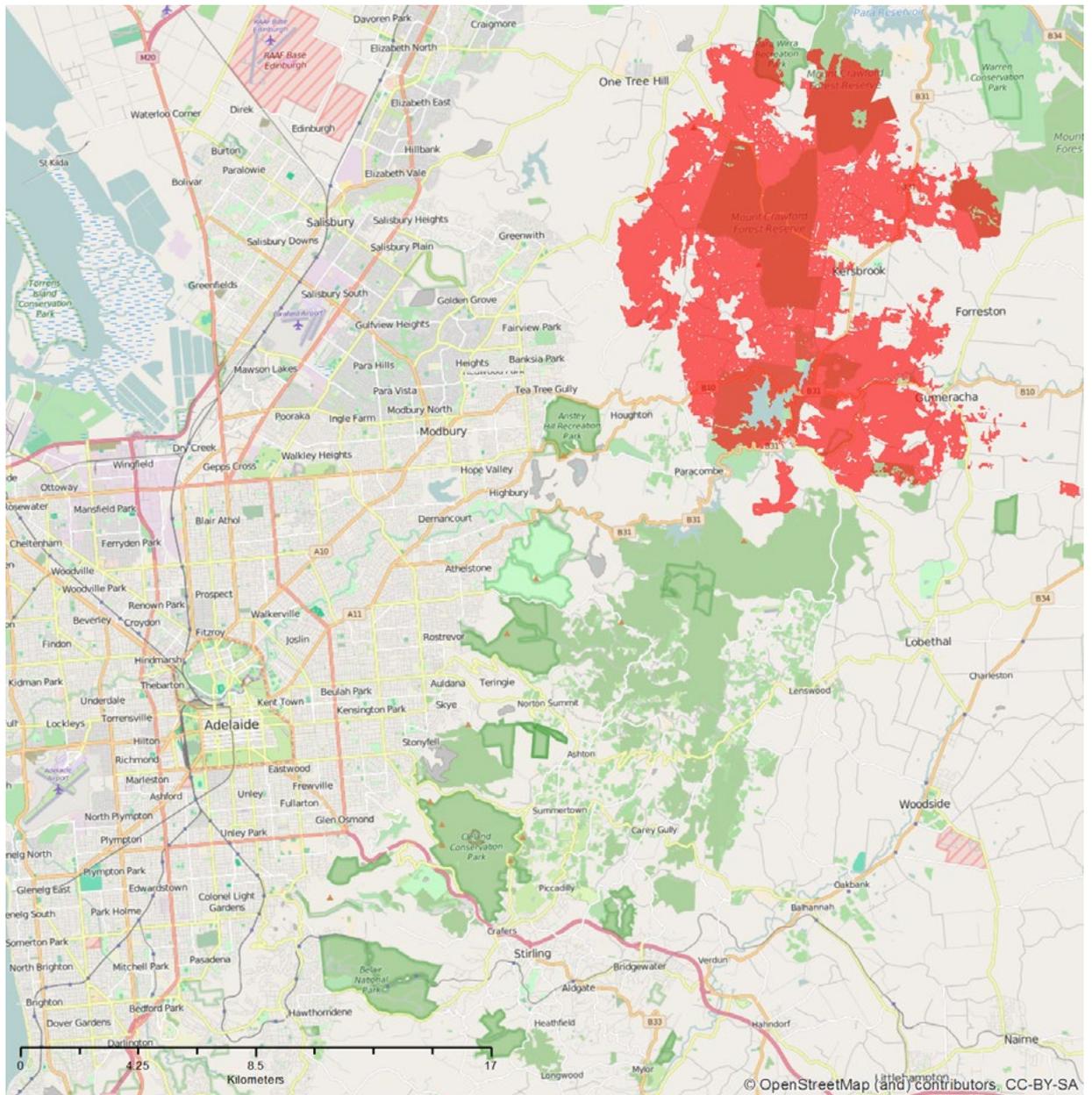
24 homes, 146 other structures and five businesses. The fire was declared contained after six days on 7 January. While there was no loss of human life, 142 people (mostly firefighters) were injured and there were significant losses of livestock and pets.

CRC RESEARCH

The research built on previous similar studies and used both qualitative and quantitative methodology. From 30 June until 31 August 2015, 543 people in the fire-affected area answered an online survey or a telephone survey about their bushfire experiences, and 25 people participated in in-depth interviews.

