bnhcrc.com.au

bushfire&natural HAZARDSCRC

CAPTURING COMMUNITY EXPERIENCES IN THE 2015 SAMPSON FLAT FIRE

Report for the South Australia Country Fire Service

Dr Danielle Every, Dr Amy Reynolds, Dr Larissa Clarkson, Dr Chris Bearman, Dr Raymond Matthews, Laura Haigh and Prof Drew Dawson
The Appleton Institute, CQUniversity

CQUniversity AUSTRALIA

Government of South Australia

CFS

Version	Release history	Date
1.0	Initial release of document	02/01/2016

Australian Government
Department of Industry, Innovation and Science

Business Cooperative Research Centres Programme

Publisher:
Bushfire and Natural Hazards CRC

ISBN: 978-0-9941696-6-2

December 2015

Citation: Every, D., Reynolds, A., Clarkson, L., Bearman, C., Matthews, R., Haigh, L. and Dawson, D. (2015), Capturing community experiences in the 2015 Sampson Flat fire, report for the South Australia Country Fire Service, Bushfire and Natural Hazards CRC, Melbourne.

Cover: Community members and CFS personnel watch the Sampson Flat fire. Photo by Angry Planet.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

SA CFS STAFF

Peta O'Donohue

Oshanna Alexander

Fiona Dunstan

Tracy Grime

Penny Kazla

INTERVIEWERS

Danielle Every

Laura Haigh

Caren Siegfriedt

Chris Bearman

REVIEWERS

Lyndsey Wright

Jim McLennan

Thanks to the people who volunteered to be interviewed for this research, and those who took the time to complete the online or telephone surveys. Your contribution was invaluable.

EXECUTIVE SUMMARY

The Sampson Flat fire in January 2015 was the most destructive fire in the Adelaide Hills for more than 30 years, burning 12,569 hectares of public and private lands with losses including 24 homes, 146 other structures, 5 businesses and much livestock and fencing.

Following this fire, the CFS commissioned CQUniversity through the BNH CRC to undertake research on the community's bushfire experience focusing on bushfire safety, the CFS Community Fire Safe program and information and warnings.

The research used both **quantitative data** from online and CATI telephone surveys, and **qualitative data** from face-to-face or telephone interviews. Participants from fire affected and fire threatened areas[1] were recruited by the CFS through their electronic and community networks.

The research identified a number of **positive findings** in terms of messaging, bushfire awareness and safety, which are outlined below.

For residents affected by the Sampson Flat fire these positive findings were:

1. ***Concern about bushfires prior to the Sampson Flat fire was high at eighty-five per cent***, with the majority of people being highly or very highly concerned. Being highly concerned about bushfires was associated with both higher knowledge of bushfire safety and motivation to prepare for a bushfire. It was also associated with an increased likelihood to write and practice a plan, and with undertaking more costly but more effective bushfire preparations (installing sprinklers, an independent water source, fire hose and pump). Although the data doesn't allow us to make claims about causality, this suggests that campaigns to raise awareness of bushfires have been a contributing factor in this increase in knowledge and motivation.
2. ***The majority of residents reported having a discussion about what to do in the event of a bushfire*** and discussed either staying to defend or leaving early.
3. A quarter of residents reported preparing a written bushfire survival plan (25.5%), and/or practising/rehearsing their bushfire survival plan (23.4%). This compares positively with the national average of 6% of people who reported preparing written plans in previous post-bushfire interview studies (see McLennan et al. 2015).

[1] Including: One Tree Hill, Vista and Paracombe, as well as Gould Creek, Greenwith, Golden Grove (part), Salisbury Heights (part), Yatala Vale, Fairview Park, Banksia Park, Tea Tree Gully, Upper and Lower Hermitage, Houghton, and Inglewood.

4. In pre-fire preparations, ***a significant majority of people cleaned their gutters and removed fire hazard materials and vegetation from around their home***. Campaigns and materials promoting this behaviour are likely to have contributed to these preparations.
5. People's ***awareness of the new classification of 'catastrophic' fire day was high.*** This suggests that campaigns in relation to these warnings have contributed to this awareness.
6. Some community members are working together to assist each other. On the day of the fire, ***over a third (38.3%) of residents assisted other community members and 23.4% assisted others to prepare their properties***.

For Community Fire Safe groups in Region 2:

7. ***The Groups had positive impacts on bushfire safety.*** Group members report that since joining a group they are more likely to a) have a bushfire plan, b) undertake those property preparations which were financially and situationally possible and c) alert neighbours of fires. Of note, given the ongoing issue of people not planning for a bushfire noted below, is that ***group members were 6.7 times more likely to develop a plan since becoming a member*** of a Fire Safe group than prior to being a member.
8. The outcomes of the group and its influences on communication were also positive. The majority of people (96.7%) were satisfied with the outcomes of their groups and 90% of group members stayed in contact with their group during the fire.

For residents of peri-urban areas affected by the fire:

9. Importantly, ***the CFS is perceived as a trusted source of information about bushfires,*** including by those living in residential areas.

The research also identified **some challenges for promoting maximum levels of bushfire awareness and safety**.

1. ***Two thirds of people had no plan or had made plans that could potentially expose them to late evacuation.*** However, the proportion of the population in these categories seems to remain consistent across time and location (see McLennan et al. 2015 and Trigg et al. 2014). This consistency suggests that there may be a relatively steady cohort of people who do not plan or plan to wait and see, despite ongoing awareness and safety campaigns.
2. ***People were more likely to prepare for a bushfire than to plan for a bushfire.*** This tendency was more likely for people who also rated themselves highly on their understanding and knowledge of bushfire safety and risk. In general, people were also ***more likely to undertake lower cost preparations*** (e.g. buying a hose) than higher cost ones (e.g. installing a sprinkler system). Of concern, is that this

low-cost preference bias has been linked, in previous post-fire research (McLennan et al. 2015), to people overestimating their bushfire preparedness.

3. Importantly, the research highlights a lack of emotional preparedness. Although a majority of people reported feeling physically prepared (i.e. they had readied their property and their belongings), ***people were much less likely to feel emotionally prepared*** (i.e. for the short term effects of anxiety and fear, and the long term effects of sadness and anger). Of concern is that these ***strong emotions, particularly anxiety and fear, were a factor in people changing their plans at the last minute*** – as the fire approached and the fear increased, some people left although they had planned to stay and defend, but then later attempted to return to their properties.

4. Although Community Fire Safe groups had positive impacts, for them to function at their maximum level of effectiveness, ***coordinators need to be pro-active and energetic in communicating with members, and adaptable and persistent in the face of low turn-outs at meetings.*** Where these attributes and skills are absent, groups may not operate at their optimal level.

5. Although it was thought that community closeness may be of benefit to more vulnerable community members, the data suggests this is not the case during a fire event. Whilst almost half of the respondents identified other vulnerable people in the community less than half of these assisted vulnerable people. ***Community closeness does not increase assistance for vulnerable people in the community.***

6. As expected, ***people living in peri-urban residential situations were less likely to be concerned about bushfires, to have a plan or prepare their property or their households*** than those living on rural blocks. 62.6% of respondents on standard residential blocks reported that they had not sought bushfire information prior to the Sampson Flat fire. This low level of information seeking reflects that nearly half of participants (45%: 140 of 309) reported only being slightly concerned or not at all concerned about bushfire prior to the Sampson Flat fire.

7. ***There was general misunderstanding of the emergency warning message to 'shelter in place'***. This was primarily understood as a message to evacuate.

Potential responses to these challenges suggested by the findings.

1. Given that people were more likely to prepare than to plan, and that two thirds of people had a plan which exposed them to the dangers of late evacuation, there is a need for continuing campaigns in this space. One factor which made people more likely to undertake some aspects of planning and preparation was concern about bushfires. ***Raising awareness of bushfire risk*** thus continues to be an important way to encourage planning and preparation.
2. Given that people were less likely to feel emotionally prepared, it may be useful to assign greater importance to this in both general campaigns and within Community Fire Safe groups. The findings suggest that one way of doing this is by ***sharing stories of lived experience or facilitating a simulated lived experience***.
3. Given that the coordinator qualities of persistence and adaptability were important in the optimal function of Fire Safe groups, it would be useful to include these in the recruitment process and foster them through ***a professional development process for coordinators***.
4. Given that assisting vulnerable people is not addressed through community closeness other options may need to be explored here. The data demonstrates that those who assist others are more likely to be people who include helping others as part of their value system, have previously helped another person, have particular skills and interests and are able to use these, or are placed in a position to help because of the circumstances of the fire. This suggests that initiatives to assist vulnerable people may perhaps be better directed at ***supporting individual planning and preparation, relationships between vulnerable people and interested community members***.
5. Given the low levels of concern about bushfires for people living in peri-urban areas and the lack of understanding of the 'take shelter' ***message awareness campaigns focused on those living in residential areas could be beneficial***. The CFS was considered to be a trusted source of information and campaigns are likely to be well-received.

END USER STATEMENT

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

The SA 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 local media and people living in peri-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, 5 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 peri-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 SA Country Fire Service'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

INTRODUCTION

Following the Sampson Flat fire in January 2015, the CFS commissioned CQUniversity Adelaide through the BNH CRC to undertake research on the community's bushfire experience. This is part of the CFS's ongoing commitment to **developing evidence-based bushfire safety initiatives.**

The research presented in this report specifically targeted **three key issues** for CFS bushfire safety initiatives.

1. Identifying from the Sampson Flat fire the potential implications for similar South Australian communities including the Adelaide Hills region as a whole.

2. Evaluating the impacts of the Community Fire Safe group program on key aspects of bushfire safety behavior.

3. Assessing the suitability of information and messaging for people living in the peri-urban fringe.

These key issues provided three overarching questions (below) that oriented the research and formed the basis of three separate but linked projects. The overarching questions were operationalised into a large number of measureable questions within each of the projects.

1. What facilitated or prevented people making safe decisions before and during the Sampson Flat bushfire? (Addressed in Project 1 – Residents Affected by the Sampson Flat Fire)

2. Has the SA CFS Community Engagement program, Community Fire Safe, had a measurable effect on improving community safety, survival, recovery and resilience in the Sampson Flat fire area? (Addressed in Project 2 – Community Fire Safe Groups in Region 2)

3. Were the information and warnings provided to communities in the peri-urban fringe threatened by the Sampson Flat fire considered (by those receiving those messages) sufficient to help individuals and groups make informed decisions about their safety. (Addressed in Project 3 – Residents of Peri-Urban Fire-Affected Areas)

RESEARCH IMPLEMENTATION

The research included in this report was originally inspired by the Community Engagement Team's desire to evaluate the Community Fire Safe programs. In particular, they wanted to know: did being a member of this group increase people's fire safety before, during and after a fire? The project was initially designed to undertake this evaluation by comparing members and non-members on a series of measures of bushfire safety.

A second project, consulting people in the peri-urban fringes in relation to bushfire safety information and messaging, was also proposed. This second project ran as planned, however, the first did not.

Despite considerable efforts at recruitment through multiple means, members of the Community Fire Safe groups in Region 2 (the region affected by the fire) did not participate in the research. There are three potential explanations for this which are suggested by the data.

The first is that the groups came together after the fire, debriefing their experiences and receiving considerable support, and thus were less likely to feel concerned about sharing their experiences a part of research. That is, their experience overall was more positive, and thus an emotional impetus to be part of research in order to share their concerns was not there. Or, alternatively, having spoken about the fire at length, they did not want to speak of the fire experience further.

A second possible explanation is that the definition of groups held by members and that held by the CFS is different. That is, people may see themselves as 'having gone to a couple of meetings' or 'being part of a fire phone tree' rather than being a 'member of a Community Fire Safe group'. So, recruitment based on group membership simply may not have fit with people's own conceptions of whether or not they were a member.

A third is the challenge for community leaders, including CFS Community Engagement Officers, to experience a fire with their community, and for themselves to be fire-affected, and to then return to a role in which they are promoting research participation. That is, a role where they are asking for more from a community already giving so much to the recovery efforts.

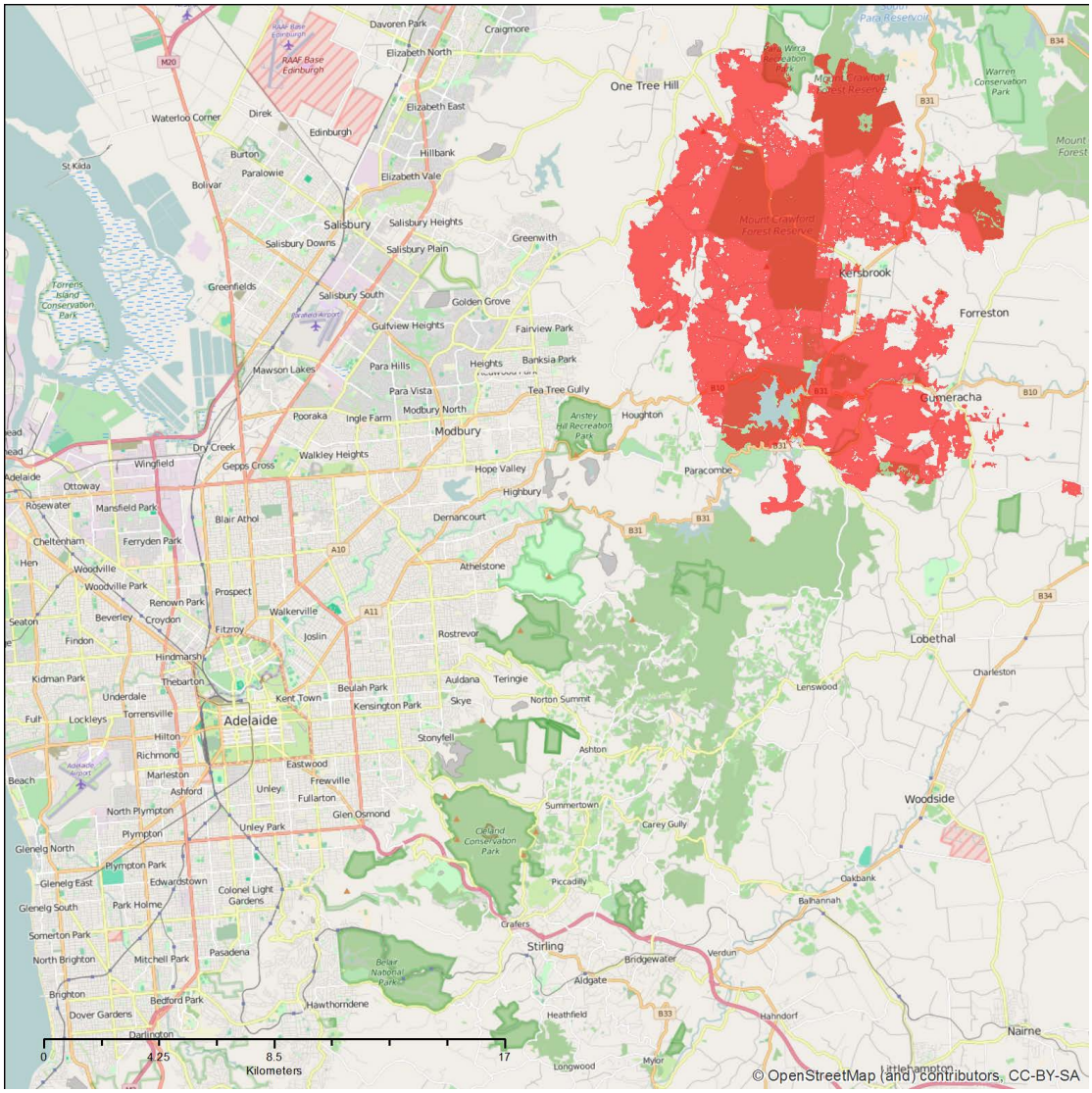
Given the difficulties in recruitment, the original research plan needed to be revised, and the data gathered for the initial evaluation project was analysed separately as two projects – one with non-member residents, and one with member residents. The second project with members is primarily qualitative, as there was little quantitative data available to undertake statistical analysis beyond descriptive statistics.

The third project, with people in peri-urban areas, continued as planned.

Each project's methods, findings and conclusions are reported separately below, but links and comparisons between members and non-members are made wherever possible.

FIRE CONTEXT

The Sampson Flat fire started during a period of extreme heat just after New Year in 2015. Sampson Flat is a locality in the Adelaide Hills 30 km northeast of Adelaide and 3 km south of One Tree Hill about 6 km from the peri-urban interface (See Map 1) and characterised by undulating pasture and scrubland.



Map 1.

Location of Sampson Flat fire in the Adelaide Hills, South Australia

The surrounding area supports a number of small townships, and a wide range of land uses, including agriculture, rural and bush living, viticulture, horticulture, tourism and plantation forestry. There are a number of reserves in the area, including Parra Wirra Recreation Park, Mount Gawler Native Forest reserve and the catchment area for Millbrook Reservoir. Topography and vegetation is variable from gentle undulating grasslands to steep forested terrain. To the west, medium density residential areas on the foothills lead to the high density residential suburbs in Adelaide plains.

Most of this hills area is rated as *high* bushfire risk under the state planning regulations, where new developments have been subject to bushfire protection standards since 1992. CFS community education programs were introduced in this area in 1999 to increase community bushfire preparedness and resourcing for these activities has increased in recent years focusing on the establishment and maintenance of Community Fire Safe groups. As of January 2015 there were 42 registered Community Fire Safe groups (totalling approximately 500 people) in the Sampson Flat area. Of these the SA CFS personnel estimate around three quarters were active at January 2015 (Penny Kazla, *pers.comm*.).

On Thursday 1st January 2015, the fire danger rating was declared *Catastrophic* for the Mount Lofty Ranges Fire Ban District for the next day. On Friday 2nd January 2015 at 12:32pm, the Sampson Flat fire was first reported burning 10 ha in undulating grassland and scrub. Spot fires then started south and east of the original fire area and moved into steep and difficult to access topography. Weather conditions deteriorated throughout the afternoon with varying winds pushing the fire into multiple directions. Considering the ferocity of the fire travel, the focus was on providing asset protection and public safety information for the primacy of life. Messages were developed and issued to warn communities under threat of the need for immediate action.

Throughout Friday afternoon the fire burnt generally south/south-east through scrub and forest and with the wind shifting it then burnt in an east/north-east direction towards Kersbrook. The fire continued to burn under significant fire weather into the evening, burning north/north-west towards Gould Creek, Hermitage, Golden Grove and Greenwith in the urban fringe. By Saturday morning it pushed in a south/south-east direction towards Inglewood, Paracombe, Cudlee Creek and Prairie and then during the afternoon in an east/north-east direction towards Gumeracha, Kenton Valley and Birdwood. The fire shifted direction again to a north/north-east direction towards Kersbrook, Forreston, Mt Crawford, South Para and Humbug Scrub, burning through difficult terrain and a variety of fuels.

As weather conditions eased, the fire was classified as contained on 7th January 2015. The fire burnt approximately 12,500 ha within a perimeter of 237 km (see Map 1). Twenty-four homes, approximately 140 other structures and 5 businesses were destroyed. While there was no loss of human life, 142 people (mostly fire fighters) were injured (nil long-term) and 960 sheep, 30 cattle, 2 horses and 10 dogs/cats died as the result of this fire.

PROJECT 1: BUSHFIRE SAFETY FOR RESIDENTS AFFECTED BY THE SAMPSON FLAT BUSHFIRE

Although the Sampson Flat fire was restricted to the northern part of the Adelaide Hills, the demographics of people in this area are similar to those of the population of the greater Adelaide Hills area.

Thus, understanding the bushfire safety of people affected by the Sampson Flat bushfire can be used to inform CFS interventions and planning across this larger site.

Given the potential wider applicability of these experiences, this project sought to identify key learnings in relation to planning, preparation, bushfire action, community networks and resilience, which may useful across the Hills.

Project 1 asks:

> What facilitated or prevented people making bushfire safe decisions before and during the Sampson Flat fire?

Using quantitative and qualitative data from the online survey and interviews with those residents affected by the fire[2], the project evaluates the potential impacts on bushfire safe decisions of:

- previous bushfire experience
- awareness of and concern about bushfires
- understanding and knowledge of bushfire risk and safety
- vulnerabilities
- community networks.

METHODS (PROJECT 1)

Data collection

Quantitative and qualitative data was collected through an online survey and face-to-face or telephone interviews. A copy of this survey and these interview questions are attached as Appendix A.

Participants for the online survey were recruited by the CFS through their website and Facebook page and printed posters and fliers. The online survey was open from the 30th June 2015 until the 30th July 2015.

Overall, 207 people responded. Of these, 10 people began the survey but did not provide answers to any questions. These participants were removed from the analysis. Four participants were under the age of 18, and, for ethical

[2] This data does not include that from members of Community Fire Safe Groups. The data from the surveys and interviews with this group forms Project 2 in the next section.

reasons, these participants were also removed from the analysis. This left 193 responses. However, not all participants responded to all questions. The number of people who responded to each question is indicated throughout the report.

Participants for the interviews were recruited by the CFS through the post-incident Building Impact Assessment Survey, which had identified people who were willing to participate in further research, and through printed fliers, their website and Facebook page. Further, participants were also recruited through the online survey which included contact details for the Chief Investigator. The interviews, which were a semi-structured conversation about people's experience in the Sampson Flat fire, were conducted between 13th July 2015 and 31st August 2015. These were either face-to-face in people's homes or conducted over the telephone, and ranged from one to two hours.

A total of 15 people were interviewed.

Data analysis

The quantitative data from the online survey was analysed using chi-squares (χ^2)[3]. Chi-square analyses are used when data is categorical, that is, a person either falls into one category (yes I did enact my plan) or another (no I did not). Chi-square analyses test for differences between these two categories and other variables (e.g. if you were in the category of 'yes I did enact my plan' were you also a male or female). Statistics are reported in percentages and/or in odds ratios (i.e. how likely is someone who falls in this category of enacting their plan to have also been male). These tests for associations between different variables, however, were only conducted where there are more than 5 responses in a category. However, this did not affect the reporting of results – i.e. there were few instances where this condition of cases (<5) was violated and thus there were no important questions which were not able to be answered because of this.

The qualitative interview data was analysed to provide answers to questions raised in the quantitative analysis. For example, whilst there were no statistically significant associations that could explain who helped others and why in the quantitative data, the qualitative data could give further insight into why people assisted others. The qualitative data was also used to provide more detailed insight into key issues identified through the quantitative data, such as low levels of emotional preparedness.

[3] A chi-square χ^2 reports the association between the two variables (i.e. $\chi^2 = 0.11$) and whether this difference was significantly different (i.e. $p<0.05$). The p value (statistical probability) indicates whether the difference is statistically significant, meaning that the findings are unlikely to have occurred by chance.

FINDINGS (PROJECT 1)

The findings of the Sampson Flat bushfire surveys and interviews from a resident perspective are presented below. For the purpose of this report, we have broken the data into five sections.

1. Demographics of the sample
2. Bushfire planning and preparation prior to the Sampson Flat fire
3. Actions on the day of the Sampson Flat fire
4. Neighbourhood and community networks
5. Resilience

Demographics

In total, 164 residents answered the question on gender. The majority of the sample was female (67.7%).

One hundred and sixty-three (163) residents gave their age. The average age of the sample (Mean (±SD)) was 45.8±15.3 years. The youngest participants were 18 years old and the eldest was 87 years.

This sample is somewhat skewed towards women – across the Adelaide Hills population there is an even distribution of men and women. The average age of the sample reflects the broader demographics of the Hills, in that the largest population groups in the Adelaide Hills are 45 to 50 and 50 to 54 year olds (Adelaide Hills Community Profile 2011).