The surveys and interviews collected information around general demographics, awareness of and concern about bushfires, planning and preparation, people's responses on the day of the fire, and their connections with their community. Participants who were members of

▶ **Right:** THE AREA BURNT BY THE SAMPSON FLAT FIRE IS SHOWN IN RED. THIS MAP SHOWS THE PROXIMITY OF THE FIRE TO SUBURBAN ADELAIDE, WITH THE FIRE COMING WITHIN TWO KILOMETRES OF THE SUBURBAN EDGE. PHOTO: CFS



Community Fire Safe groups also answered questions about changes in key aspects of bushfire safety since becoming a member. Participants living in the rural/urban interface completed questions about the information they accessed and the warning messages they received.

RESEARCH OUTCOMES

Planning and preparedness

While the majority of residents (88.3%) who participated in the study reported having a discussion about what to do in the event of a bushfire, only a quarter of residents had a written bushfire survival plan (25.5%), and/or practiced their plan (23.4%). This is positive in comparison to the national average of 5% in previous post-bushfire studies (McLennan *et al.* 2015). However, two thirds of people had no plan or had

DEFINITION: STANDARD RESIDENTIAL BLOCK

A block of land in a township or larger urban centre which is generally less than 2000 square metres in size.

made plans that could potentially expose them to late evacuation. That is, 17.9% of residents planned to wait and see how bad the fire was before leaving, or planned to stay but leave with the fire front, while 16.9% reported either not knowing what their bushfire plan was (12%) or not having a plan (4.9%). People living on standard residential blocks (see breakout box above) were less likely than those living rurally to have a plan – 67.9% of those who indicated that they did not have a plan were living on

a standard residential block, and only 31.9% of those had a clear mental plan.

Reflecting these low levels of planning, the research found that people were more likely to prepare for a bushfire than to plan for a bushfire. They were also more likely to undertake lower cost preparations (e.g. buying a hose) than higher cost ones (e.g. installing a sprinkler system). This is consistent with previous CRC research following seven other major bushfires across Australia since 2009 (McLennan *et al.* 2015). This previous research linked a low-cost preference bias with people over-estimating their bushfire preparedness.

However, concern about bushfires increased the likelihood of a person writing and practicing a plan, and also of undertaking higher-cost but more effective bushfire preparations (i.e. installing

sprinklers, having an independent water source for bushfire protection, having a firefighting hose and pump). This indicates that awareness-raising continues to be an important focus for motivating people in at risk areas who have undertaken limited planning and preparation. This is particularly so for those living in the rural/urban interface, where this study shows levels of concern about bushfires were lower than those living rurally.

Physical and emotional preparedness

The research findings also highlighted a significant gap in preparation – an important new insight from these studies. Although the majority of people (75%) felt physically prepared (i.e. they had readied their property and their belongings), only half of all participants felt emotionally prepared (i.e. for the short-term effects of anxiety and fear, and the long-term effects of sadness and anger), as shown in the graph on the right. This was the case for members of Community Fire Safe groups as well, who also indicated lower levels of emotional preparedness. Interviews showed these strong emotions, particularly anxiety and fear, were a factor in people changing their plans at the last minute.

Men were more likely to feel emotionally prepared, although women were as likely to feel unprepared as prepared. One factor that increased emotional preparedness was prior experience of bushfires. Although not everyone can have prior experience of bushfires, the interviews highlighted that sharing the stories and lived emotional experience of bushfires could be a useful method of increasing emotional preparedness.

Information and warnings

This aspect of the study specifically considered the awareness and understanding of bushfire warnings, and found residents' awareness of the newer classification of 'catastrophic' fire danger rating was high. However, there was confusion about the meaning of messages classified as an Emergency Warning. Those people who received official CFS warnings did not understand that the message was directing them to "shelter in place", i.e. in their home. Instead they were most likely to understand that the message was requiring them to either evacuate or prepare to evacuate. This may reflect that, prior to the bushfire, people living in the rural/urban interface were less likely to have accessed information relating to bushfire safety, and

Percentage (%) Yes/No responses for each item



▲ Above: RESIDENTS AWARENESS, ACTIONS AND PREPARATION IN THE IMMEDIATE LEAD UP TO THE FIRE.

END USER STATEMENT

The Country Fire Service worked tirelessly to contain the Sampson Flat fire of January 2015 for almost a week. Despite the fire destroying homes and livestock being lost, the fire claimed no human lives. Affecting a highly populated area, and with smoke visible from the Adelaide CBD, the fire generated much interest from the media and people living in rural/urban areas.

Public information has become as important as firefighting since the devastating 2009 Victorian bushfires. CFS is dedicated to educating the public in how to prepare for bushfire through its Community Fire Safe groups and other engagement activities.