HOUSEHOLDS AND PROPERTIES

Most respondents live in a household with two or more adults and dependent children (37.8%). The majority of residents lived either in a house on a larger lifestyle block (26.8%) or a house on a bush block (24.4%). Residents living on standard sized residential blocks made up 19.5% of the sample (19.5%). This distribution is similar to that of the Adelaide Hills as a whole (Adelaide Hills Community Profile, 2011). Residents (n=162) reported having occupied their property between 6 months and 49 years, with an average duration (Mean + SD) of 13.4 (±11.0) years.

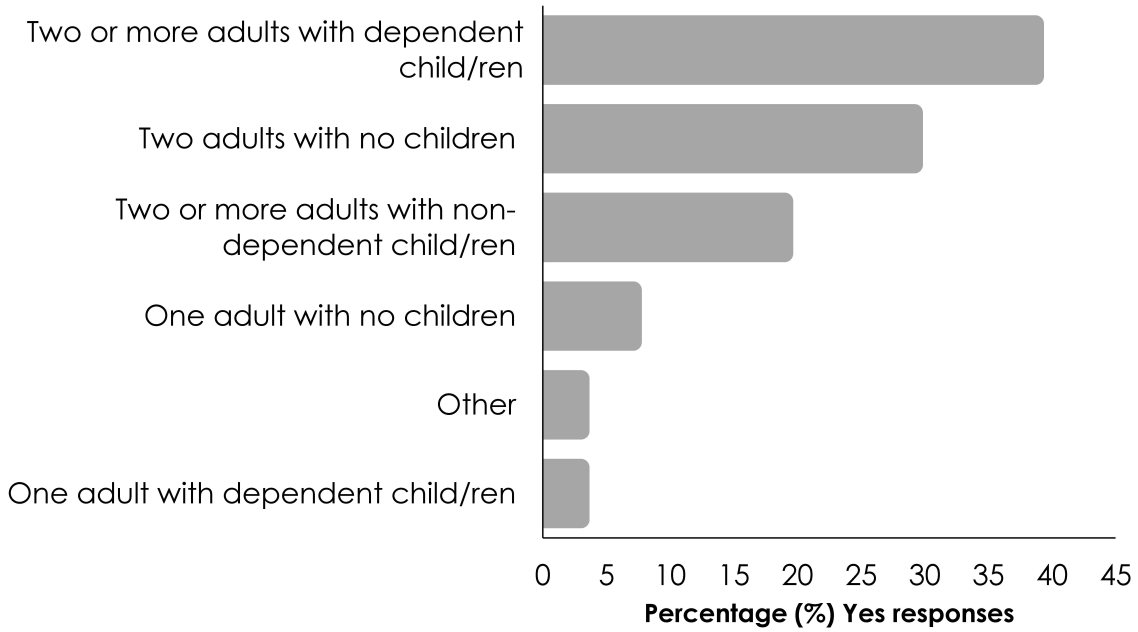


Figure 1.

Resident responses to household demographics

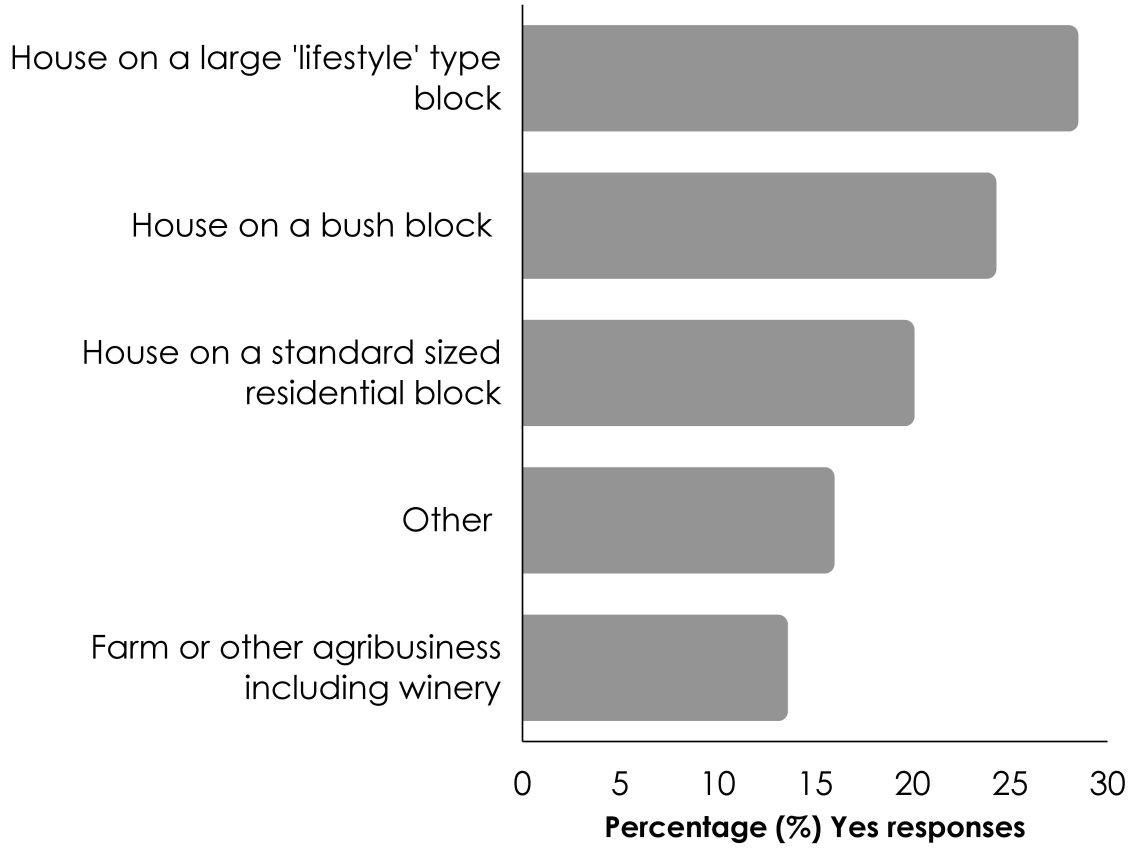


Figure 2.

Property types reported by residents in the affected Sampson Flat fire region

HOUSEHOLD ON THE DAY OF THE FIRE

The majority of people at home on the day of the fire were adults between 19 and 65 (88.8%). Eighty four per cent (84%) of the sampled households included pets and/or livestock and half (50.9%) included children under 18. Twenty-eight households included people who were frail or experiencing a chronic illness, physical or psychiatric disability.

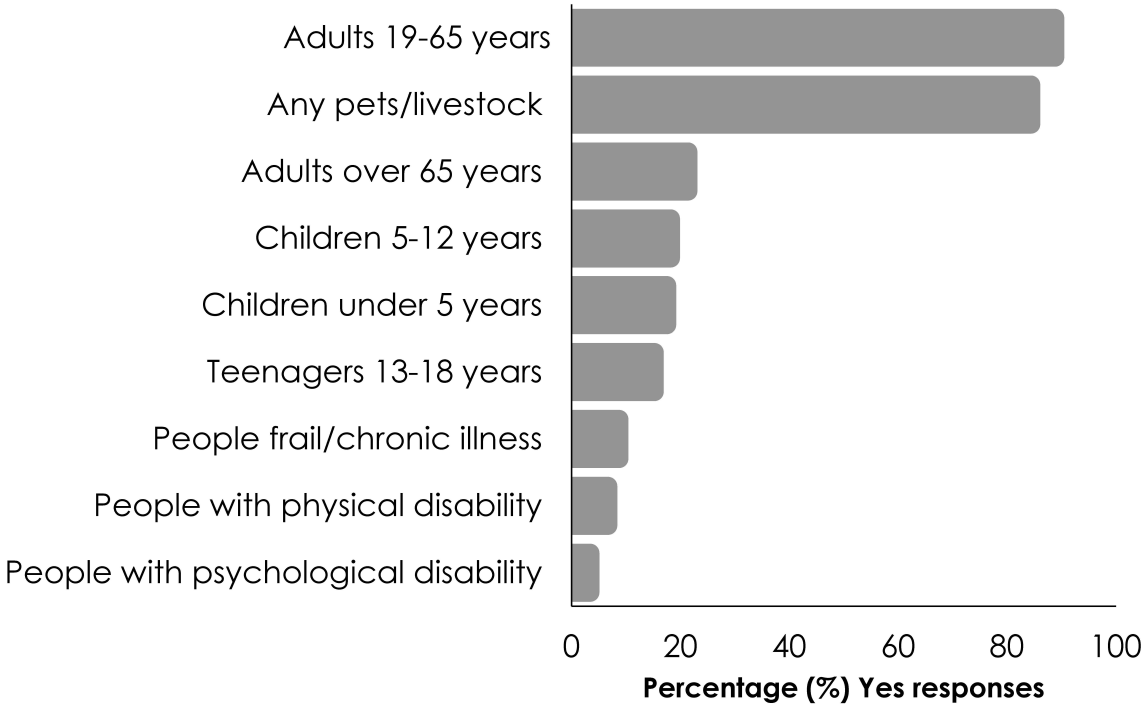


Figure 3.

Residents' responses to who was home on the day of the fire

The findings indicate that a reasonable percentage of households in the community have members with special needs, which potentially increases the vulnerability of these households.

Bushfire planning and preparation prior to the Sampson Flat fires

The survey and interviews gathered information on people's experience and concern about bushfires. They also sought information in relation to people's pre-fire knowledge and understanding of bushfire risk and safety, and the longer-term planning and preparation activities residents undertake, regardless of whether or not there is a bushfire in their area. The questions asked residents about:

- their previous experiences of bushfires
- their concern about bushfires
- their knowledge and understanding of bushfire risks and safety
- the amount of and types of planning and preparation they had undertaken.

PREVIOUS EXPERIENCE OF BUSHFIRES

Of the 193 residents who responded to this question, 45.6% reported having experience with bushfires in the past.

CONCERN ABOUT BUSHFIRES

Of the 193 residents who responded to this question, 85% reported being concerned about bushfires prior to the Sampson Flat fire. However, for 15% of the sampled population, bushfires were not a concern.

Of those who were concerned about fire, 35.9% reported moderate concerns and 45.3% were very or extremely concerned. No one reported being not at all concerned (and this was removed from the analysis and graph). Responses (n=192) to this question are shown in Figure 4.

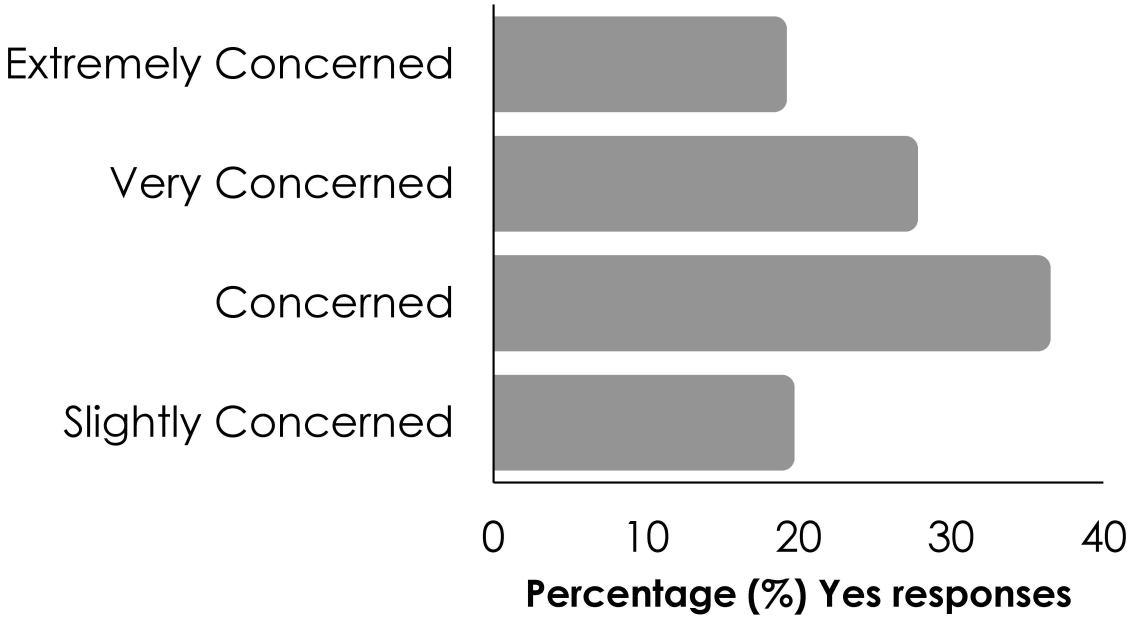


Figure 4.

Resident's self-reported level of concern about bushfires prior to the Sampson Flat fire

UNDERSTANDING OF BUSHFIRE RISK, MOTIVATION TO PREPARE, AND KNOWLEDGE OF BUSHFIRE SAFETY

Residents were asked to rate themselves and their household on their understanding of bushfire risk, their motivation to prepare their property, and their knowledge of bushfire safety. The majority of respondents rated their levels of knowledge, understanding and motivation as high or very high. These self-assessments are illustrated in Figure 5.

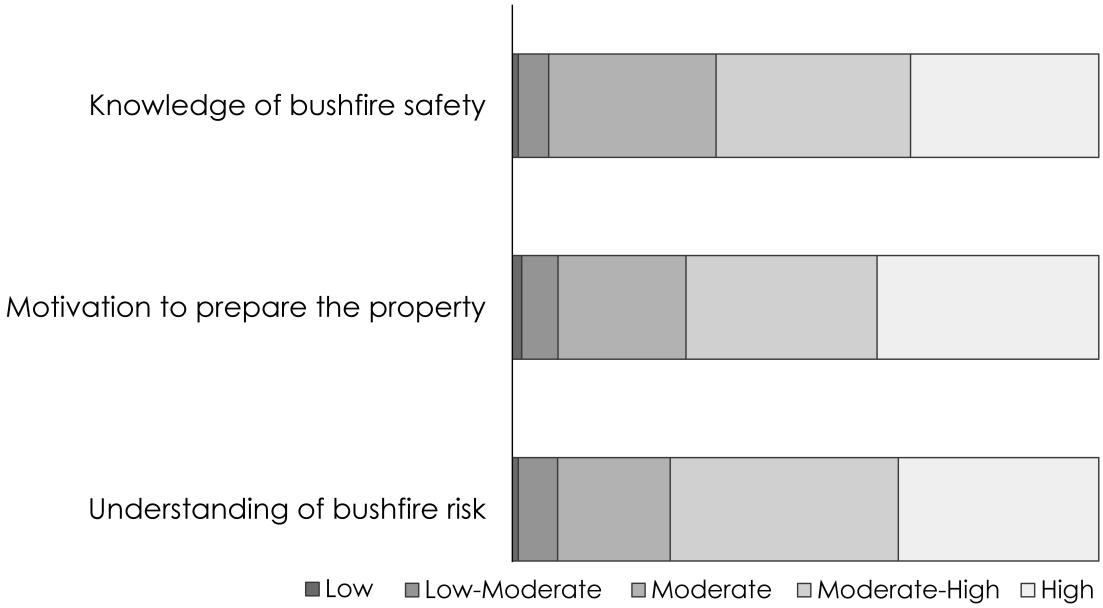


Figure 5.

Residents self-reported knowledge of bushfire safety, motivation to prepare, and understanding of bushfire risk

Prior concern about bushfires was related to both motivation and knowledge.[4] The respondents who identified as being concerned about bushfire also rated their bushfire safety knowledge more highly ($\chi^2(2)=6.03$, $p=0.046$) and had higher motivation to prepare the property ($\chi^2(2)=10.168$, $p=0.006$). However, the association between prior bushfire concern and understanding of bushfire risk was weak and not statistically significant ($\chi^2(2)=5.83$, $p=0.055$). However this may reflect the question wording – people may not have differentiated between knowledge of bushfire safety and understanding of risk.

These findings suggest that being concerned about bushfires is associated with greater knowledge of bushfire safety and motivation to prepare one's property.

PRE-FIRE ACTIVITIES: PLANNING ACTIVITIES AND PREPARATION ACTIVITIES

Residents were asked about fire-related activities prior to the Sampson Flat fire. The survey included a list of 14 actions related either to bushfire planning or to personal and property preparedness, and participants were asked to respond yes or no to each. The percentage of yes or no responses (n=188) for each action is provided in Figure 6.

[4] Low and low-moderate responses had insufficient cases for further analysis, so these categories were removed.

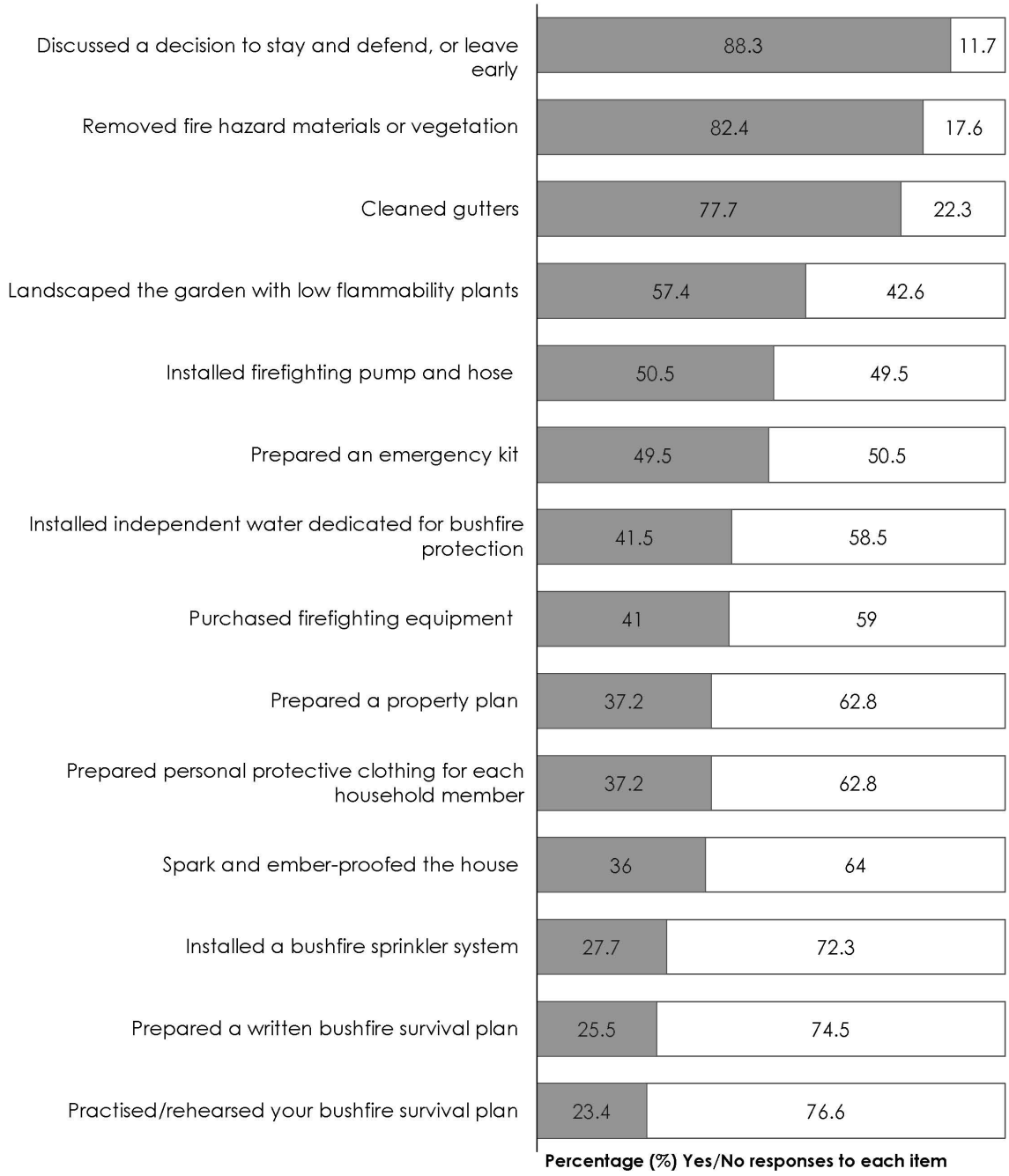


Figure 6.

Resident responses (%) regarding bushfire planning prior to the Sampson Flat fire

In relation to planning activities, the majority of residents (88.3%) reported having a discussion about either staying to defend or leaving early. A quarter of residents reported preparing a written bushfire survival plan (25.5%) and/or practising/rehearsing their bushfire survival plan (23.4%). This compared positively with the 2014 post-fire research in South Australia, where 10% reported having a written bushfire survival plan (Trigg et al, 2015) and a national review of post-fire interview studies which identified an unweighted average of 6% having a written bushfire plan (McLennan et al., 2015).

In relation to personal and property preparatory activities, people were most likely to have removed fire hazard materials or vegetation from their property (82.4%), and/or cleaned their gutters (77.7%). Half of respondents had landscaped their garden with low flammability plants (57.4%), installed a fire fighting pump and hose (50.5%), and/or prepared an emergency kit (49.5%). However, respondents were less likely to have created an independent water source (41.5%), purchase fire-fighting equipment (41%), ember-proof their house (36%) or install sprinkler systems (27.7%).

This suggests that the actions people take are more likely to be those which are a) more affordable (purchasing a hose as opposed to a sprinkler system) and b) more readily do-able (e.g. cleaning gutters as opposed to an independent water source).

This finding of a preference for low-cost preparations concurs with that of McLennan et al. (2015), who undertook a meta-analysis of seven Australian bushfire research projects. Overall, these projects found that people were more likely to adopt low-cost but potentially ineffective mitigation actions, over higher-cost but potentially more effective actions such as purchasing a rain-water tank, a diesel-powered pump or a sprinkler system. Unfortunately, this low-cost preference bias was linked in this post-fire research to people overestimating their bushfire preparedness (McLennan et al., 2015).

These findings suggest that people are more likely to take positive actions to prepare their property than to make a bushfire plan. Further, when we explore the relationship between pre-fire planning and preparatory activities and understanding and knowledge of bushfire risks and safety, a consistent theme emerged: those who indicated moderate to high understanding and knowledge of bushfire risk were more likely to undertake preparatory activities, but less likely to develop bushfire plans. This may expose people to the dangers of over-estimating their bushfire preparedness.

However, importantly, concern about bushfires mitigated this. Concern was related to both increased planning and to higher-cost preparatory activities.

We found that residents who expressed prior concern of bushfires were:

- 4.12 times more likely to have practised/rehearsed their bushfire survival plan
  ($\chi^2(1)=4.03$, $p=0.032$)
- 3.26 times more likely to have installed a bushfire sprinkler system ($\chi^2(1)=3.77$, $p=0.038$)
- 6.39 times more likely to have purchased fire fighting equipment ($\chi^2(1)=10.59$, $p=0.002$)
- 6.85 times more likely to have installed a fire fighting pump and hose ($\chi^2(1)=14.25$, $p<0.001$)
- 8.60 times more likely to have prepared personal protective clothing for each member of their household
  ($\chi^2(1)=11.08$, $p<0.001$)

than those who did not express prior concern about bushfire. Importantly, given the earlier finding that people are more likely to undertake low-cost and potentially less effective preparations, concern increased the likelihood of these higher cost but more effective preparations – specifically sprinklers and a pump and hose. It also increased the likelihood of people practicing their plan.

Thus, one of the factors that may influence the most important and effective aspects of planning and preparation is being concerned about bushfires.

Overall, these findings suggest that preparation is emphasised over planning. Further, people are less likely to engage in preparatory activities that are more costly. Importantly, however, if people are highly concerned about bushfires they are more likely to have written and practiced a bushfire plan, and to install higher cost but potentially more effective preparations.

BUSHFIRE PLANS PRIOR TO THE SAMPSON FLAT FIRE

Almost a third of residents indicated that their plan was to stay and defend their home and taking shelter as any fire passed (23.9%), to leave the area at first warning (14.7%) or relocate (2.7%). However, 17.9% of residents either planned to wait and see how bad the fire was before leaving, or planned to stay but leave with the fire front. Further, almost one fifth of residents (16.9%) reported either not knowing what their bushfire plan was (12.0%) or not having a plan (4.9%).