This research reflects how physically well prepared some of the Adelaide Hills community were before this incident. The residents who had prepared their properties should be congratulated on following the advice provided to them by CFS Community Engagement Officers and local brigades.

Despite the bushfire impact on 12,569 hectares of public and private lands with losses including 24 homes, 146 other structures, five businesses and much livestock and fencing, no lives were lost. We believe this is due to the bushfire safety information CFS has delivered to the community over the past decade.

However, it also shows that many in the community were not emotionally prepared, therefore CFS will look at ways to incorporate these learnings into future community engagement activities.

The research shows the preparedness of community members living in rural/urban areas was not as high as those in the more rural areas, which did not come as a surprise to CFS. However, we will continue to educate this community in the future.

This research is an integral part of the CFS's learning process; we need to understand how our communities react to a bushfire event and these lessons will shape the future of CFS's ongoing engagement with our communities, before, during and after bushfire.

Thank you to all community members who were part of this vital research.

– **Greg Nettleton, Chief Officer, SA Country Fire Service.**

were therefore less familiar with emergency messaging.

The majority of people were happy with the information that they received during the fire. However, for those who were leaving, many would have liked more details about where to evacuate to, particularly where to evacuate with pets. For those who stayed and defended, more detailed and timely information about the fire's direction and speed was requested.

Community Fire Safe groups

While part of the study was aimed at understanding the contribution of Community Fire Safe groups in the experience of the bushfire, the response rate from Community Fire Safe group members to the research was unfortunately low. Although it is not possible to make generalised conclusions from a small quantitative data set, when combined with interview data from nine different groups,

the study provides useful insights on how groups function.

In relation to the people represented in the research, the program had a positive impact on bushfire safety. Group members reported that since joining a group they were more likely to have a bushfire plan, undertake property preparations, and alert their neighbours to fires. Group members were 6.7 times more likely to develop a plan since becoming a member. They were also three times more likely to feel motivated to prepare their property. However, being a member of a group did not increase the likelihood of people undertaking higher-cost preparations. Ninety percent of group members stayed in contact with their group during the fire.

The online survey of Community Fire Safe groups indicated almost all respondents (96.7%), were satisfied with the outcomes of their group, however most rated their group's motivation and ability to work together as moderate. This latter finding is consistent with interviewee comments, which suggested that individual and situational factors such as the need for privacy, time constraints, friendships and disagreements, and different attitudes towards fire risk, made it difficult to organise group meetings and sometimes led to breaks in phone trees.

For the nine groups that participated in the interviews, the leadership style of their coordinator made a difference in the group's outcomes. Coordinators that actively drove information dissemination, meetings and activities in the neighbourhood regardless of response were most effective at overcoming the challenges of privacy, time, disagreements and attitudes. This study showed coordinators with this approach adapted communication methods to include one-on-one meetings, actively recruited new people into the group, focused on the positive and demonstrated an ongoing commitment to bushfire safety.

CONCLUSION

In line with previous CRC research on major Australian bushfires (e.g. McLennan *et al.* 2015; Trigg *et al.* 2015), this study found that although people may discuss what to do in a bushfire, far fewer plan for a bushfire, and



▲ **Above:** THE SAMPSON FLAT FIRE AFFECTED THE POPULAR ADELAIDE HILLS AREA, ALONG WITH THE URBAN/RURAL FRINGE OF ADELAIDE. PHOTO: CHRIS BASTIAN, CFS

a significant proportion continue to plan to 'wait and see' when a bushfire threatens, before deciding what to do. Those living in the rural/urban interface were less likely than those in rural areas to know what to do in a bushfire, or to plan and prepare their property. This tendency was countered by high concern about bushfires, and by being a member of a Community Fire Safe group. However, one aspect of preparation, that of emotional preparedness, was low, even for those who are members of Community Fire Safe groups. This research suggests that awareness-raising of bushfire risk remains a key focus for bushfire safety campaigns, especially in the rural/urban interface. Education campaigns in the rural/urban interface could focus on de-mystifying emergency messaging, how to prepare for fires in a more urban area, and information on safe relocation with pets. Further, the positive effects of Community Fire Safe groups could be increased by providing training for group coordinators, to assist in developing adaptive and flexible skills for managing these groups. Both for those in groups, and those who were not members, increasing emotional preparedness emerged as a consistent theme throughout the research. Future research could focus on mapping the emotional landscape of bushfire experiences as a basis for developing and trialing emotional preparedness programs.

FURTHER READING

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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, practices or positions of any of the individual agencies or organisations who are stakeholders of the Bushfire and Natural Hazards CRC.

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