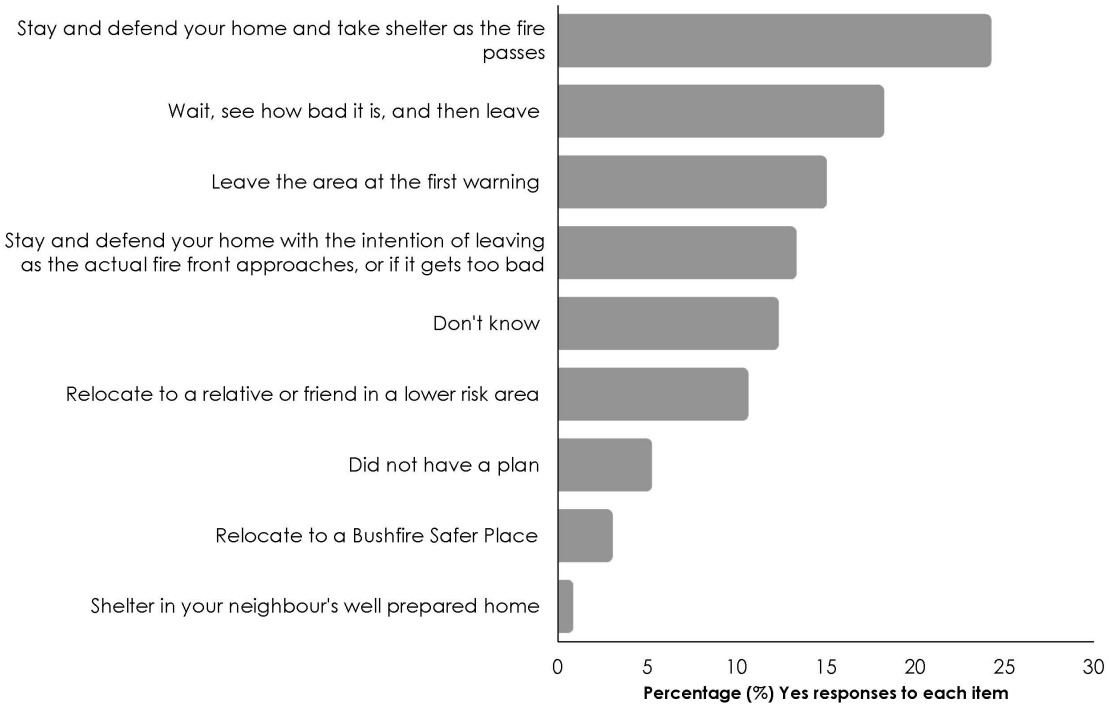


Figure 7.
Residents' bushfire plans prior to the Sampson Flat fire (%)

These figures are similar to those found in other research. Trigg et al. (2014) identified in Rockleigh, Bangor and Eden Valley after the 2014 fires that: 30% had planned to stay and defend and 24% to leave, whilst 12% would wait and see and 19% had no plan. McLennan et al. (2015) found that, across seven sites from 2010 to 2014, 16 to 19% of participants planned to wait and see or had no plan. Despite community education campaigns, there seems to be a persistent cohort of people who do not plan, or who expose themselves to danger with a plan to wait and see.

These findings suggest that approximately two thirds of people had made plans that could potentially expose them to late evacuation and the dangers of this, or were vulnerable to the dangers of not having a plan. However, the proportion of the population in these categories remains consistent with other locations. This consistency suggests that there may be a relatively steady cohort of people who do not plan or plan to wait and see, despite ongoing awareness and safety campaigns.

AWARENESS, ACTIONS AND PREPARATION IN THE IMMEDIATE LEAD UP TO THE SAMPSON FLAT FIRE

To understand people's immediate responses to the fire, residents were also asked to respond yes or no to a series of questions about the immediate lead up to the Sampson Flat fire and their preparedness for the ensuing events. Percentage responses (yes or no) are provided in Figure 8.

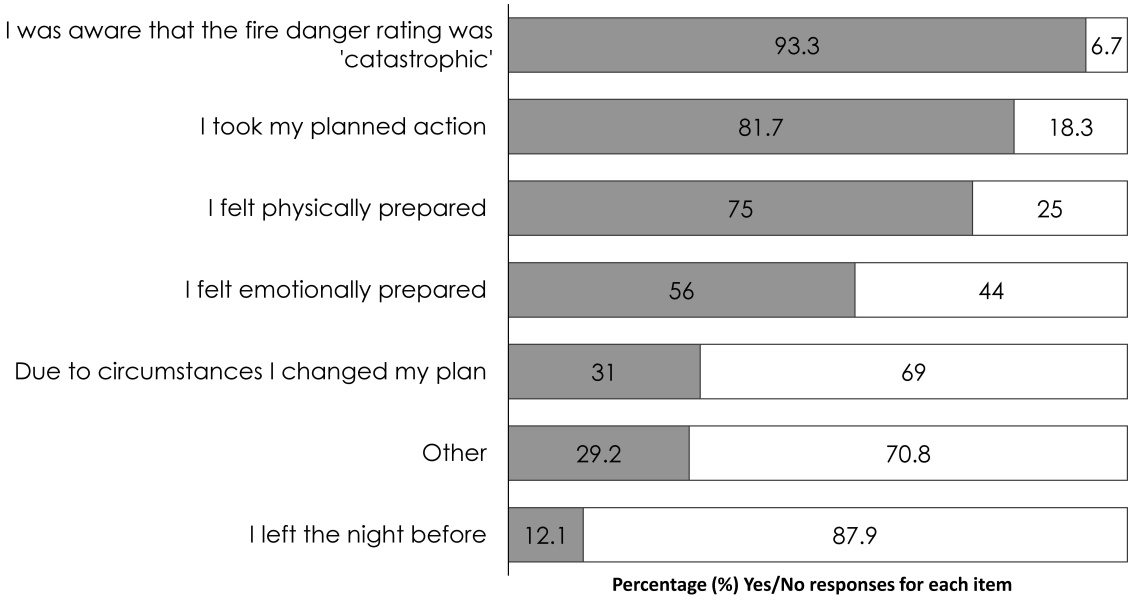


Figure 8.

Awareness, actions and preparation in the immediate lead up to the Sampson Flat fire

There was a very high level of awareness of the fire danger warning of 'catastrophic' on the day of the fire (93.3%).

Whilst over three quarters of residents (81.7%) were able to take their planned action, not everyone was able to do so, with some (31%) changing plans because of circumstances. The circumstances that led to these changes are discussed in the next section drawing on the qualitative data.

As expected, given the findings earlier in relation to preparedness activities, the majority of people felt physically prepared (75%). However far fewer (56%) felt emotionally prepared.

Physical preparedness was greater where there was a greater concern about bushfires [those who were more concerned were 9.15 times more likely to feel physically prepared ($\chi^2(1)=4.82$, p=0.038, n=165) and report greater bushfire safety knowledge ($\chi^2(2)=15.96$, p=<0.001 n=165)]. Men were 2.71 times more likely to feel physically prepared than not. No significant difference was found for women.

Emotional preparedness was greater for those who had prior experience of bushfires. Those with prior experience were 1.98 times more likely to feel emotionally prepared. Men were more likely to feel emotionally prepared than not ($\chi^2(1)=4.84$, p=0.028), though women were just as likely to feel unprepared as prepared. Those residents who had a moderate to high understanding of bushfires also were more likely to feel emotionally prepared ($\chi^2(2)=8.93$, p=0.0.012, n=165).

These findings suggest that most people are aware of fire danger warnings of 'catastrophic' and that people are enacting their plans where circumstances allow. Further, perceptions of physical preparation are high. However, emotional preparedness was a significant gap in people's fire preparations.

We looked to the interviews for insights into emotional preparedness. The interviews revealed the types of emotions people experienced during and after the fires and the triggers for these emotions. Strong emotions occurred both in the immediate aftermath of the fire, and throughout the ongoing recovery period, but these tended to be different emotions with different triggers.

The immediate aftermath

Emotions such as high levels of anxiety were prominent in the immediate aftermath. This was triggered by not knowing what had happened to property or animals. The confusion of information and misinformation during and immediately after the fire was found to be particularly stressful. For those who stayed in the fire area, memories of the fire experience, including the thought that they could have died, continued to haunt them.

> *And that was the most horrible feeling I have ever had…. You didn't know whether your house had survived or not.* (P1R5)

> *And then the more you didn't know what was going on, the more stressed you were getting.* (P1R9)

> *I don't think I will ever forget driving down that road, seeing trees – dodging around trees that have fallen already – it stays with you for a while, you sort of think shit. Could have been even….* (P1R14)

The long-term impact

The recovery period from the fire was ongoing at the time of these interviews. Emotional experiences during this time included deep sadness, which could be triggered by reminders of the impacts of the fire. These triggers included knocking down a burned-out neighbour's house and damage to bush and wildlife. However, frustration and anger were also part of the emotional landscape, triggered by the ongoing financial and logistical challenges and setbacks of rebuilding, including the pressures of the extra workload when combined with regular paid work outside of one's property.

> *It takes a long time to go through, because you go through all those mental things. You think you're good. You're happy that your house survived and then you get really angry because you have to go through all this shit basically … I thought we'll get this place up and it will be beautiful and the same as it was in less than 12 months. It's not going to happen. (P1R5)*

> *We were in really good shape after the fire but the frustration of people – the insurance company's been very good but the people they've got to do jobs have been absolutely awful… The man who came originally to connect the television …he took advantage of us and I find those things distressing. (P1R7)*

> *I talked to a few people that stayed and said it was a bit scary. I must admit after the fire I was a wreck really. I couldn't stop crying. Every time I drove downtown I'd cry"…"you think oh where do you start again"…"and then work as well at the same time type thing. (P1R3)*

These findings in relation to emotional preparedness are set out in the infographic, located in Appendix D.

These stories of the emotional landscape and their triggers in the immediate and longer-term aftermath of the fire suggest some practical focal points for CFS materials and programs to support emotional preparation – 'not knowing', fears of death and dying, grief and loss, and anger and frustration. Stories like those above could be used to illustrate which emotions are likely to occur and their possible triggers. The finding reported earlier that prior experience of a bushfire also increases emotional preparedness suggests that, where possible, campaigns might usefully include these kinds of stories of the 'lived experience' of bushfires.

Actions on the day of the Sampson Flat fire

How then did people act on the day of fire itself? We asked participants about what they did on the day of the fire, what changed their planned action, and what supported them on the day.

PLANNED AND UNPLANNED ACTION

Although 81.7% of people took their planned action, 31% of people changed their plan due to circumstances (see Figure 8). As the quantitative data doesn't provide further detail on what triggered changes we looked to the qualitative data from the interviews for further insights.

The most common circumstances that required people to change their plans were:

1. Unexpected levels of anxiety as the fire moved closer, prompting people who had originally planned to stay and defend, to leave as the fire approached

   I could already see that my son probably wasn't as nervous, but the daughter-in-law was a bit more nervous…. Right up until probably a half house before we could actually see the flames we were prepared to sit it out…It was just a matter of probably nervousness more than anything. (P1R11).

2. Unexpected roadblocks which prevented one or more members of the household from returning home to fight the fires.

   We had the four wheel drive with the horse float on it, and the horses out was our fire plan, and our plan was for her to come back with the four wheel drive and hook the trailer up, and go around and put the spot fires out around the property. The Police stropped her from coming back. (P1R10.)

Other unexpected circumstances that caused changes in plans included custody arrangements for children and re-evaluating a safe shelter as less safe than previously thought.

These findings suggest that, although most people carry on as they expected during the fire, anxiety and unexpected situational or family circumstances can de-rail and change plans. This interview data in relation to anxiety changing people's plans further supports the need for greater emphasis on emotional preparedness.

IMPORTANT ACTIONS ON THE DAY OF THE SAMPSON FLAT FIRE

Participants were provided with a list of actions/behaviours, and asked to identify which were the most important things that helped them on the day of the fire. Percentage yes/no responses to these questions are summarised in Figure 9.

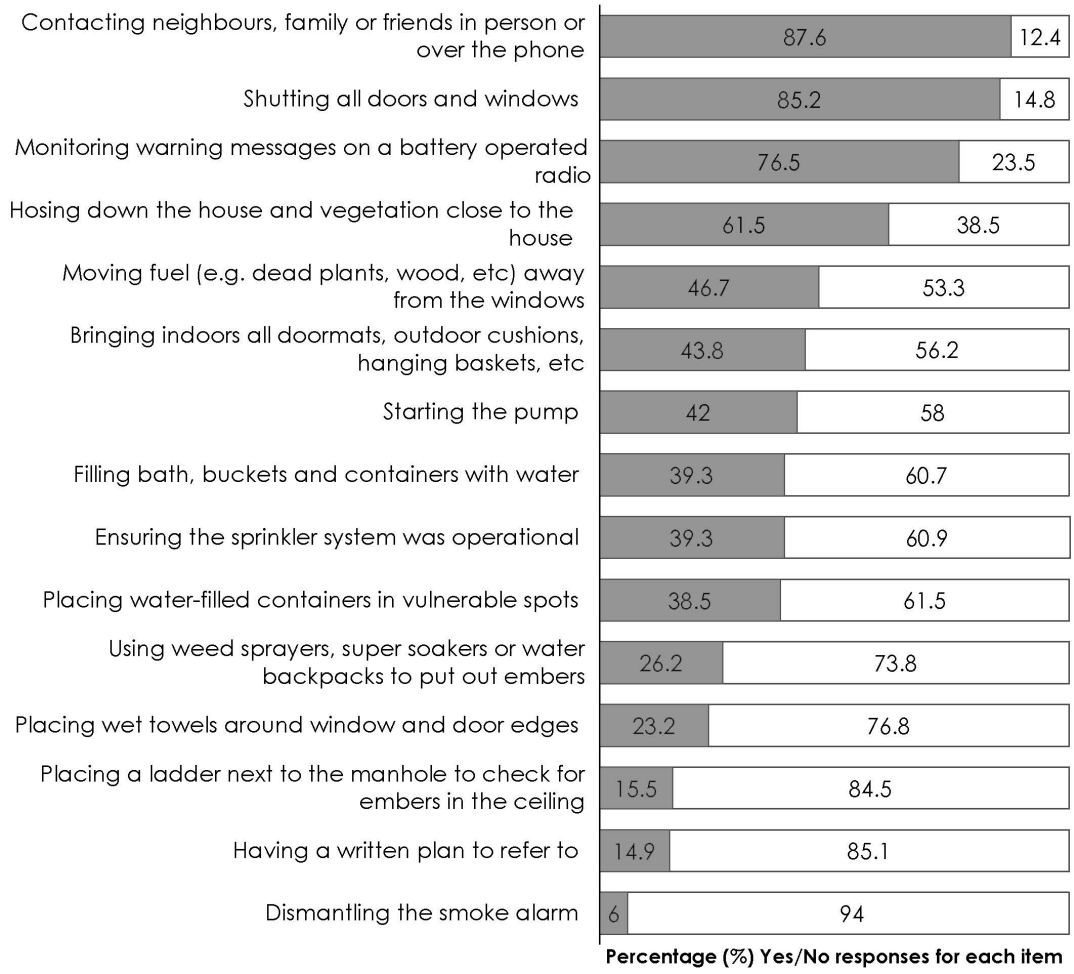


Figure 9.

Percentage yes/no responses to questions about behaviours which were important to residents on the day of the fire

Of these, contacting neighbours, family or friends in person or over the phone was the most important thing that helped people on the day of the fire (87.6%). The most important awareness-related action/support was monitoring warning messages on a battery-operated radio (76.5%). Preventative/management actions which were considered important on the day of the fire by over 50% of respondents included shutting all doors and windows (85.2%) and hosing down the house and vegetation close to the house (61.5%). 14.9% of people indicated that having a written plan to refer to helped them on the day of the fire. Given that 25.5% of people indicated they had prepared a written bushfire plan (see Figure 6), it seems that about 58% of people who prepared a written plan found it useful on the day of the fire.

These findings suggest that most of those who participated in the research found sourcing information through a battery-operated radio and sharing and sourcing information through friends, family and neighbours the best support on the day. However, having a written plan to refer to was rated as the second least important.

DECISION-MAKING: STAYING OR LEAVING ON THE DAY OF THE SAMPSON FLAT FIRE

Forty-five per cent of residents left the area early on the day of the fire whilst 38.5% stayed and defended. 29 residents answered 'other', and indicated that they were either away on holidays, or that some members had stayed to defend whilst others left early.

The decision to stay and defend was more likely to be made by those who had prior experience with bushfire. Specifically, 46.3% of individuals with prior experience of bushfires chose to stay and defend. In contrast, less than a third (29.3%) of individuals with no prior experience of bushfires chose to stay and defend. These are illustrated in Figure 10 below.

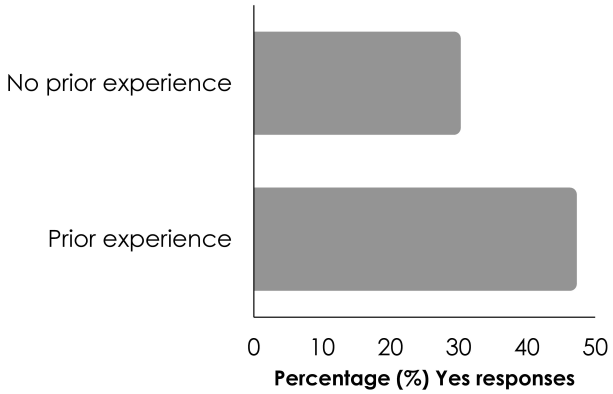


Figure 10.

Percentage of individuals who had prior experience of bushfires who chose to stay and defend

Those with a moderate to high understanding of bushfire safety were also more likely to leave ($\chi^2(1)=8.28$, $p=0.017$) (61.8%), as were those who had been in the area less than 20 years. They were 2.81 times less likely to stay and defend ($\chi^2(1)=8.125$, $p=0.004$).

Neighbourhood and community networks

The project also explored the role of community in bushfire responses and experiences, specifically in relation to communication during and after the fire, and the role of community closeness and networks in assisting vulnerable people.

COMMUNITY CLOSENESS

The majority of residents considered their community to be close (25%, n=168) or very close (32.1%). A small percentage of residents (3.6%) responded that their community was extremely close. However, just over a quarter of residents (25.6%) felt that their community was not close at all.

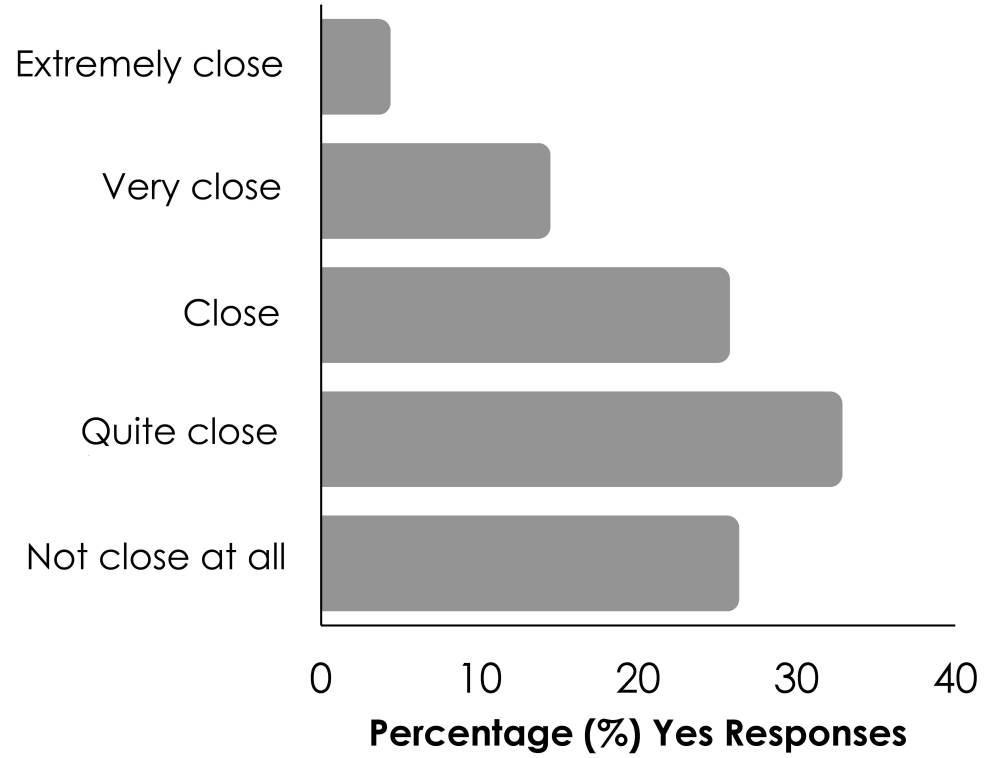


Figure 11.

Residents' perceived community closeness

Length of time in the area was associated with community closeness, with a greater proportion of residents who had lived in the area fewer than 20 years more likely to feel their community was not close at all (35 of 42; $\chi^2(3)=7.997$, $p=0.046$).

There were no significant associations found between community closeness and prior experiences of bushfire ($\chi^2(1)=0.40$, $p=0.940$), prior concern about bushfire ($\chi^2(1)=2.30$, $p=0.514$), or understanding of bushfire safety ($\chi^2(6)=7.06$, $p=0.321$). Insufficient data were available to consider the associations between community closeness and understanding of bushfire risk and motivation to prepare. There was no relationship between community closeness and decisions to stay and defend ($\chi^2(3)=2.81$, $p=0.421$), or decisions to leave early ($\chi^2(3)=6.71$, $p=0.082$). It was not related to assisting vulnerable people (which is considered in the later section on vulnerability).

However, community closeness was related to coming together as a community post-fire, which is explored further in the next section.

COMMUNICATION

The majority of residents (83.3%) indicated that they remained in contact with neighbours on the day of the fire. Together with the finding earlier that the most important action on the day was to contact other people, this suggests that communication between community members, both those geographically near and those part of wider networks, is an integral part of many people's response to fires.

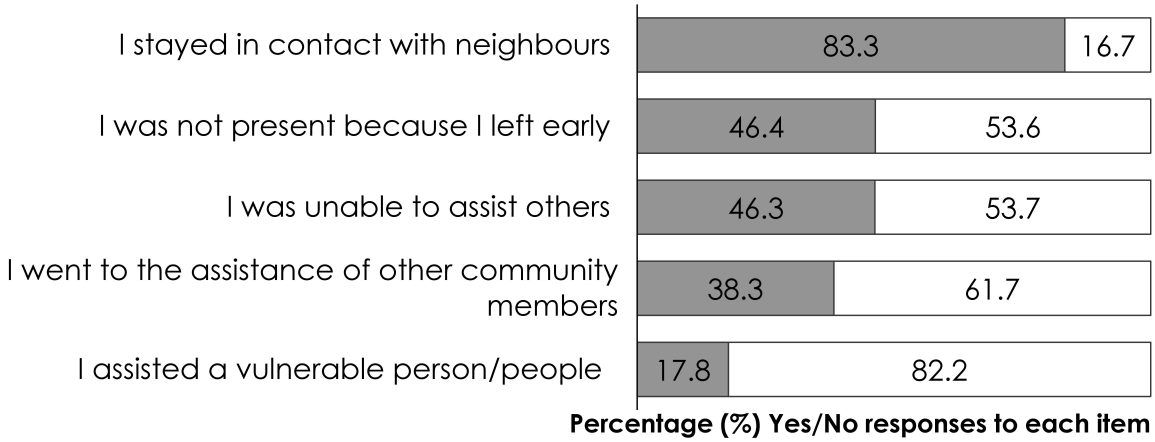


Figure 12.

Residents' responses to assisting and communicating with members of the community during the Sampson Flat fire

After the fire, most residents (78.0%) met with their neighbours/community. The closer people thought their community was, the more likely they were to meet ($\chi^2(3)=27.54$, $p<0.001$). This effect is perhaps best reflected by the finding that 100% of those who reported a 'very close' community and 95% who reported a 'close' community, met with neighbours after the fire.

These findings suggest that community closeness increased the likelihood of residents communicating with each other after a fire. Interventions and programs that increase community closeness may therefore be helpful in fostering post-fire support, particularly for people who are newer to an area, who were less likely to feel close to their community.

VULNERABILITY AND ASSISTING OTHERS

Although communication networks were strong for most people in most communities (except for those who did not experience their community as close), physical assistance was less common. Prior to the fire, 23.4% assisted others to prepare their properties, and on the day, just over a third (38.3%) of respondents indicated they went to the assistance of other community members. Whilst almost half of the respondents identified other vulnerable people in the community (42.5%) (see Figure 13 below) less than half of these (17.8%) assisted vulnerable people on the day of the fire, noting that 46.3% reported being unable to assist others (see Figure 12 above). Assistance for vulnerable people was primarily for elderly neighbours or family members, or for animals and animal owners. It should be noted that some vulnerable people may have relocated early and therefore were not in need of assistance during the bushfire.

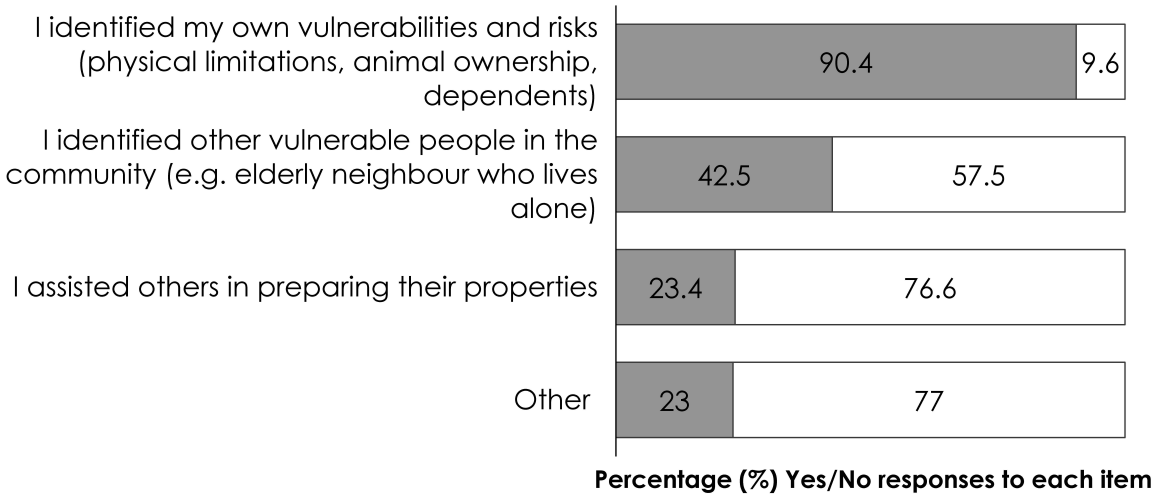


Figure 13.
Resident responses to measures of vulnerability prior to the Sampson Flat fire

Who is more likely to assist others and why is not clear from the quantitative data. There were no significant relationships found between assistance and community closeness, understanding and knowledge of risk and safety, or prior experiences with bushfire.

However, the qualitative data provides some insights here. Of those who assisted others, including vulnerable community members such as older persons or people experiencing a mental illness, there were four salient factors.

1. The circumstances of the fire itself, that is the fire created a situation where people were in need and the person assisting was the one in a position to help.

   A couple of people were rounding up cows so we stopped and help them and there was one young guy there and he's from [outside the area] and… because we couldn't get out because the trees had fallen across the road so we said "well you can come back up to our place and we'll go back and we'll have tea and hang out at home, you can ring your dad and tell him you're alright and everything. (P1R3)

2. Having a particular passionate interest/community connection (e.g. animals), which inspired people to use their skills to help in relation to this issue.

   I was on Facebook back where I was and, able to actually start pulling information together and then coordinating that and let (husband) know, so there were people that were really obviously worried that had evacuated about their animals, and so they would send me their address, and I would be to send him around with whatever horse feed and water, and make sure all the animals were okay, and then feed it back to the owner so he feels more relieved. (P1R10)

3. Previously established relationships, that is, where neighbours had already been assisting each other.

   We text him to see if he had gotten out and he said yes he's gone. That was all we worried about really […] He doesn't have any work or anything like that so we get him to do some stuff for us if we need help or something like that. So we keep a bit close to him and keep an eye on him a bit because he struggles. (P1R3)

4. Assisting others was part of their personal value system.

   I think there's just a basic understanding that if you needed someone they would be there. (P1R7)

   I just always try and look after the neighbours…. Let them know because some of them are old. (P1R2)

5. Assisting others was part of their professional role.

   I work as a Home Support Worker. 3 clients were evacuated during bushfire.

These findings indicate that assisting others during a fire event, including vulnerable community members, is not increased by perceived community closeness. Rather, those who assist others are a) more likely to be people who include helping others as part of their value system, b) have a previous relationship of assisting another person, c) have particular skills and interests and are able to use these, and d) are placed in a position to help because of the circumstances of the fire. This suggests that interventions for more vulnerable community members may perhaps be best fostered through supporting the individual efforts of interested community members.

Resilience

Residents were also asked questions aimed at understanding resilience during and after the Sampson Flat fire. For this project, resilience was conceptualised as the ability to respond confidently to changing and unpredictable circumstances. It incorporated ideas of self-efficacy and control. This definition reflects that, whilst bushfire safety programs can provide guidance and advice, these cannot be targeted for each individual's circumstances, nor can they address each unpredicted event during a fire. SA CFS programs thus focus on developing the skills and knowledge to be able to flexibly apply what is learned to changing circumstances.

Percentage responses (yes/no) are provided in Figure 14. Overall, residents indicated they felt they were able to make new safe decisions when conditions changed (96.4%), be flexible in the face of changing conditions (95.8%), adapt to unpredictable events (93.4%), and problem-solve in the moment (93.3%). Just over three quarters of residents felt they were able to manage anxiety and

stress (76.4%), while 68.5% felt they had some control in an uncontrollable situation.

Further analyses were conducted to identify any associations with the management of anxiety and stress, and feeling comfortable in an uncontrollable situation. There was no association between prior experience of bushfire and self-reported management of anxiety and stress during the fire ($\chi^2(1)=0.01$, p=0.920), or feeling comfortable in an uncontrollable situation ($\chi^2(1)=0.10$, p=0.867). Similarly, no association was found between prior concern of bushfire and self-reported management of anxiety and stress during the fire ($\chi^2(1)=0.94$, p=0.418) or feeling comfortable in an uncontrollable situation ($\chi^2(1)=0.28$, p=0.626).

There was no association between understanding of bushfire risk and self-reported management of anxiety and stress during the fire ($\chi^2(1)=0.60$, p=0.771), or feeling comfortable in an uncontrollable situation ($\chi^2(1)=2.41$, p=0.311). Finally, there was no association between community closeness and self-reported management of anxiety and stress during the fire ($\chi^2(3)=1.56$, p=0.679), or feeling comfortable in an uncontrollable situation ($\chi^2(3)=0.32$, p=0.965).

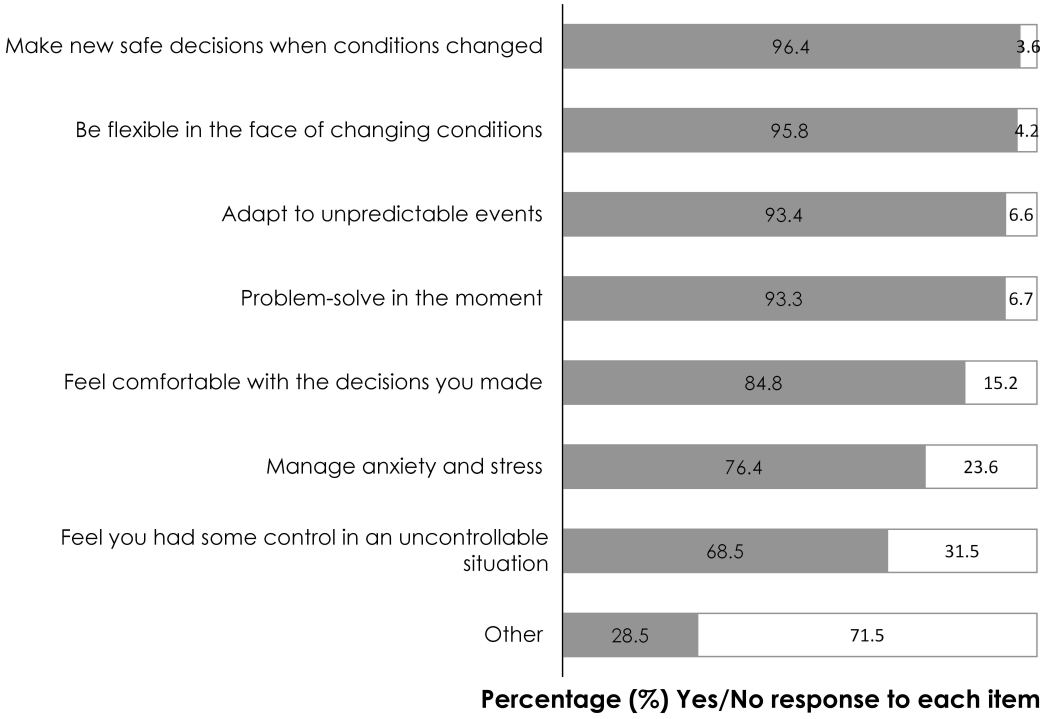


Figure 14.

Residents' self-reports of resilience

Given that the self-reports of adaptability, problem-solving and flexibility are at almost 100%, it is probably unlikely that we would find any significant relationships with other factors. Taking into account the experiences people reported in the interviews, and also the findings reported elsewhere in relation to emotional preparedness, it seems that these self-assessments of adaptability, flexibility and emotion may not reflect people's experiences. This suggests that this question (the wording, its abstract nature, its placement at the end of the survey) was not able to capture these aspects of resilience.

CONCLUSIONS (PROJECT 1)

This first research project explored the fire experiences of those affected by the Sampson Flat fire in relation to planning, preparation, action, community networks and vulnerability. It focussed on factors that may be associated with making safe plans, preparing people and property, carrying out plans, communicating with and assisting neighbours and vulnerable people.

The majority of residents reported having a discussion about what to do in the event of a bushfire and discussed either staying to defend or leaving early. A quarter of residents reported preparing a written bushfire survival plan (25.5%), and/or practising/rehearsing their bushfire survival plan (23.4%). This compares positively with the national average of 6% of people who reported preparing written plans in previous post-bushfire interview studies (see McLennan et al. 2015). Practical actions, particularly those which could be undertaken by most householders and which are relatively inexpensive, such as clearing gutters and shutting windows and doors, were widely undertaken. Ways of encouraging people to increase planning and undertake more costly preparation need to continue to be considered.

Concern about bushfires was associated with higher knowledge of bushfire safety and motivation to prepare for bushfires, as well as with developing a written plan and higher-cost preparations such as sprinkler systems, fire hoses and pumps, and independent water supplies. Increasing bushfire concern through awareness-raising thus continues to be an important way to encourage people to know more and prepare more for bushfires.

Reflecting this priority given to practical action, people were also more likely to feel physically prepared. However, just under half of the participants did not feel emotionally prepared. The findings indicate that physical preparedness may be over-emphasised and emotional preparedness under-emphasised in current bushfire safety information and programs. The findings suggest that one way of increasing emotional preparedness is to increase bushfire safety knowledge. This knowledge should include psycho-education on the expected emotional impacts of fires, preferably from a lived experience perspective, given that prior experience with bushfires increased emotional preparedness. It should also be emphasised that there are likely to be mental performance decrements associated with the stress of experiencing a bushfire (McLennan et al., 2011).

Awareness of the fire danger warning 'catastrophic' was very high. Awareness campaigns on fire danger warnings appear to have been effective in this respect.

Within neighbourhood and wider networks people are sharing and gathering information, both on the day of fire and following the fire. However, this is not the case for everyone – there is a small but significant proportion of people who did not feel close to their community and were less likely to meet afterwards. Community closeness enhanced post-fire communication and thus continues to be a useful focus for interventions and programs, particularly for newer residents, who were less likely to feel close to their community.

There was a general awareness of vulnerable community members, and a small but significant percentage of people assisted others on the day of the fire. Community closeness, however, was not related to assistance for vulnerable people. This assistance was more likely where there were prior established relationships of assistance or where the person was part of a particularly interest group.

What might these findings mean for CFS campaigns and interventions for this and the greater Adelaide Hills area?

The findings suggest that campaigns that raise concern about bushfires, those which highlight low-cost property preparations, and education about fire danger warnings, had positively impacted on people's actions prior to and on the day of the fire.

The findings also suggest three potential target areas for future campaigns/interventions:

- Planning and the importance of planning continues to be a focus, and may be targeted through awareness-raising campaigns which increase people's levels of concern
- Emotional preparedness as part of bushfire safety, which could be most effectively achieved through sharing stories of the lived experience of bushfires
- Increasing the assistance available to vulnerable people in the community, potentially through supporting interested individuals to include vulnerable members in planning, preparation, response and recovery.

PROJECT 2: COMMUNITY FIRE SAFE GROUPS

The community engagement program aims to foster and consolidate community resilience (O'Donohue & Dunstan, 2015). The groups, which are street-by-street and run by a group coordinator, aim to not only provide people with bushfire information, but also to create community level communication (e.g. through phone trees) and function as a source of support before, during and after a fire.

Given the potential benefits of the Community Fire Safe group program, Project 2 asked:

> Has the SA CFS Community engagement program, Community Fire Safe, had a measurable effect on improving community safety, survival, recovery and resilience in the Sampson Flat fire area?

To answer this question, the original project design sought to compare and contrast safety, survival, recovery and resilience across both group members and non-members in the fire-affected area. However, very low response rates from Community Fire Safe groups meant that such a comparison was not statistically possible. Given this, the original project became two projects: Project 1 on the bushfire safety of residents, presented earlier, and this project, Project 2. Project 2 uses the 31 survey responses and 10 interviews with group coordinators and members as a separate data set. It provides descriptive frequencies, or, where possible chi-square analyses or t-tests, for each of the survey questions, together with a thematic analysis of the interview data in relation to: types of groups and types of coordination and how these influence group functioning; the impacts of groups on knowledge and behaviour; and communication.

METHODS (PROJECT 2)

Data collection and analysis

Community Fire Safe group members were contacted over a six-week period, initially through an emailed invitation from the Community Engagement Officer, and then with a follow up email from the CFS Chief Officer. Ongoing efforts to recruit members were made through the CFS Facebook page and snowballing via group coordinators. Participation rates continued, however, to be very low.

Data was collected through an online survey and face-to-face or telephone interviews. A copy of this survey and the interview questions are attached as Appendix B.

The online survey was open from 30th June 2015 until 30th July 2015. There was also an option to complete hard copies of the survey. 33 people (20 members and 13 coordinators) completed the online or hard copy of the survey. Two incomplete survey responses were removed, leaving a total of 31 surveys.

The interviews occurred between 13th July 2015 and 31st August 2015, and were either face-to-face in people's homes or conducted over the telephone. A total of ten interviews (5 with coordinators, 5 with members) were completed. Three interviews conducted with residents for Project 1 also mentioned Community Fire Safe groups in relation to not joining or joining nearby groups, and these were included in the analysis also. The interviews were used to provide insight into areas of interest, specifically group types and functioning, the impacts of group membership on knowledge and behavior, and communication.

Due to the very low numbers, in most cases it was not possible to conduct any statistical analysis for significant differences. Where possible, the numbers have been reported as frequencies (i.e. this many people did 'x'), or using a chi-square analysis (people in this category X are more likely to also be in this category Y). However, in most cases, only the numbers of responses are reported.

This analysis does not seek to make statements about all Fire Safe groups, nor does it exclude the possibility that other groups of neighbours who are not part of Fire Safe will exhibit similar characteristics. The information provided here has emerged from an analysis of a small number of surveys and interviews with participating Fire Safe group coordinators and group members and represents their impressions of their groups.

FINDINGS (PROJECT 2)

For the purposes of this report, we have divided the findings into five sections.

1. Demographics of the sample and the Community Fire Safe groups
2. Bushfire planning and preparation prior to the Sampson Flat fire
3. Actions on the day of the Sampson Flat fire
4. Neighbourhood and community networks
5. Resilience

Demographics

THE PARTICIPANTS

The participants' age ranged from 25 – 74 years, with an average age of 52.4 (SD=12.7). Sixty-four per cent of the participants were male. The majority (56.6%) of participants live on a large 'lifestyle' or bush block, whilst a fifth (20.0%) lived on a farm or other agribusiness (such as a winery). The majority of households (53.3%) consisted of two or more adults with children.

THE FIRE SAFE GROUPS

The majority of Community Fire Safe groups in this survey had started between 2012 and 2014 (which suggests that this data collection did not capture older groups which established prior to 2012), and had between 6 and 15 members (60%). The most common reason for joining a group was concern about bushfire safety (90%), with three-quarters of participants also wanting to connect with neighbours (77%) or understand bushfire behavior (73%). Two thirds of groups meet twice in their first year and two thirds also continue to meet regularly. Of those groups that did not continue to meet, this was most commonly attributed to having learned what needed to be learned.

Most respondents felt that their group's (a) motivation and (b) ability to work together were moderate – 43.3% and 36.7%, respectively. However, the majority of respondents (96.7%) were satisfied with the outcomes of their group.

The qualitative interviews give some further insight into the groups, in particular how groups are shaped by their responses to individual and situational factors, and by the type of coordination. Each of these is examined in more detail below.

Individual and situational characteristics and group functioning

There were four individual factors that shaped group functioning, specifically:

- different needs for privacy
- friendships and disagreements between neighbours
- time capacity
- attitudes about fire risk.

These factors that shaped group functioning are illustrated in the extracts below.

Privacy

> *The Fire Safe group meetings - it doesn't really fit the bill for everyone. As I said before, some people live up in the hills just for their pure privacy and they don't want to sort of go around to people's places for lunch and meet and discuss a potential threat to their lifestyle really. (GC3)*

> **Do you mind if I ask if there was a reason why you weren't that keen to go to the meetings?**[5] *We're kind of not into meetings*. **Group people?** *Yeah, we're not into anything like that. (R13)*

Friendship/disagreements

> *There'd been a little bit of bad feeling through the fire because people obviously got into survival mode and so weren't being very neighbourly all the time. (GC5)*

> *I've got no qualms with ringing sort of pretty well everyone in the street but there's some sort of up one end might not ring someone at the other end or a certain neighbour they've got problems with. The problems experiences in the suburbs are just the same in the hills. Probably sometimes even a little bit more because some people sort of expect their privacy even a little bit more. (GC3)*

Time and availability

> *I've tried organising them [meetings] before Christmas no one rolls up. Everyone's all rushing around mad about Christmas and no one's thinking about fire. (GC2)*

Attitudes towards fire risk

> *We've lived here for 24 years now and we have never had a bushfire. Actually we didn't even know that we were in a bushfire risk area; well it was very low risk anyway and so it was very educational going to that [Meeting]. (GM2)*

> *But I think you know most people are probably in denial it is ever going to happen. (GM2)*

These individual characteristics might be considered to be barriers to group participation but it may be more useful to consider them as factors that shape the group's interactions. The finding in the survey that 96.7% of people are satisfied with the outcomes of their group, together with the interview data here, suggests that Fire Safe groups create the best functioning group possible

[5] Quotes in bold indicate that the interviewer is speaking.

given the context in which that group operates. This doesn't mean that improvements are not possible, but that these factors of privacy, time and attitudes provide the context in which the group operates.

Three distinct types of group interaction could be identified based on the perceptions of individuals in those groups. These types of group interactions are characterised by 1) the extent to which groups mutually learn before the fire and 2) provide support for each other during and after the fire. The three group types were:

1. Together through learning and fire
2. Together through learning but not fire
3. Initial meetings but no further contact.

The first type of group learnt together before the fire and had at least some mutual support during the fire. As the quote below from a group coordinator shows:

> *I put out a bit of a letter at the fire season start just saying familiarise yourself with what at least your two opposite neighbours are doing and what their systems are and whether you need any assistance. Try and encourage them if they are staying and defending to form up work parties with three or four different neighbours so they can rove around as a group which was good to see them establish the Sampson Flat fire because there was about four different four wheel drives getting around with groups of three or four guys switching around. Patrolling up and down the street and helping other people start fire pumps and it was good seeing them all kick together. (GC2)*

Other groups functioned as the second type: a group who learnt together before the fire but didn't interact during the fire.

> *I think as far as I'm concerned with the group, we're there to support each other. We're there through the learning process. This is what we've been doing, and we are there to inform, and we did activate the fire tree, telephone fire tree, which was great, and I think that's basically what it's about. […] They've got their own plan. Some might leave straight away. Some might leave at the last minute but everybody is concentrating on themselves. They have to do, to do your own thing. I mean there was no way that I could have been running around, looking to see what other people were doing… so it's really each man for themselves. (GC5)*

> *When the fire was on it was everyone for themselves. (GM10)*

For those who are in a group that is primarily functioning as 'together in learning but not the fire' but who would like the group to be one of 'together in learning and fire', disappointment and confusion can arise. Two participants reflected on this conflict when people would like the group to provide different things.

> *And people say people rally round, you've got friends, neighbours; no, not one neighbour has helped. Not one. (GM4)*
>
> *There'd been a little bit of bad feeling through the fire because people obviously got into survival mode and so weren't being very neighbourly all the time (GC5).*

The third type of group, one in which people went to the initial meetings, but which later dissolved, was also part of the Fire Safe experience. However, these group experiences could still influence knowledge and behaviour through the initial meetings. For the interviewee whose group had met initially but not since, she noted that she and her husband had changed their plan and also been motivated to further prepare their house and their kit for evacuating, both of which they attributed to their house surviving and to their smooth evacuation on the day (see the quotes from the interview with GM2 in the sections on knowledge and actions below).

These broad types of groups were identified in the interview data considered in this study, however, this should not be considered to be an exhaustive typology of Fire Safe groups. It should also be noted that these group interactions are based on the perceptions of the individuals concerned and don't necessarily indicate interactions between other group members in those groups.

Type of coordination and group function

As well as the individual differences and meanings noted above, group type and group functioning were also shaped by the style of coordination. Given people's needs for privacy, time constraints, and different attitudes towards fire risk, coordinators sought to work with these factors, although for some groups, as noted, the challenges meant that they never really got off the ground.

The coordinators interviewed for this research may be grouped into two types or styles of coordination:

1. Actively driving information, meetings and activities in the neighbourhood regardless of response
2. Facilitating meetings and providing information if there is sufficient response from neighbours.

Those who were active drivers tended to adapt to people's lack of time for meetings, their need for privacy/not being a group person, or different attitudes to fire risk by:

a) Gathering and sending out information on a regular basis, using their own skills, expertise and research

> *I've got [plans with all the property boundaries]… printed off and we update it just prior to each fire season and then I go and letter drop them down the street. These maps they have everyone's first names on the map…with their home phone number, mobile*

numbers and what they have got in the way of bushfire assets. So we've got little logos on for whether they've got a sprinkler system or just a fire pump and hose or if they don't have anything and how much water capacity they have as well. (GC2)

b) Adapting communication for people who didn't participate in meetings either because of personal preference or vulnerability e.g. speaking individually with people, or facilitating smaller group networks

There are a few others though that need assistance and I try and encourage them to go and talk with their neighbours. I put out a bit of a letter at the fire season start just saying familiarise yourself with what at least your two opposite neighbours are doing and what their systems are and whether you need any assistance. (GC2)

I'll actually go and visit them and say "listen can you come around" and just find out why they're not coming. If it is that they don't feel like interacting with other people then it might be that I just do a one on one with them. (GC3)

c) Meeting and inviting new people to the area to join the group and providing information to them

When new people come in I make it my business, I give them a week or two and then I go round and introduce myself. In fact there's one that I've still got to go and have a chat with. I've spoken to them. We've had email contact. But I make it my business to at least give them some information, some brochures, offer my services if they want and pretty much all come on board. (GC1)

d) Stimulating discussions about planning and preparation through the use of challenging questions

The question is well what would you wish you had done? You drive off a bit late and then you get caught. I said "just hang in there, hold that in your mind, what would you wish you had done?" They're all inputs to the plan. […] I had this terrific photo of embers blasting across the countryside and I used to say to people "right stand on your front veranda where you often stand with a cuppa or a glass or chardy or something and you look out at this peaceful scene." […] Oh. Well I don't know. That's where you could say "well what would you wish you had done?" […] I wish. I wish. I wish. Write it in your plan. (GC1)

e) Responding to observations about groups dynamics and trying new forms of groups (e.g. women only)

We've also gone and ran a ladies' day one day because our street has a lot of the older couples and I've noticed it before where a wife may ask a question and they get that scowling disapproval look

> *from their partner from asking what they think was a silly question. So I decided to do a ladies' day. […] I think we had about 15 females up for that one. (GC2)*

f) Focusing on the positives and on making small changes

> *Yeah it can be frustrating but at the same time the people I did get, well, that's lives that I hope are saved in it, so you've just got to not focus on the negatives. (GC2)*

For this style of coordinator, there can be a heavier financial and time commitment. However, as noted by these coordinators, this is balanced by positive outcomes from their efforts: e.g. residents used the map to contact the coordinator individually to talk about bushfire safety; 15 women attended the ladies day; new people joined the group; people supported each other during the fire by forming small patrols (for this final example, see the extract from GC2 in the section on actions below).

These findings in relation to the individual, situational and coordination factors which shape group functioning suggest that Community Fire Safe groups are not a 'one size fits all' intervention, rather, where possible, coordinators adapt communication, ways of staying in contact, and information to the particular conditions they are working in. It suggests that providing professional development to coordinators for developing skills in flexible and adaptive ways to manage groups may be helpful, and that this may be emphasised at the recruitment stage as well.

Bushfire planning and preparation prior to the Sampson Flat fires

UNDERSTANDING OF BUSHFIRE RISK, MOTIVATION TO PREPARE, AND KNOWLEDGE OF BUSHFIRE SAFETY

Twenty-nine participants rated their understanding of bushfire risk, while 28 rated both their motivation to prepare their property and knowledge of bushfire safety.

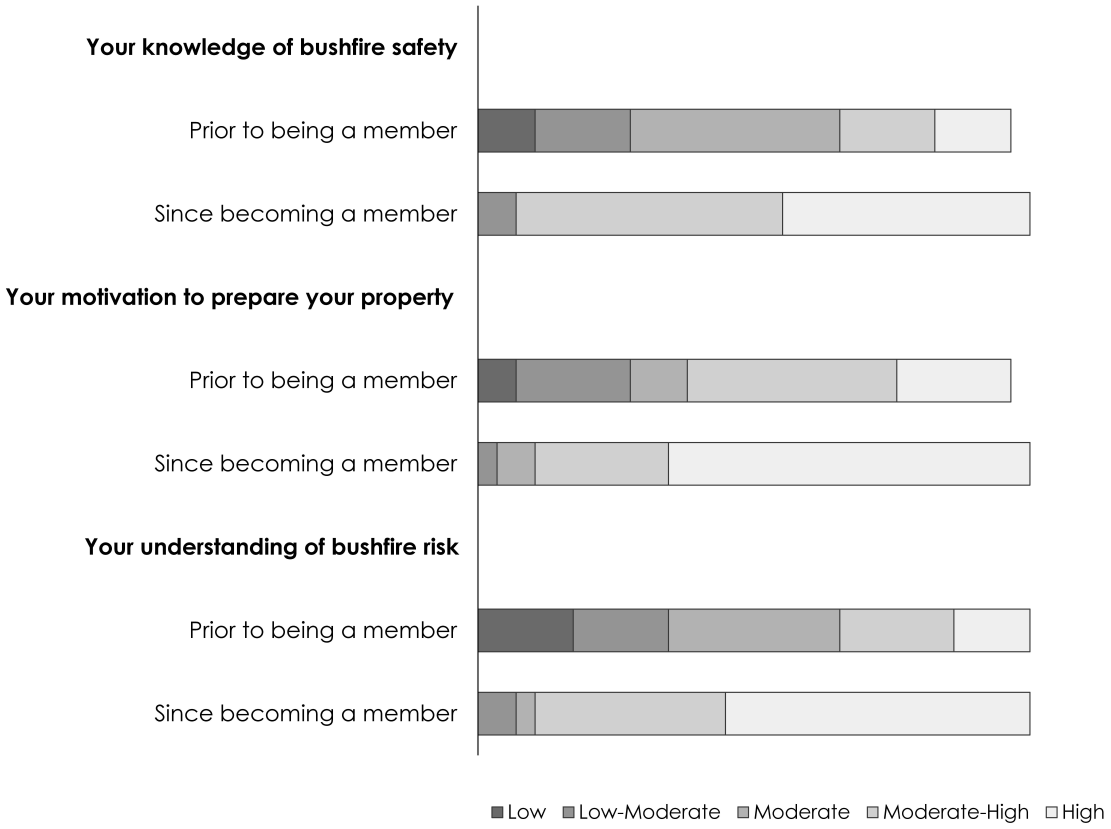


Figure 15.

Participants' understanding of bushfire risk, motivation to prepare and bushfire safety knowledge

Participants reported greater understanding of bushfire risk since joining a Fire Safe group ($\chi^2(4)=20.89$, $p<0.001$). After joining, participants were four times more likely to also report a high understanding of bushfire risk. After joining a Fire Safe group no respondents reported having a 'low' understating of bushfire risk.

Participants reported greater motivation to prepare their property for a bushfire since joining a Fire Safe group compared to prior to being a member ($\chi^2(4)=13.41$, $p<0.001$). After joining, participants were more than three times as likely to also report a high motivation to prepare their property. After joining a Fire Safe group no respondents reported having a 'low' motivation to prepare their property for a bushfire.

Participants reported greater knowledge of bushfire safety since joining a Fire Safe group compared to prior to being a member ($\chi^2(4)= 4.30$, $p<0.001$). After joining, participants were more than three times as likely to also report a high knowledge of bushfire safety. After joining a Fire Safe group no respondents reported having a 'low' knowledge of bushfire safety.

These findings suggest that participants perceive the group to increase knowledge, understanding and motivation.

PRE-FIRE ACTIVITIES: PLANNING ACTIVITIES AND PREPARATION ACTIVITIES

Twenty-eight participants responded to these questions. There was a significant association between the reported planning and preparation behaviour prior to being a member of a Fire Safe group and since becoming a member ($\chi^2(1)=70.29$, $p<0.001$). Participants were 3.5 times more likely to have undertaken preparation and planning since becoming a member of a Fire Safe group than prior to being a member. Further, a majority of participants (86.7%) agreed or strongly agreed that their Community Fire Safe group enabled them to be better prepared for a bushfire.

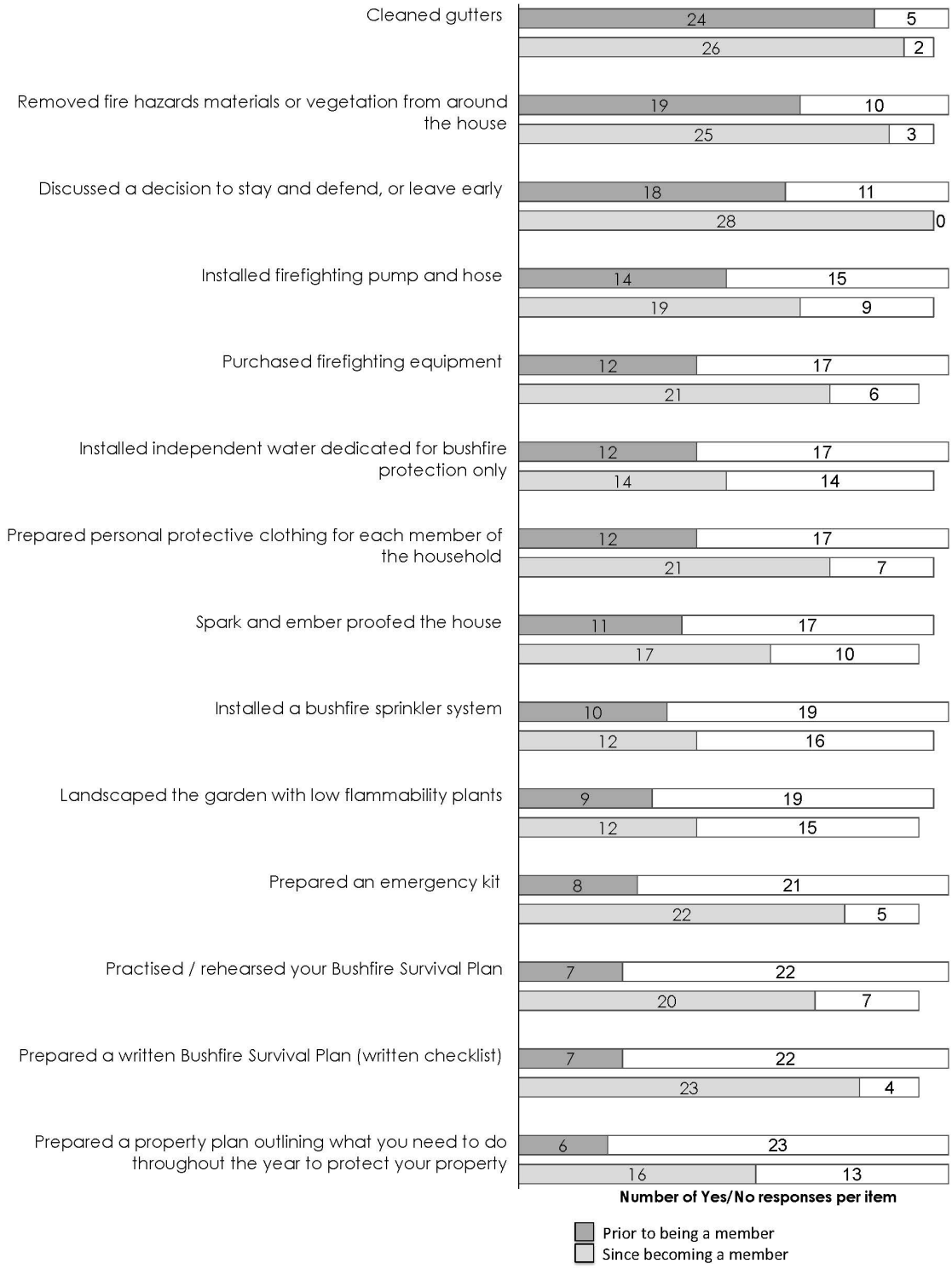


Figure 16.

Planning and preparation prior to and since becoming a member of a Community Fire Safe group

However, being a member of a Community Fire Safe group did not influence all aspects of preparation. Those aspects not affected were: cleaning gutters, installing a bushfire sprinkler system, installing independent water dedicated for bushfire protection only, and installing firefighting pump and hose. There was no increase in cleaning gutters as this was already something that respondents were doing. And as noted in Project 1, the other tasks are more expensive, and are thus less likely to be influenced by being a member of a group.

BUSHFIRE PLANS PRIOR TO THE SAMPSON FLAT FIRE

Twenty-eight participants responded to the questions about plans. Figure 17 displays the participants reported bushfire plans prior and since becoming a member with the frequency different elements of their plan. The only element of participants' bushfire plan that changed significantly since becoming a member of a Fire Safe group was whether participants had a bushfire plan or not ($\chi^2(1)=9.47$, p=<0.002). Participants were 6.7 times more likely to develop a plan since becoming a member of a Fire Safe group than prior to being a member.

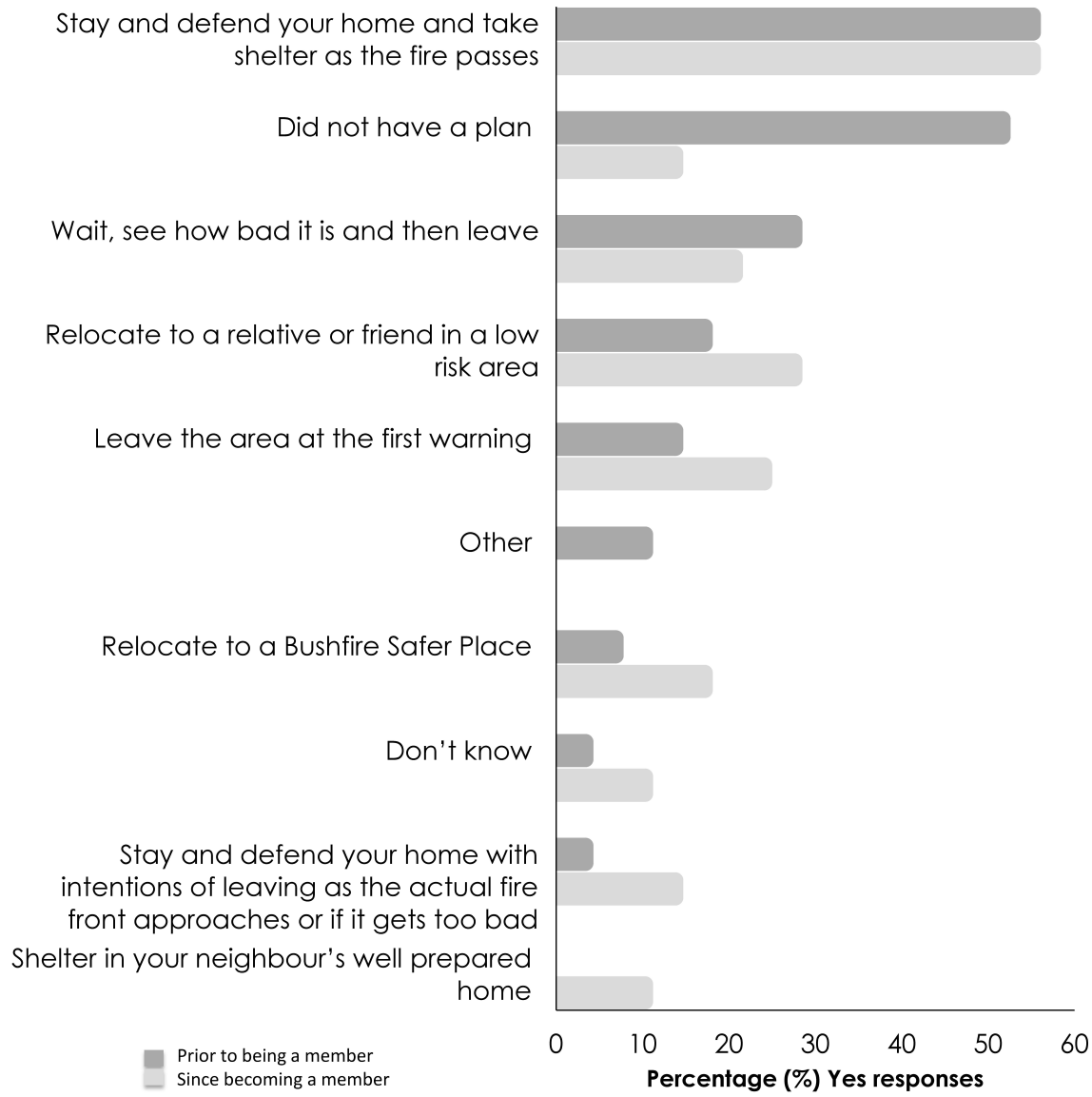


Figure 17.

Participants' bushfire plan before and after being a member of a Community Fire Safe group

Although the low numbers unfortunately do not allow us to generalise from this finding, it is notable that Community Fire Safe groups may assist in increasing the levels of planning, given the consistent cohort of people identified in this project, and across previous research, who do not develop a bushfire plan.

AWARENESS, PREPARATION AND ACTION ON THE IMMEDIATE LEAD UP TO THE SAMPSON FLAT FIRE

To understand people's immediate responses to fire, as well as longer-term preparation summarised above, residents were also asked to respond yes or no to a series of questions about the immediate lead up to the Sampson Flat fire and their preparedness for the ensuing events. Percentage responses (yes or no) are provided in Figure 18.

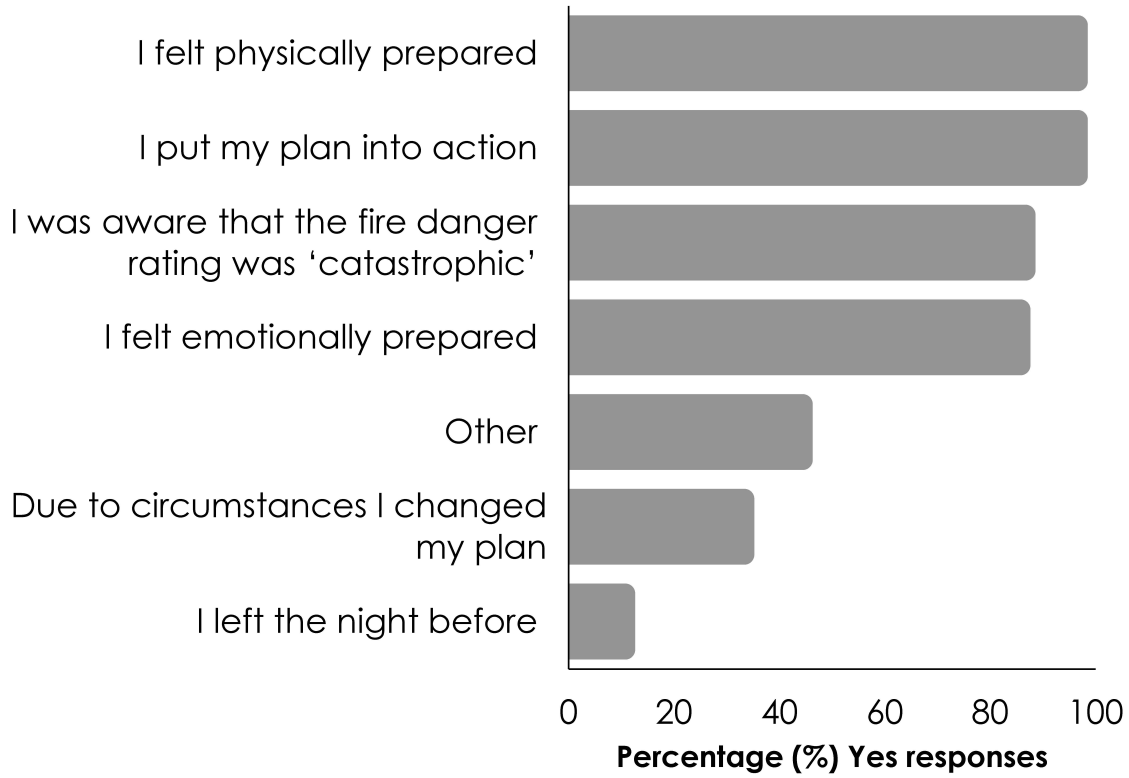


Figure 18.

Awareness, preparation and action on the immediate lead up to the Sampson Flat fire

Between 27 and 29 participants responded to these questions. Similar to the other residents in the fire-affected area who were not members of a group (see Project 1), the majority of people were aware that the fire danger rating was catastrophic, put their plan into action and felt physically prepared. As for Project 1 for non-group members, group members were less likely to feel emotionally prepared, however, notably the overall rating for emotional preparedness was much higher than that for residents.

Actions on the day of the Sampson Flat Fire

IMPORTANT ACTIONS ON THE DAY OF THE SAMPSON FLAT FIRE

Between 26 and 29 participants responded to these questions. The preparations of: monitoring warning messages on a battery operated radio (93.3%), contacting neighbours, family or friends in person or over the phone (76.7%), bringing indoors all doormats, outdoor cushions, hanging baskets etc. (76.7%), and shutting all doors and windows (76.7%), were identified as important by the majority of participants, as shown in Figure 19.

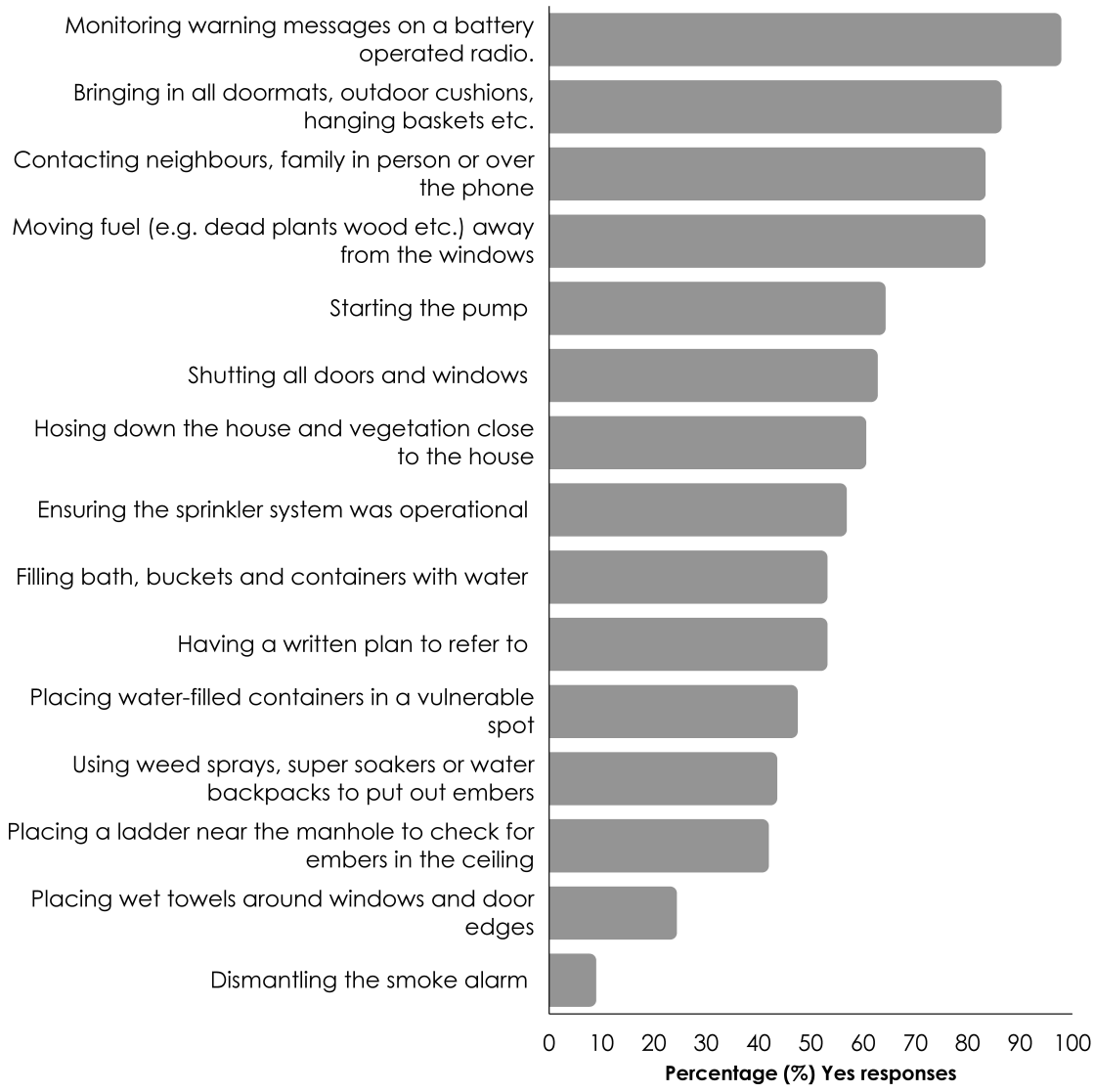


Figure 19.

Percentage yes/no responses to questions about behaviours which were important to residents on the day of the fire

Although it's not possible to undertake statistical comparisons with the residents in the fire affected area who were not members of a group, it is notable that although for non-members referring to plans was the second least important action on the day, for members it is 10th in the list. This coheres with the earlier finding that people in groups were more likely to develop a plan since becoming a member of a group.

PRE-, DURING AND POST-FIRE ACTIONS: THE INTERVIEWS

The qualitative interviews give further insight into the relationship between being in a Fire Safe group and people's pre-, during and post-fire actions.

Participants shared stories of how being a member of a group impacted on their knowledge and understanding of bushfire safety and risk, while others also felt that it impacted on their planning and preparatory behaviour. As found for

residents in Project 1, these interviews demonstrate that people in groups also felt less emotionally prepared.

Influencing knowledge and understanding of bushfire safety and risk

Participants shared that the Fire Safe group provided group members with a range of practical advice on preparing their properties in relation to things such as: pumps, sprinklers, ember-proofing and protective clothing. They noted that this increased their bushfire knowledge:

> *The point I really would like to get over is that these Community Fire Safe meetings are just so important and the knowledge that we gained from them, and this is applied to all of those, and I know that for a fact, all of us in our group…they are all the same as me – just been so well-informed. (GM5)*

In addition to advice, the groups were also seen as providing members with an opportunity to see how other people prepare their properties. One coordinator also attributed increases in bushfire knowledge to this aspect of the group.

> *The ones who do come along to the meeting obviously they pick up bits and pieces and also having it at my place they could see that you don't have to spend thousands and thousands of dollars on sprinkler systems. You can just clear back the scrub a little bit as much as you can first. You can have buckets and mops and things like that. You can go to a place and get a pump and a reasonably good fire hose and that will do a lot. Yeah, so a lot of people sort of learnt little bits and pieces from that especially the closer neighbours. They said that they'd really improved their knowledge of what they had to do. (GC1)*

Participating in Fire Safe group meetings also provided group members with a better understanding of the risk and realities of a bushfire. The first participant below discusses how going to meetings had changed their perception of the risk and the second participant comments that she learned from the meetings that the CFS will not always come and help you to fight a fire.

> *It was well and truly made quite clear to us in our fire group meetings that you can't run at the end; if you're going out, get out early. (GM7)*

> *And this is what you're taught, that if you stay to defend, you've got to presume you're doing it on your own. You can't sit back and say, "Oh well, there will be a unit here, and they will do it for me". You can't do that because they can't be everywhere. But a lot of people don't understand that. People said to me, "Well, didn't CFS come and help you?" and I said, "They did eventually", but they weren't sitting like we were waiting for the fire to come and then think, "Oh well, we'll fight the fire now for you". But this is all through the education, you see. (GM5)*

INFLUENCING ACTION

There were several examples in the interviews of how being a member of a group not only changed people's levels of understanding and knowledge of bushfire risk and safety, but also impacted their behaviour.

For one participant, the group was influential in modifying their plan, and also enacting this plan on the day of the fire:

> *We've lived here for 24 years now and we have never had a bushfire. Actually we didn't even know that we were in a bushfire risk area; well it was very low risk anyway and so it was very educational going to that [Meeting]. Especially seeing what some people had done, now my husband really was the one who sort of modified what they had done and made some decisions about what we would do and he created a bushfire plan and we talked about it, we enacted it. (GM2)*

Two other participants explained how the group had influenced their property preparations.

> *It certainly helped to prepare the property and to prepare ourselves in as much as I loaned out here the petrol generator and a petrol pump. We made sure that the house was cleared and we had a fire plan and all that sort of stuff. (GC5)*

> *We waited until about 20 minutes before the fire came to us, and that's when we started to water down, because at the fire meetings, community meetings, they say don't start watering down too soon because you're wasting your water, and it is hot. It dries out. So this is what we did. (GM5)*

Two participants noted that being a member of a Fire Safe group also influenced their communication activities on the day.

> ***And were you actually in contact with your group members ahead of the fire or during the fire at all?*** *Yeah. Some of the people live up my road, so they were being hit pretty well at the same time we were. But I sent text messages to people that were further on from the fire, so down on Millbrook Road and that, just to say if you're still home stay home, don't try and run now because you've got no idea what's coming your way, it's not good. (GM7)*

> *Yes, we'd all communicated on the fire tree. (GC5)*

In one neighbourhood, group membership also brought people together to assist each other during the fire, with people forming a patrol group to help others.

> *There was about four different four-wheel drives getting around with groups of three or four guys switching around. Patrolling up and down the street and helping other people start fire pumps and it was good seeing them all kick together. (GC2)*

However, as also reflected in the figures above, this type of collective action and assistance on the day was less common.

Neighbours and neighbourhoods were also important in the recovery period as well, although it was not always clear from the transcripts whether these were specifically 'group members' or rather people who lived in the neighbourhood. However, people identified that they shared resources, such as water; helped to feed livestock and brought up food for each other. The first participant below discusses neighbours using their water, the second participant reports that he fed his neighbour's livestock and the third mentions that neighbours brought food up for her.

> *Our dam was accessible more than others because of the first fire all our underground piping was all burnt with the garden and they had laid out big new piping for the dam, and so it was easier for them to come and get this hose thing that goes underground and fill up their water tanks on the back of their utes so the neighbours... the neighbours used it to set up their things to do spot firing with the firefighting things. (GM4)*

> *I learnt so much about feeding alpacas, chickens. Because we've got no stock but my neighbours did so it's like oh the phone where do I find this seed, how do I turn this tap on to fill the trough with water? (GC3)*

> *I mean I had neighbours dropping food parcels off to me, which was really lovely. (GM5)*

INFLUENCING EMOTIONAL PREPAREDNESS AND EMOTIONAL RECOVERY

Some members stated that the Fire Safe groups also provided emotional support. One of the group coordinators shared this story of the emotional support that being in the group can bring.

> *She said she thought it was about 20 minutes, she had no idea what to do. She was just a zombie. Couldn't look after her kids, couldn't do anything. Her husband's rushing round spraying water, all those things. She said "then it kicked in and then I was playing my part" but she said "the most important thing for me that day was being part of a group. I didn't feel alone. I knew other people in the area were all going through the same thing. You met with them. You knew what was all going on." She said the most important thing was being part of a group. (GC1)*

For two other participants, the Fire Safe group also provided an important opportunity to debrief and get emotional support after the fire, either face to face or by phone:

> *We had a debrief, and we had people coming to that, it turned out to be really a social function. […] And people that hadn't perhaps been to the fire group for ages, or we hadn't seen for ages, they all came. I think they just wanted to reconnect with people, and everyone wanted to see everyone and make sure you were all right, and funny stories. (GM7)*

> *So a number of us have got together and I get on very well with my neighbours on one side and we've had long chats on the phone about their situation and our situation, so we're giving each other some support in that respect. (GC3)*

However, in consonance with the figures above in relation to emotional preparedness, the influence of group membership on emotional preparedness and emotional recovery appeared less often in the interviews. Further, one interviewee, a group coordinator, identified a lack of emotional preparedness training in the groups:

> *I think that one of the things that was really missing from the training… was the emotional impact. […] For instance… we came across an elderly lady when we came back the second time. She was just gone. She'd stayed and defended. She's got all the kits. The boiler suit, the big boots. She's got a really sensible fire plan. She was just in a heap. She just hadn't coped at all emotionally. She coped physically, but she hadn't coped emotionally. I think that's because there's nowhere near enough emphasis put on… How are you going to cope when you watch your house burned down? […] and I know this old lady now is really depressed. (GC5)*

Although most groups met after the fire, either as a group, or as part of a larger neighbourhood meeting, not all groups did so.

> *Not really because one of the couples moved to [another town] so they are not here anymore; we used to see them at the community centre. The other couple work and the other couple I do see, we don't talk about those things so no, it had been a very low key thing really. (GM2)*

These findings suggest that, for some members, Fire Safe groups increase bushfire safety knowledge, and also influence preparation and communication behaviour. However, emotional preparedness was lower than physical preparedness. This suggests that, within the group meetings and training, emotional preparedness may not be emphasised as much as physical preparedness.

Neighbourhood and community networks

One of the key aims of the Community Fire Safe groups is to increase community connection, particularly in relation to community closeness, communication pre-, during and post fires, and in the support of more vulnerable members of the community.

COMMUNITY CLOSENESS

Of the 28 participants that responded to this question, 39.3% reported that they were quite close to their neighbours prior to being a member of a Community Fire Safe Group, while 42.9% reported that they were close to their neighbours since becoming a member, shown in Figure 18. While notable, this increase in rating of closeness was not statistically significant ($\chi^2(1)=7.31$, $p=0.121$).

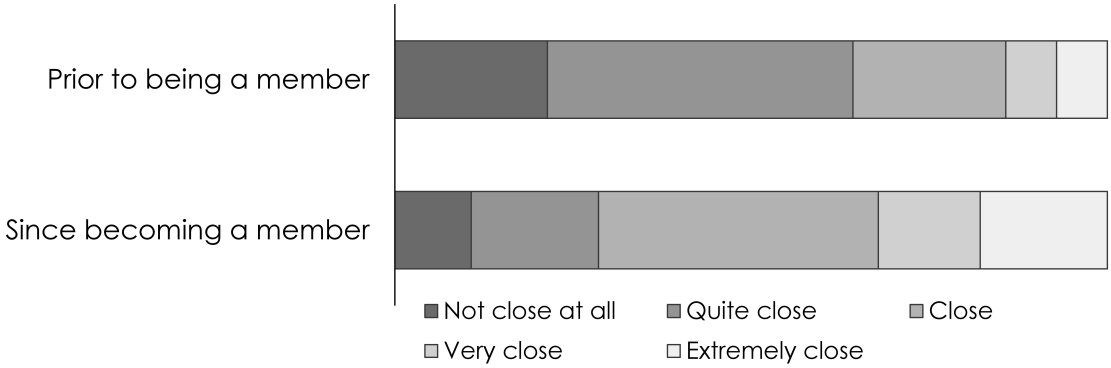


Figure 20.

Resident's perceived community closeness

COMMUNICATION

The survey indicated that 90% of participants were contacted by members of their group during the fire. Sixty per cent of people were contacted by their phone tree, 63.3% in person and 66% by telephone or message.[6] Forty per cent received a message from their Community Engagement Officer as well.

After the fire, of the 28 participants who responded to this question, half reported that their group had met since this time.

The qualitative research provides some further insights into communication and its relationship with being a member of a Fire Safe group. The interviews identified that groups use different methods to keep in touch with one another, such as Facebook, personal telephone calls, social meetings, and visiting other neighbours. One of the communication methods advocated as part of the Fire Safe program is the use of telephone trees. While telephone trees worked well for some participants, for other groups, telephone trees didn't work very well, as discussed by the participants below.

> *We did trial the idea of a fire tree where it was like I would call houses at each opposite end of the street and then in turn it was kind of suggested to them that they should then go and call their neighbour. But with a few trials the system just completely fell flat on its head because they would just go oh no I didn't have my maps, I didn't put my phone numbers in my phone or you can't get through to the first house. I said "try and write down*

[6] Respondents were able to indicate more than one way of communicating.

> *your next few neighbours down the line" and you might call two in a row and none of them answer and then it all just falls short. (GC2)*

> *I've got no qualms with ringing sort of pretty well everyone in the street but there's some sort of up one end might not ring someone at the other end or a certain neighbour they've got problems with. The problems experiences in the suburbs are just the same in the hills. Probably sometimes even a little bit more because some people sort of expect their privacy even a little bit more. (GC3)*

While large telephone trees were considered to be problematic by some participants, smaller telephone trees worked in some groups. These smaller telephone trees weren't just for fire but also allowed neighbours to communicate other issues, such as security.

> *We did originally from one of the first meetings have a telephone tree but that sort of fell through as far as a large street wise one. Once again subgroups have formed their own little telephone trees so if something happens – and it's not only for bushfire related. Obviously I push this for basically the general policing and neighbourhood watch type stuff where if we see an unusual car in the street then people in that little subgroup will ring each other, things like that. (GC5)*

The fire itself may present problems with keeping in touch with the group. One participant who lived in an area where there was no cell phone coverage was unable to keep in contact with her group during and immediately after the fire because the electricity went out, which meant that the landline telephone and internet were unavailable.

Different people also have different ideas about what the phone tree is for, for example one participant said:

> ***So the formal phone tree didn't really kick in?*** *It didn't have to. The formal phone tree is about alerting. (GM8)*

For this member, whilst the group could provide an additional alerting system, for those who stay and defend, the information they most needed was up to the minute details of the fire's movements. For this member, this information was provided via people outside of the immediate area who were able to access CFS communications, and relay this to those in the fire ground.

These findings suggest that phone trees are used by most members, but may need to be adapted for particular circumstances, and other communication is needed by those staying and defending.

VULNERABILITY

Prior to the Sampson Flat fire the majority of participants reported that they identified their own vulnerabilities and risks as well as other vulnerable people in the community.

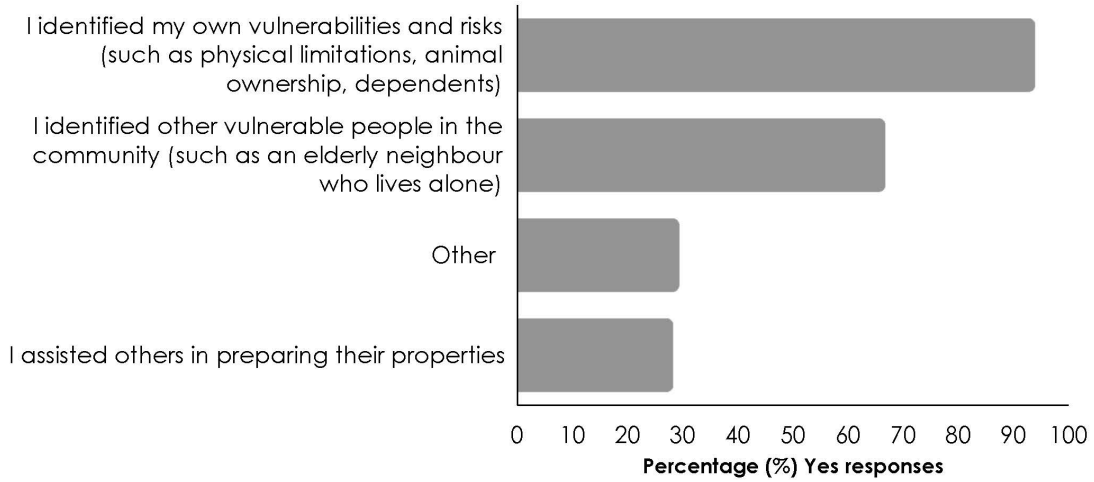


Figure 21.

Resident responses to measures of vulnerability prior to the Sampson Flat fire

As noted previously, the majority of people stayed in contact with their neighbours during the fire. Further, just over half of the participants assisted other community members, and almost half assisted a vulnerable person.

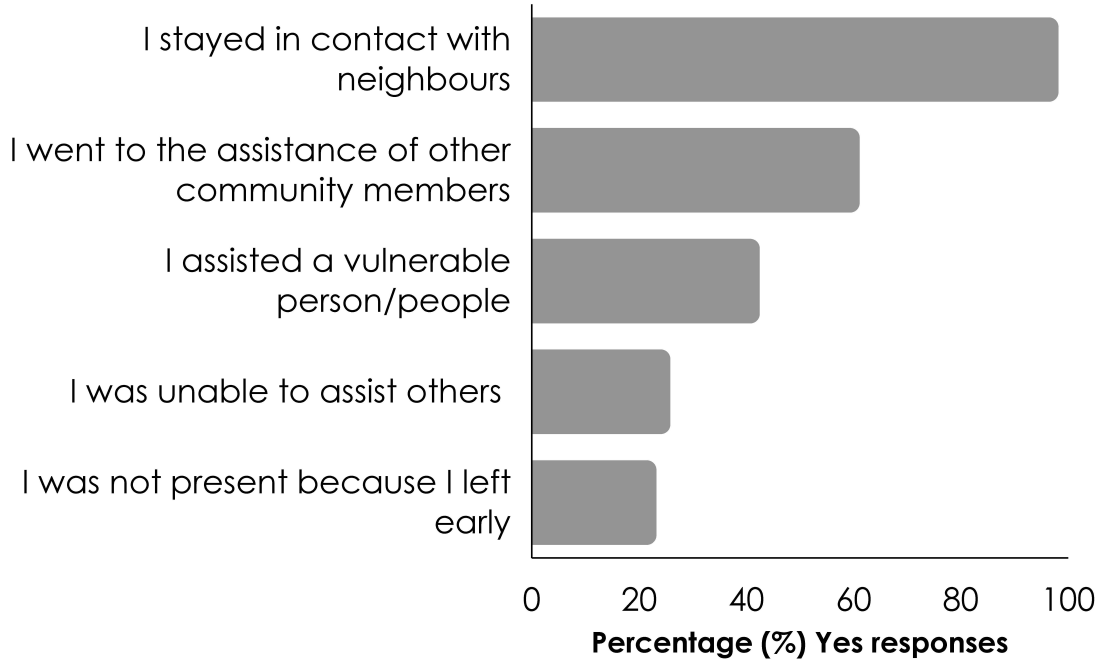


Figure 22.

Assisting others during the Sampson Flat fire

Although one group coordinator indicated that being in a group stimulated discussions about vulnerability and providing assistance to others, and another group coordinator specifically included more vulnerable neighbours as part of his work, none of the other interviews identified this as an aspect of their fire experience.

Whilst it isn't possible to test for statistically significant differences due to low response numbers, it is notable that, whilst just under twenty per cent of non-members assisted a vulnerable person, over 40% of Community Fire Safe group members and coordinators indicated that they assisted a vulnerable person.

Resilience

Between 25 and 28 participants responded to these questions.

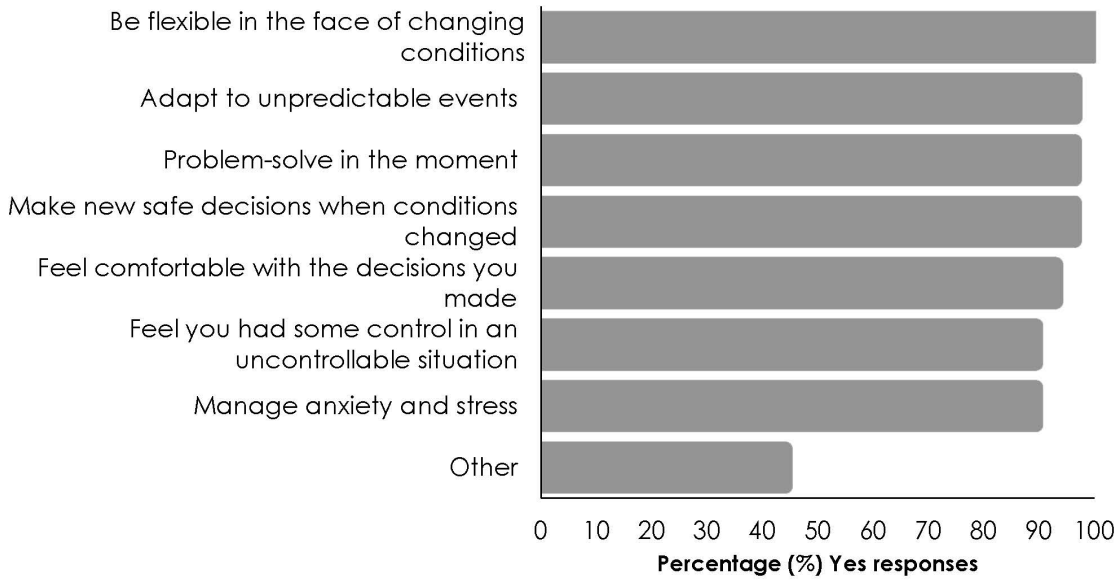


Figure 23.

Resident's self-reports of resilience

Between 83.3% and 90% of participants reported that they: felt comfortable with the decisions they made (86.7%); adapted to unpredictable events (90%); were flexible in the face of changing conditions (90%); problem-solved in the moment (86.7%); made new safe decisions when conditions changed (86.7%); managed anxiety and stress (83.3%); and felt that they had some control in an uncontrollable situation (83.3%).

These self-reports of adaptability and flexibility, and problem-solving and decision-making under pressure, are quite high, particularly in light of earlier findings from the survey and interviews in relation to the impacts of emotions such as anxiety on people's decision-making. It is likely that these questions did not adequately capture the aspects of resilience they were seeking to measure. It may be that they were too abstract and thus removed from

people's actual experiences and emotions prior to and during the fire. The overall conclusion discusses the measurement of resilience.

CONCLUSIONS (PROJECT 2)

Based on this small and unrepresentative data set, it is not possible to make generalisable conclusions about Community Fire Safe groups. However, we can note, in relation to the people represented here, that the program was considered to have increased people's knowledge and understanding of bushfire risk and safety, and membership also influenced member's planning, preparation and communication.

The findings also suggest that how Community Fire Safe groups operate is affected by individual and social factors, as well as the coordinator's style of coordination. Coordinators interviewed in this study could be grouped into two types of styles of coordination: 1) actively driving information, meetings and activities in the neighbourhood regardless of response; and 2) facilitating meetings and providing information if there is sufficient response from neighbours. Coordinators who were active drivers tended to adapt to people's needs for privacy, time constraints and different attitudes to fire risks by adapting communication, responding to group dynamics and trying new types of groups. Active drivers also focused on positives and on small changes, were pro-active in recruiting people moving to the area, and astutely used questions and formats which encouraged people to think more deeply about their plans. This suggests that further professional development support for coordinators in how to develop these skills might be helpful for future group development and maintenance.

The data also suggests that emphasising emotional preparedness as part of the program would be beneficial.

PROJECT 3: INFORMATION AND WARNINGS IN THE PERI-URBAN AREA

As well as the rural properties affected by the Sampson Flat fire, the fire also threatened people living in rural townships and in the peri-urban fringe. The CFS identified that these fire-affected and threatened towns included One Tree Hill, Vista and Paracombe, as well as Gould Creek, Greenwith, Golden Grove (part), Salisbury Heights (part), Yatala Vale, Fairview Park, Banksia Park, Tea Tree Gully, Upper and Lower Hermitage, Houghton, and Inglewood.

The CFS felt that those living in peri-urban areas may not have previously considered themselves to live in a fire-risk area. They may be less likely to understand emergency and warning messages, or to have previously accessed information about bushfire safety.

Given the potential gaps in people's knowledge and experience, Project 3 was designed to answer an important question for future bushfire safety campaigns and messaging in townships and peri-urban areas:

> Were the information and warnings provided to the communities impacted and threatened by the Sampson Flat fire considered (by those receiving those messages) sufficient to help individuals and groups make informed decisions about their safety?

To answer this question, this project collected data using both an online and telephone survey of houses in the fire-threatened townships and peri-urban fringe adjacent to the fire-affected area.

METHODS (PROJECT 3)

Data collection

Data was collected through both an online and telephone survey. A copy of this survey is attached as Appendix C.

Participants for the online survey were recruited by the CFS through their website, Facebook page, posters and fliers. The online survey was open from the 30th June 2015 until the 30th July 2015. Overall, 119 people responded to the online survey. Of these, one did not give permission to use their data and four did not complete any of the questions. They were removed from the analyses leaving a total of 114 participants who completed at least some of the questions of the online survey.

Participants for the telephone survey were recruited by McGregor Tan through cold-calling people in the following areas identified by the CFS as being of interest to this survey: One Tree Hill, Vista and Paracombe, as well as Gould Creek, Greenwith, Golden Grove (part), Salisbury Heights (part), Yatala Vale, Fairview Park, Banksia Park, Tea Tree Gully, Upper and Lower Hermitage, Houghton, and Inglewood. Using CATI, the telephone survey was carried out

between 23rd and 27th July, 2015. 205 people provided responses to the telephone survey, which had an overall response rate of 13.8%.

A total of 319 participants from both the online and telephone survey provided usable responses, however, not all participants responded to every question. The amount of participants that responded to each question is indicated as appropriate throughout the report.

Data analysis

The quantitative data was analysed using chi-squares[7]. Chi-square analyses are used when data is categorical, that is, a person either falls into one category (yes I did enact my plan) or another (no I did not). Chi-square analyses test for differences between these two categories and other variables (e.g. if you were in the category of 'yes I did enact my plan' were you also a male or female). Statistics are reported in percentages and/or in odds ratios (i.e. how likely is someone who falls in this category of enacting their plan to have also been male). These tests for associations between different variables, however, can only be conducted where there are more than five responses in a category. Where this was not the case, we have indicated that we were not able to ask particular questions of the data (e.g. there were less than five people who considered their knowledge of bushfire safety was very low, so no analyses could be run on this category).

Given that the data collected, despite the recruitment targeting people in the peri-urban areas of the fire-threatened area, included people who would not be classified as peri-urban or suburban (i.e. living on lifestyle, bush or agricultural blocks) the data were recoded into categories to allow for comparison between rural and standard residential living circumstances, yielding the following categorical variable:

NATURE OF THE PROPERTY (STANDARD RESIDENTIAL VERSUS OTHER)

Participants were coded as either living on a standard residential block, or as other (larger lifestyle blocks, bush blocks, agribusinesses or other). This showed that 46.8% of respondents reported living on a standard residential block, and 53.2% of respondents reported living on either a large lifestyle block, a bush block, an agribusiness or property, or an 'other' type of property.

The two types of property were compared throughout the analysis, i.e. standard residential was compared with other property types to identify these key differences between safety, action and resilience measures for each group.

[7] A chi-square χ^2 reports the difference between the two variables (i.e. $\chi^2 = 0.11$) and whether this difference was significantly different (i.e. $p<0.05$). The p value (statistical probability) indicates whether the difference is statistically significant, meaning that the findings are unlikely to have occurred by chance.

FINDINGS (PROJECT 3)

We have broken the data into four sections.

1. Demographics of the sample
2. Information seeking and preparation before the fire
3. Information and warnings on the day of the Sampson Flat bushfire
4. Information and warnings during the Sampson Flat bushfire

Demographics

Nearly two thirds of the sample was female (62.4%). Two hundred and ninety-six (296) participants provided their age. The average age was 52.5 years (SD ±16.3). The youngest participant was 18 years old and the eldest was 82 years old. The sample is skewed towards women and the middle-aged.

HOUSEHOLD MEMBERS

Two hundred and ninety-eight (298) people provided responses to 'Which of the following best describes your household'. The percentage of responses is given in Figure 24. Almost one third (30.1%) of respondents reported having dependent children in the household, with a further 15% of respondents reporting non-dependent children.

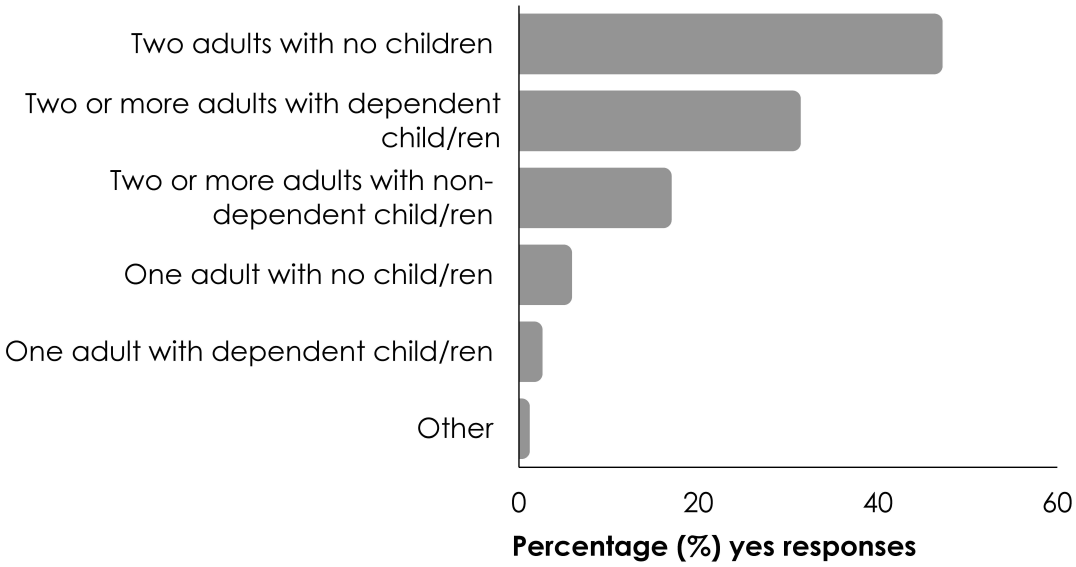


Figure 24.

Household demographics

HOUSE/PROPERTY DESCRIPTION

Two hundred and ninety-seven (297) participants provided responses to 'Which of the following best describes the house/property'. Responses are given in Figure 25. Almost half (46.8%) of participants reported living in a house on a standard-sized residential block. One participant indicated that the property was a retirement home.

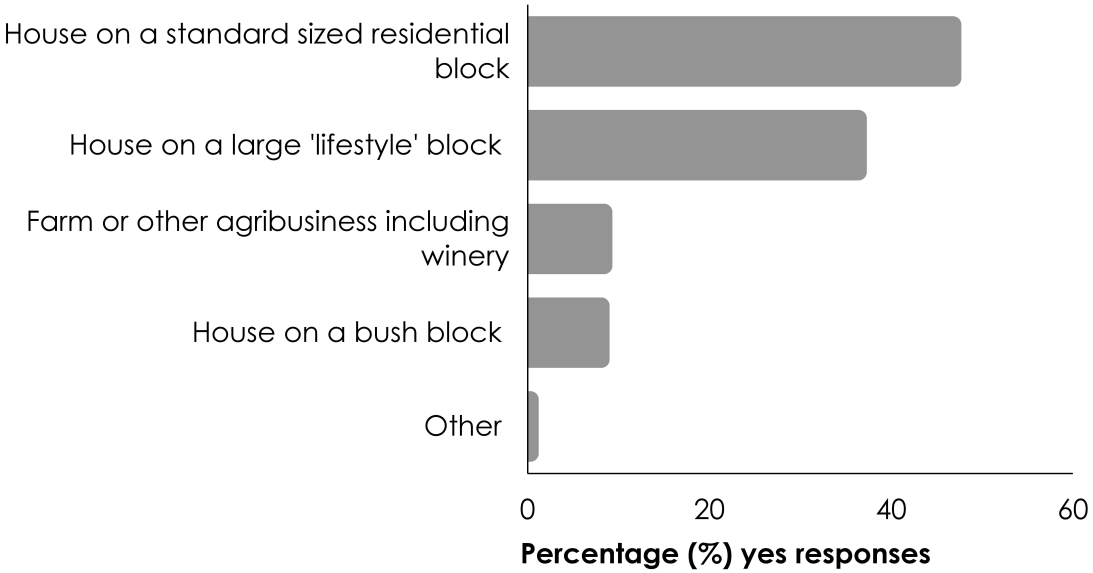


Figure 25.

House/property classification

Although this research project targeted people living in residential circumstances, people living on non-residential blocks were more likely to respond to the survey. This may reflect the lower levels of concern about bushfires in residential areas.

TIME AT CURRENT RESIDENCE/PROPERTY

Two hundred and ninety-seven (297) participants indicated how long they had been at their residence or premises. Participants had been at their house or property for an average of 17.0 (±2.1) years (range six months or less to 51 years). Figure 26 shows the percentages in each band of length of time at the residence or property.

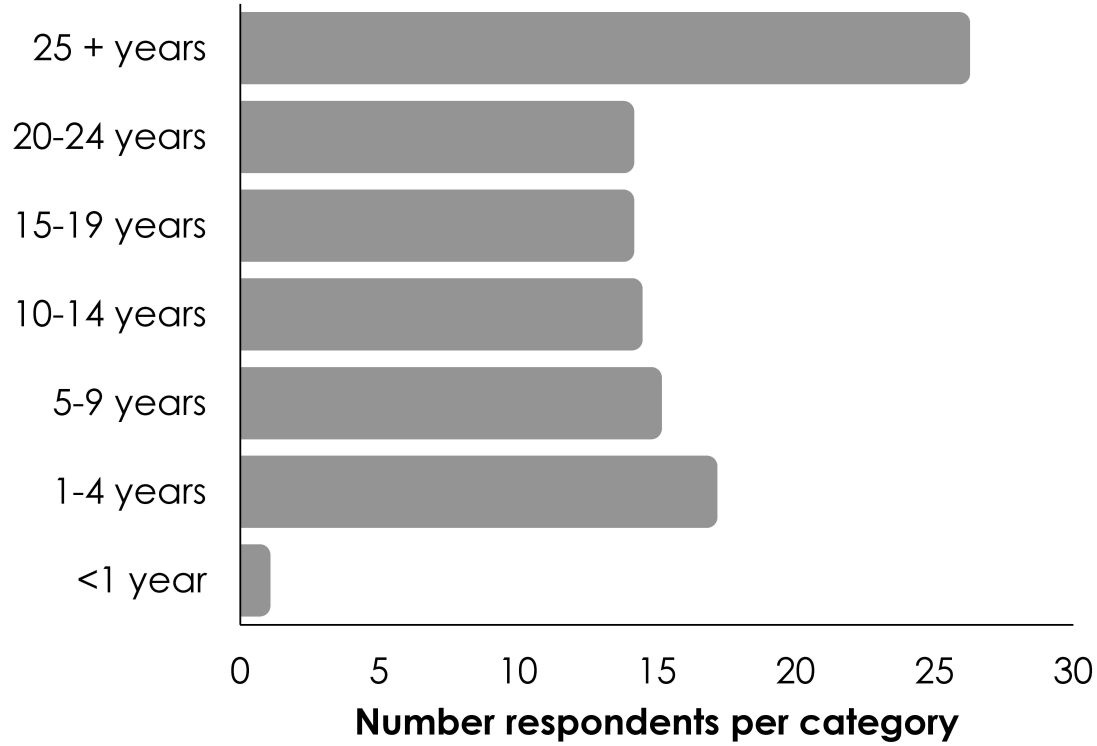


Figure 26.

Percentage of time in years that residents have lived in their current premises

HOUSEHOLD MEMBERS PRESENT ON DAY OF FIRE

Participants were asked to indicate who was home on the day of the fire. Nine pre-determined categories were provided, and participants were asked to respond 'yes' or 'no' to each category. Responses (in numbers) are shown in Figure 27. Over three quarters of respondents indicated that there were adults between the ages of 19 and 65 at home (78%). Greater than two thirds (69%) indicated that they had pets or livestock home on the day of the fire.

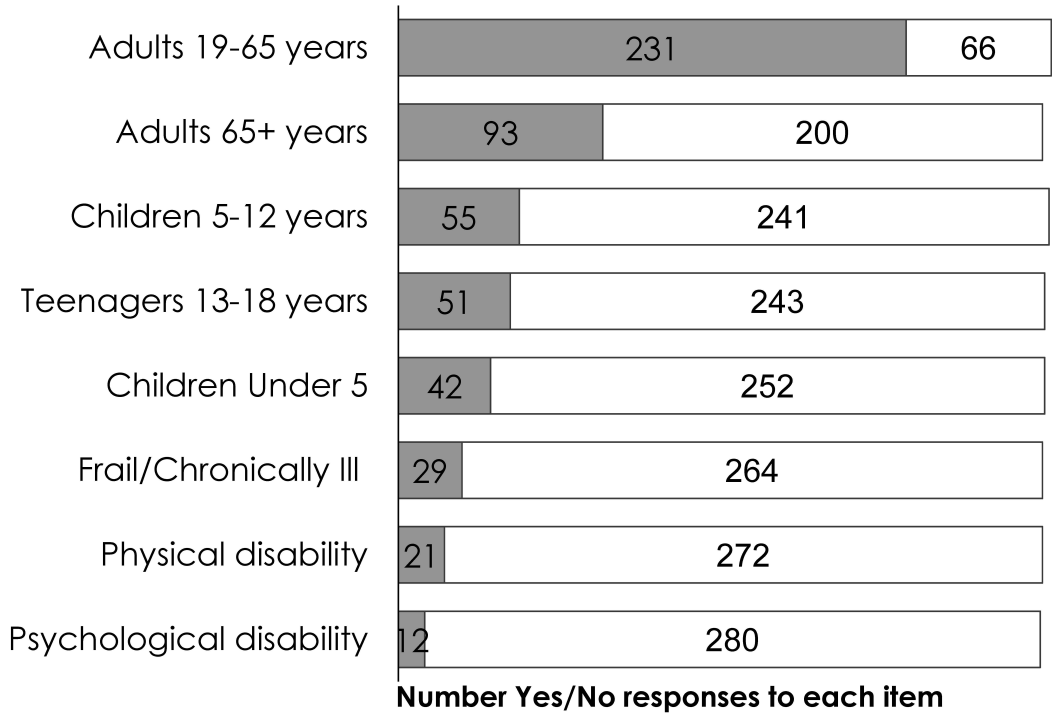


Figure 27.

Who was at home on the day of the fire?

IS ANYONE IN YOUR HOUSEHOLD PREVIOUSLY, OR CURRENTLY, A MEMBER OF A FIRE BRIGADE?

All participants responded to this question. The majority of participants (86%) did not have a member of their household who was currently or previously a member of a Fire Brigade, while 8% participants reported having a household member who was a previous member, and 6% had a household member who was a current member of a Fire Brigade.

HAVE YOU HAD ANY EXPERIENCE WITH BUSHFIRES IN THE PAST?

All participants responded to this question. Almost two thirds of participants had no previous bushfire experience (60%), while 40% participants had prior experience.

Those with prior experience were asked if they actively defended a property. Over a third (35%) said that they had actively defended a property, while 59% were observers.

HAVE YOU BEEN CONCERNED ABOUT BUSHFIRES IN YOUR AREA IN THE PAST? COULD YOU PLEASE RATE YOUR LEVEL OF CONCERN?

Three hundred and nine (309) people responded to this question. Of these, 64% said that they had been concerned about bushfires in their area in the past.

These participants also rated their level of concern. The breakdown of responses (%) is given in Figure 28. Nearly half of participants (45%) reported only being slightly concerned or not at all concerned about bushfire prior to the Sampson Flat fire.

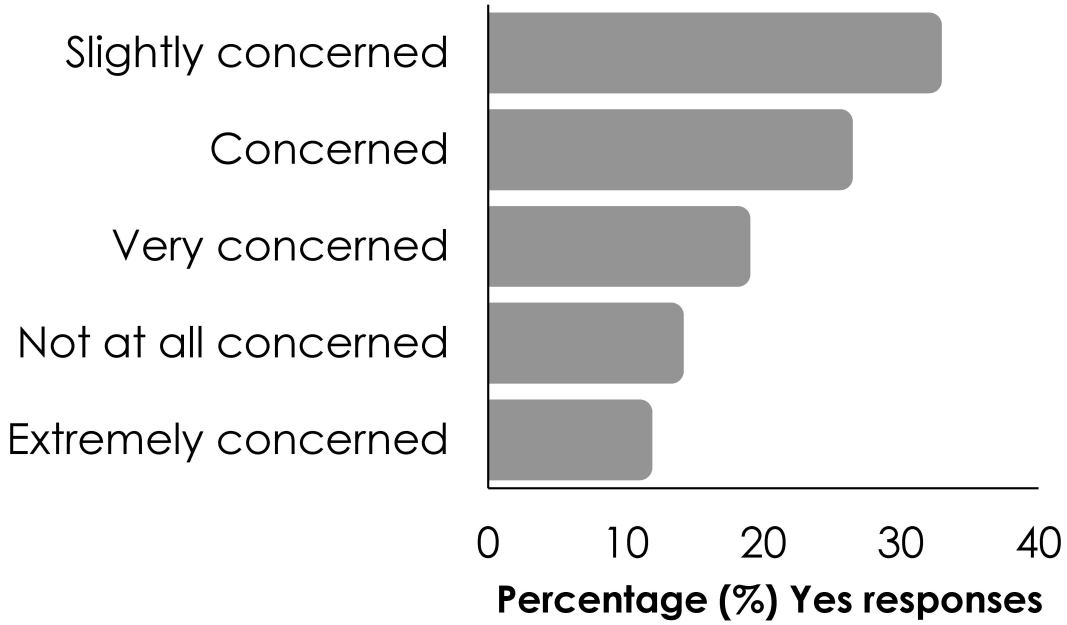


Figure 28.

Percentage responses for prior level of concern

The type of property was associated with concern regarding bushfires. Specifically, individuals who were living large lifestyle blocks, bush blocks and agribusiness had higher bushfire concerns, whilst there was an even split of concern versus no concern of bushfire for respondents living on standard residential blocks ($\chi^2(1, N=297)=21.0$, $p<0.001$). This is set out in Figure 29.

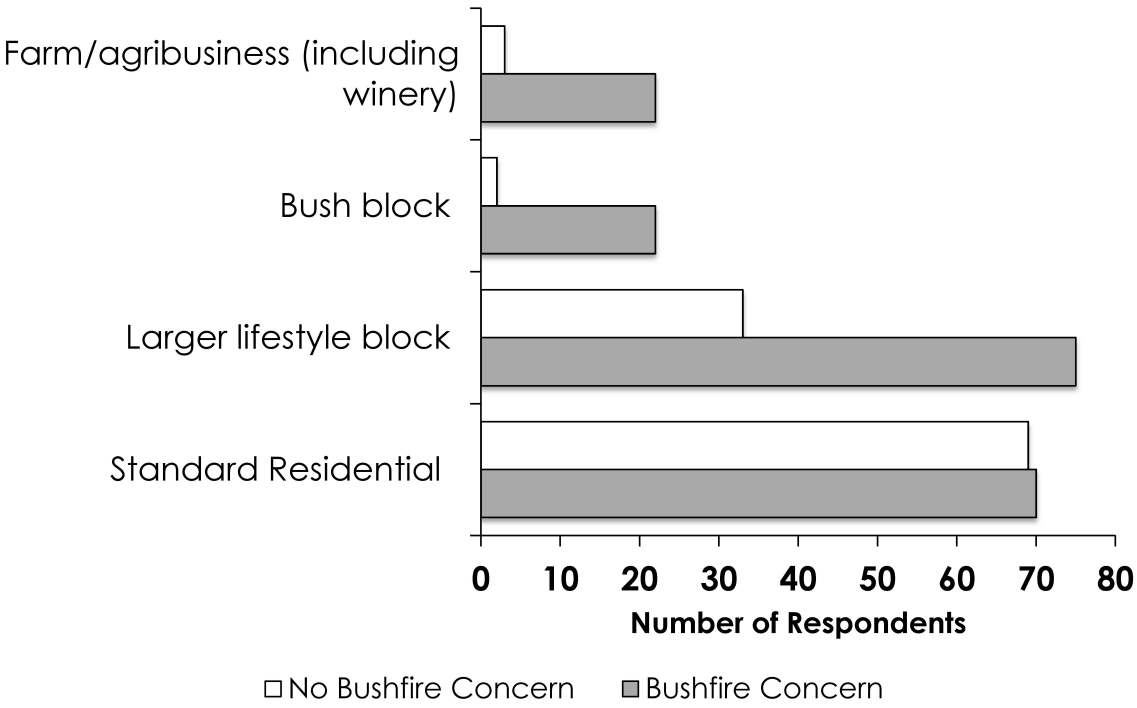


Figure 29.

The relationship between concern about bushfires and type of block

These findings indicate that those with residences on standard residential blocks were less likely to be concerned about bushfires.

INFORMATION SEEKING AND PREPARATION BEFORE THE FIRE

Participants responded to questions about information seeking and preparation for bushfires prior to the Sampson Flat fire. Responses to these questions are provided below.

To further interrogate the factors that may have contributed to information seeking and bushfire planning prior to the Sampson Flat fire, a number of questions were compared on the following factors:

1. The nature of the property (standard residential versus other – i.e. large lifestyle block, bush block, agribusiness)
2. Level of concern about bushfires
3. Demographic variables of gender and age (where possible due to numbers).

BEFORE THE SAMPSON FLAT FIRE, DID YOU SEEK ANY BUSHFIRE INFORMATION? WHERE DID YOU GET YOUR INFORMATION?

Three hundred and nine (309) participants responded to this question. Just over half of these (52.1%) had sought bushfire information prior to the Sampson Flat fire.

The participants were given a list of potential information sources and asked to identify those they had accessed prior to the fire. The number of participants who sought information from each of the sources is listed in Figure 30. The most common place for people to seek information was from family, friends and neighbours, followed by the CFS Guide to Bushfire Safety and the CFS website.

Participants who specified 'other' were asked to provide further details of where they sought information. Responses here included local council, Twitter, letterbox drops, TV and radio.

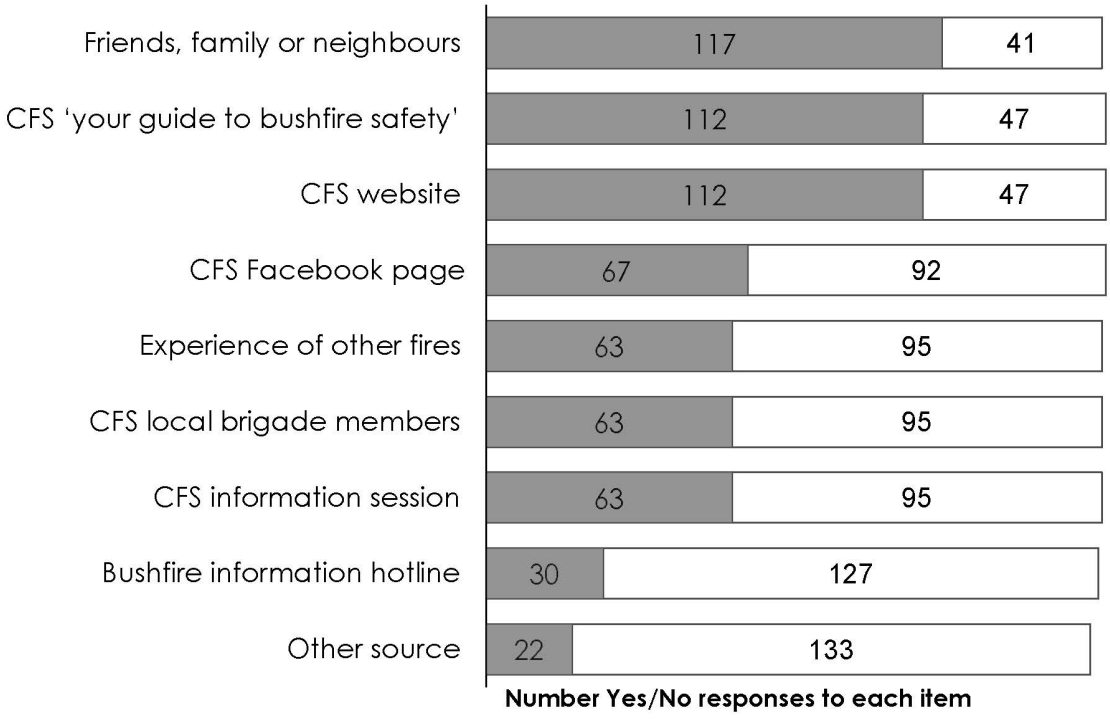


Figure 30.

Source of information accessed by participants prior to the Sampson Flat fire

Property type was related to seeking bushfire information ($\chi^2(1, N=297)=21.83$, $p<0.001$). Specifically, 62.6% of respondents on standard residential blocks reported that they had not sought bushfire information prior to the Sampson Flat fire. In contrast, 64.6% of respondents on other types of property (including

lifestyle and bush blocks) reported seeking bushfire information prior to the Sampson Flat fire.

Concern about bushfires was related to seeking bushfire information ($\chi^2(1, N=309)=18.9, p<0.001$). Respondents who were concerned about bushfire were more likely to seek bushfire information prior to the Sampson Flat fire (61.3% versus 38.7%).

These findings indicate that the most common sources of information on bushfires are social networks i.e. friends, family and neighbours, followed by official CFS sources, of which 'Your Guide to Bushfire Safety' was most often used. Those who were more concerned about bushfires were more likely to seek information, however, people living on standard residential blocks were less likely to seek bushfire information.

BEFORE THE SAMPSON FLAT FIRE, DID YOU HAVE A BUSHFIRE PLAN FOR WHAT YOU WOULD DO IF THREATENED BY A FIRE? WHAT WAS THE INTENTION OF THE PLAN?

Three hundred and eight (308) people responded to this question. The responses are shown in Figure 31. As can be seen, over a third of participants (38%) had a general mental plan, while 18% did not have a plan. Only 4% had a written and rehearsed plan, much lower than that recorded in Project 1 (written: 25.5%, rehearsed: 23.4%), Project 2 (written: 24.1%, rehearsed: 24.1%) and the 2014 SA fires research (10%).

The type of plan is related to living on a residential as opposed to rural block, with those living on residential blocks less likely to have a clear mental plan and more likely to have no plan. Of the 53 respondents who reported having no bushfire plan, 67.9% were living on standard residential blocks, compared with 32.1% living on other property (including lifestyle and bush blocks). Of the 11 respondents who reported having a written and rehearsed plan, 81.8% were living on other property types, compared with 18.2% living on standard residential blocks. A similar pattern was found with clear mental bushfire plans, with 68.1% of respondents living on other property types reporting a clear mental plan compared with 31.9% living on standard residential blocks.

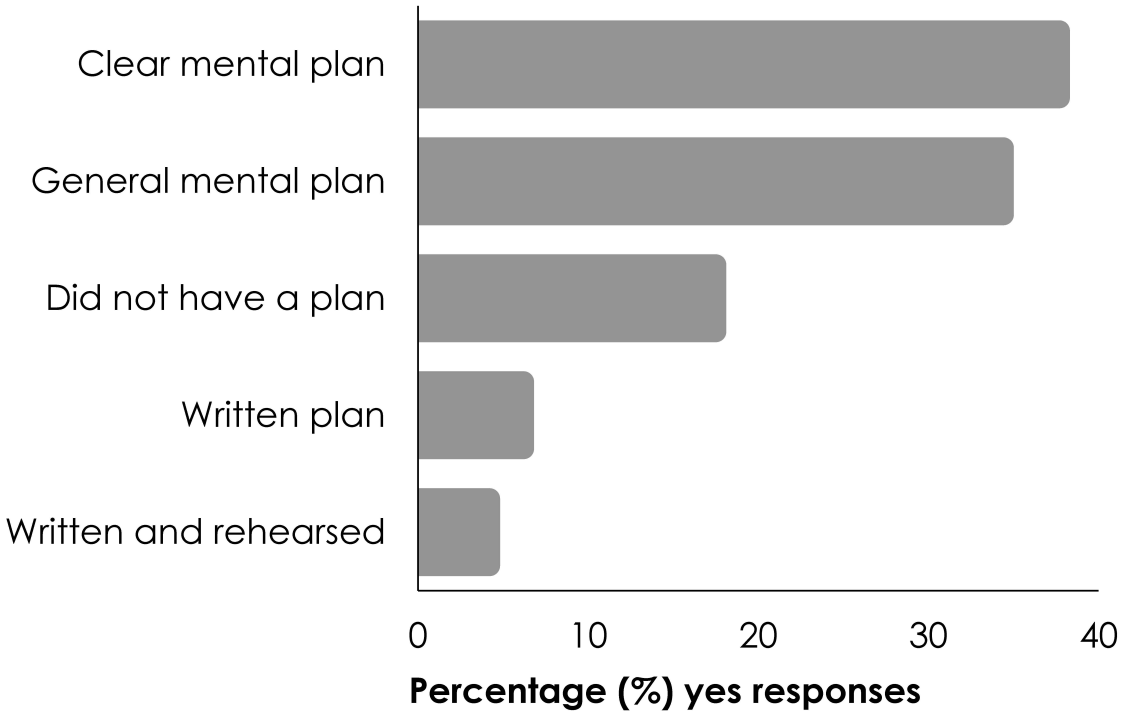


Figure 31.

Respondent bushfire plans prior to the Sampson Flat fire

Those who were more concerned about bushfires were more likely to have a written and rehearsed plan, a written plan or a clear mental plan, than those who were not concerned. Respondents who expressed concern about bushfire risk prior to the Sampson Flat fires consistently reported more planning for bushfires. For example, 92.3% of written and rehearsed plans were from individuals who reported concerns about bushfire risk prior to the Sampson Flat fire, and 68.4% written plans were reported by those who reported concerns about bushfire risk. More respondents with concern about bushfire risk reported having a clear mental plan (74.1%) than those who did not have concerns (25.9%). Similarly, more respondents with concern about bushfire risk reported having a general mental plan (59.4%) than those who did not have concerns prior (40.6%).

These findings indicate that, as in Project 1, higher concern is related with developing a bushfire plan. However, people living in residential areas are more likely not to have a plan, a clear mental plan or a written plan.

The 254 participants who had some kind of a plan were asked to indicate the intention of the plan. This is set out in Figure 32. Of concern is that the majority of participants (58%) said that their plan was to wait and see how bad it was before deciding to leave, whilst 51% said that their plan was to leave. Only 14% said that their plan was for everyone to stay and defend, while 22% said that their plan was for some people to leave early and others to stay and defend.

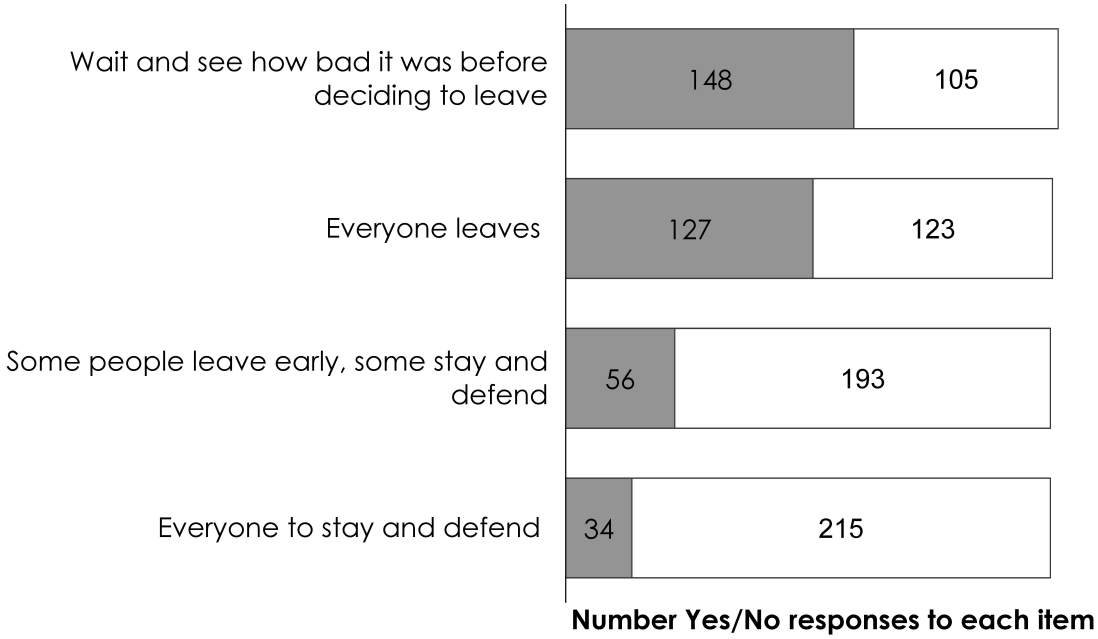


Figure 32.

Intentions of bushfire plans

These findings suggest that whilst just over half of the people had made a plan to leave or stay and defend, the majority of participants had made a plan to wait and see that could potentially expose them to late evacuation and the dangers of this.

Information and warnings on the day of the Sampson Flat Bushfire

Participants responded to questions about information and warnings on the day of the Sampson Flat fire. Responses to these questions are provided below.

THINKING BACK TO THAT TIME OF THE FIRE, DO YOU RECALL ANY SPECIFIC CLUES OR WARNINGS ABOUT THE FIRE RISK?

Participants were invited to respond 'yes' or 'no' to each choice. The number of people who responded 'yes' or 'no' to each statement is presented in Figure 33.

As can be seen in Figure 33, over 80% of participants recalled a Total Fire Ban and/or hot weather/high winds. Only around half of respondents recalled SES Extreme Heat warnings.

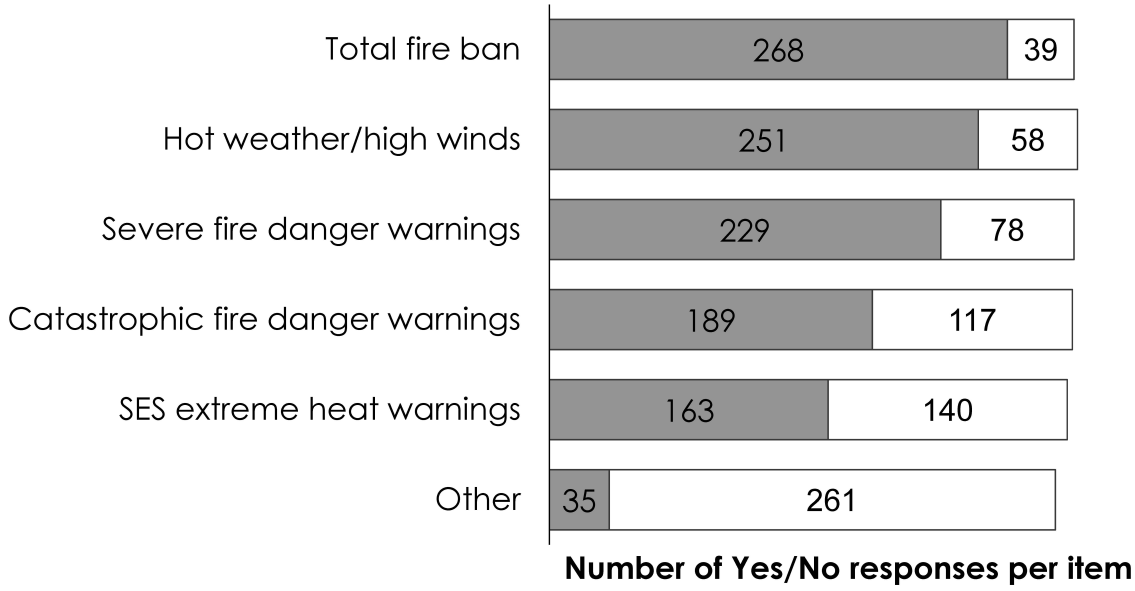


Figure 33.

Clues or warnings identified by respondents on the day of the Sampson Flat fire

These findings suggest that the most commonly recalled cues which alerted people to fire risk were the total fire ban and the weather conditions.

ON THE DAY OF THE FIRE, HOW DID YOU FIRST FIND OUT ABOUT THE BUSHFIRE THREAT?

Participants were asked to respond 'yes' or 'no' to each of the possible responses. The number who responded 'yes' and 'no' to each source is listed below in Figure 34. The majority of people first found out about the fire when they saw smoke (73%).

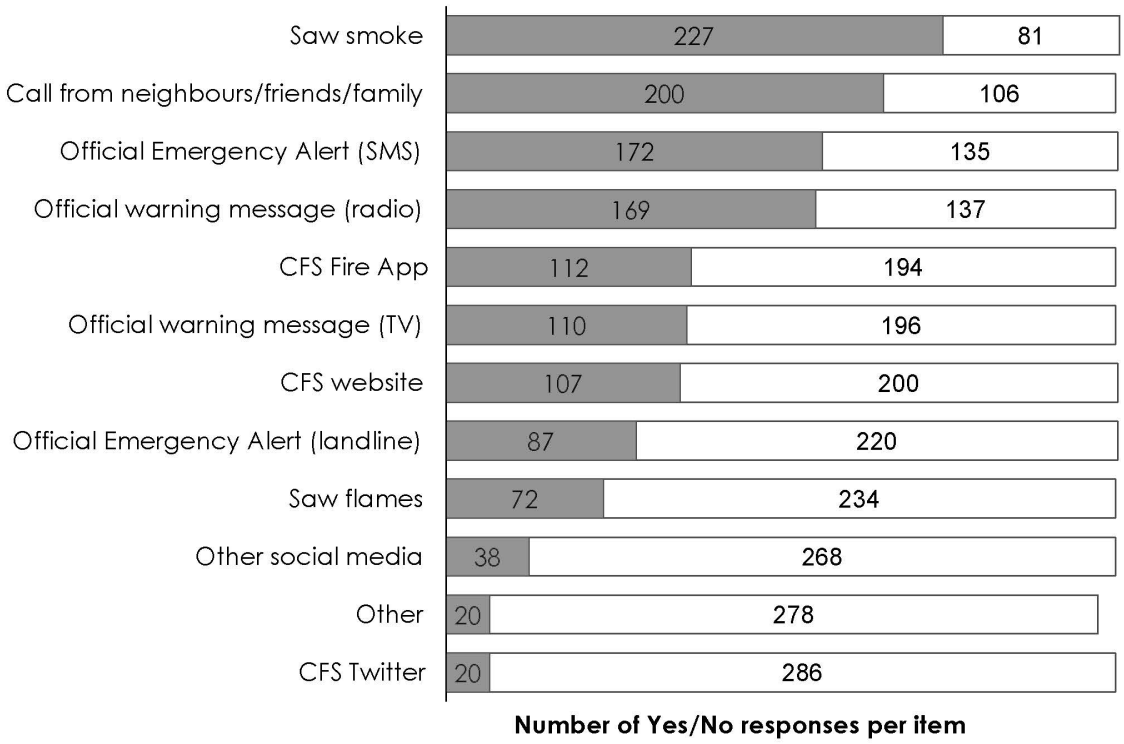


Figure 34.

How did people find out about the fire?

These findings indicate that, on the day of the fire, the majority of people were first alerted to the fire by seeing smoke. However, official CFS sources of information – the emergency alert, radio warnings, fire app and website – were also significant sources of information.

To provide context for the results of the public interpretation of warning messages, the following example is provided of the messages which were directed to the urban interface during the height of the fire. The official CFS message which was issued to the public on 2nd January 2015 at 11.52 pm was:

ELECTRONIC & BROADCAST MESSAGE *(CFS Website, Emergency broadcast partners (radio, television), CFS Social Media (Facebook, Twitter), Email subscription)*

> ***EMERGENCY WARNING FOR A BUSHFIRE BURNING UNDER SEVERE WEATHER CONDITIONS***
>
> *CFS advises that a serious bushfire is burning out of control at SAMPSON FLAT in the Southern Mount Lofty Ranges near Hannaford Hump Road and Snake Gully Road.*
>
> *The SAMPSON FLAT fire is travelling in a Westerly direction towards GOLDEN GROVE, FAIRVIEW PARK, BANKSIA PARK and TEA TREE GULLY. There is a risk to lives and homes.*
>
> *The uncontrolled fire is burning in Scrub.*
>
> *Check and follow your bushfire survival plan. Take shelter when the fire arrives and protect yourself from the fires heat.*
>
> ***Only leave now if the path is clear to a safe place.***
>
> *You should not enter this area as the roads may not be safe.*
>
> *Well prepared and actively defended homes can offer safety.*
>
> *Stay tuned to this radio station on a battery-powered radio for updates.*
>
> *For information about bushfires, check the CFS website www.cfs.sa.gov.au or call the Bushfire Information Hotline on 1300 362 361.*
>
> *Repeating, CFS advises that a serious bushfire is burning out of control at SAMPSON FLAT in the Southern Mount Lofty Ranges near Hannaford Hump Road and Snake Gully Road.*

CFS then used the national Emergency Alert system to distribute the warning to mobile and landline phones.

SMS *(Emergency Alert service address and location-based distribution)*

> *CFS Bushfire Emergency Warning A bushfire is burning near Sampson Flat Take shelter now and listen to ABC radio or call 1300362361 for more information.*

VOICE MESSAGE *(Emergency Alert service address based distribution to landline phones)*

> *Emergency. Emergency. C F S Bush fire Warning. An extremely dangerous bush fire is burning near Sampson Flat. If you are in this area, shelter in a solid structure immediately and close all doors and windows. You should not leave or enter this area as the roads may not be safe. Listen to the ABC on a battery powered radio, or visit, W W W dot C F S dot S A dot gov dot A U or call 1 3hundred, 3 6 2 3 6 1*

Participants who had first found out about the fire through these official CFS channels were asked to indicate what they thought that message required them to do.

None of the participants indicated that they understood the message as requiring them to take shelter in place, i.e. in their home. Rather, respondents understood the message in one of six ways.

1. To prepare to evacuate
2. To evacuate immediately
3. To prepare their property
4. To enact their bushfire plan
5. To be alert for fire danger and further fire messages
6. To watch and wait, or watch and decide

Most commonly, respondents understood the messages as requiring immediate evacuation or to prepare for evacuation. But there was a diversity of interpretations, as this participant indicates:

> *The sms I received on the Saturday could have been clearer. Different people I spoke to following the incident interpreted it in different ways – I didn't understand it to mean "evacuate now" but others did.*

These findings suggest that people did not understand the emergency warning as meaning to shelter in place.

WHEN YOU HEARD THAT A FIRE WAS IN THE AREA, WHAT WERE YOU MOST CONCERNED ABOUT?

Participants were asked to indicate what they were most concerned about when they heard about the fire. They were able to select any concerns that applied. Three hundred and three (303) people responded to this question.

Concern about the fire burning one's home was the most common concern, followed by dying, but also of leaving home. Almost half (46%) were concerned about the fire burning their home, while 22% were concerned with leaving their home. A total of 22% were concerned about being injured or dying in the fire, while 16% were concerned about smoke inhalation.

WHAT DID YOU DO WHEN YOU FOUND OUT THAT THE FIRE COULD THREATEN YOUR AREA?

Participants were asked to indicate what they did when they found out that fire could threaten their area. They were asked to respond yes or no to each option. The majority of people contacted friends, family and neighbours and gathered valuables, and sought further information through TV and radio.

However, a significant proportion also indicated that their response was to wait and see what would happen. Responses are shown in Figure 35.

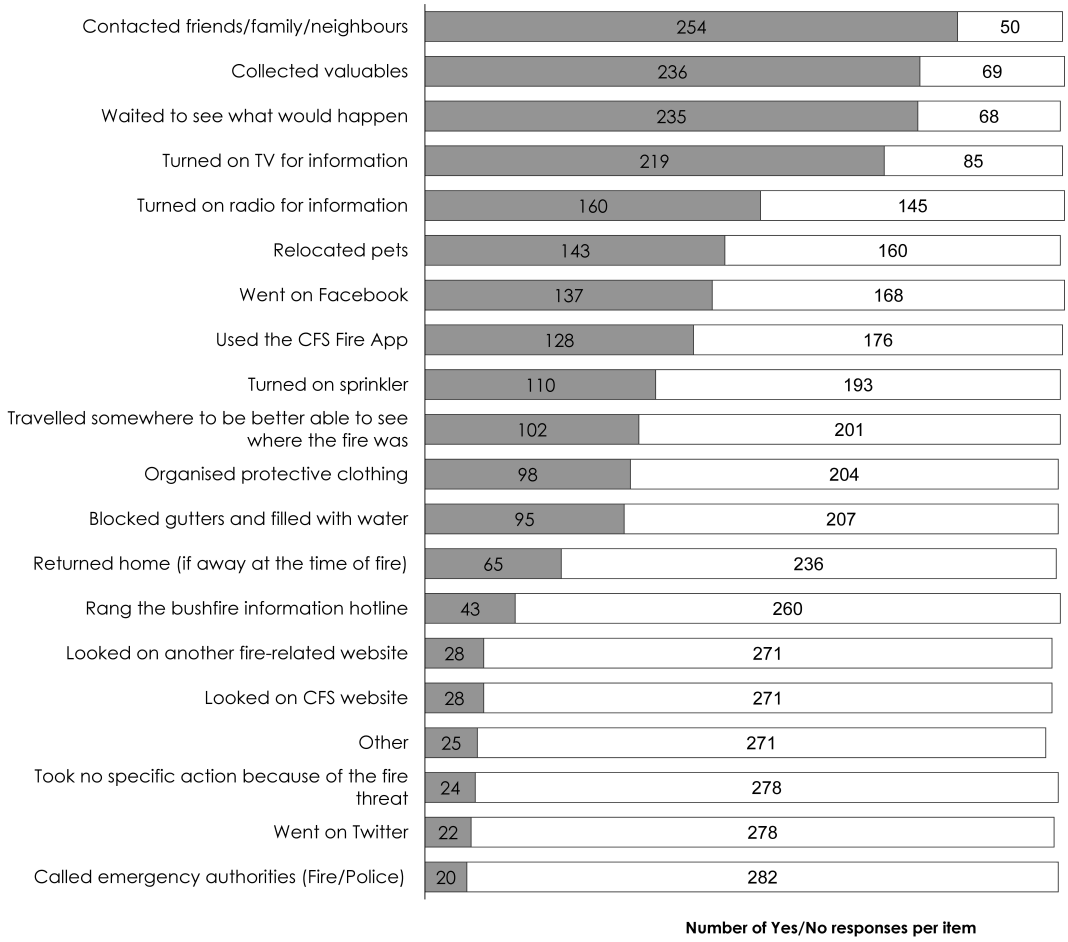


Figure 35.

What did people do when they found out the fire could threaten their area?

Property type was related to people's initial responses when they found out about the fire threat. Those not in a residential area (i.e. living on large lifestyle, bush or farming blocks) were:

- 4.60 times more likely to turn on a sprinkler ($X^2(1)=33.57$, $p<0.001$)
- 2.04 times more likely to have relocated pets ($X^2(1)=9.26$, $p=0.002$)
- 3.44 times more likely to have blocked gutters and filled them with water ($X^2(1)=21.30$, $p<0.001$
- 2.41 times more likely to have travelled somewhere to be better able to see where the fire was ($X^2(1)=11.94$, $p=0.001$)
- 2.14 times more likely to have returned home if they were away at the time of the fire ($X^2(1)=6.49$, $p=0.011$

They were less likely to go on social media such as Facebook ($X^2(1)=9.51$, $p=0.002$ or twitter ($X^2(1) =8.06$, $p=0.005$.

These findings suggest that, for people living in residential areas, there may be particular gaps in their knowledge about how to respond to bushfires specifically for an urban environment. Significant gaps were: blocking and filling gutters, and relocating pets.

Information and warnings during the Sampson Flat bushfire

HOW MANY COMMUNITY MEETINGS HELD IN ASSOCIATION WITH THE SAMPSON FLAT FIRE DID YOU ATTEND?

Community meetings were not a source of information for most people. However, those who did attend found the meetings very or extremely useful.

Three quarters of respondents had not attended any meetings in regards to the Sampson Flat fire (75.5%). Just over 10% (12.9%) attended one meeting and 11.6% attended more than one meeting.

Of those who attended, seventy-four (74) people gave an indication of how helpful they found the meetings. The distribution of responses as a percentage is shown in Figure 36. Over half (55.4%) found the meetings either very useful or extremely useful.

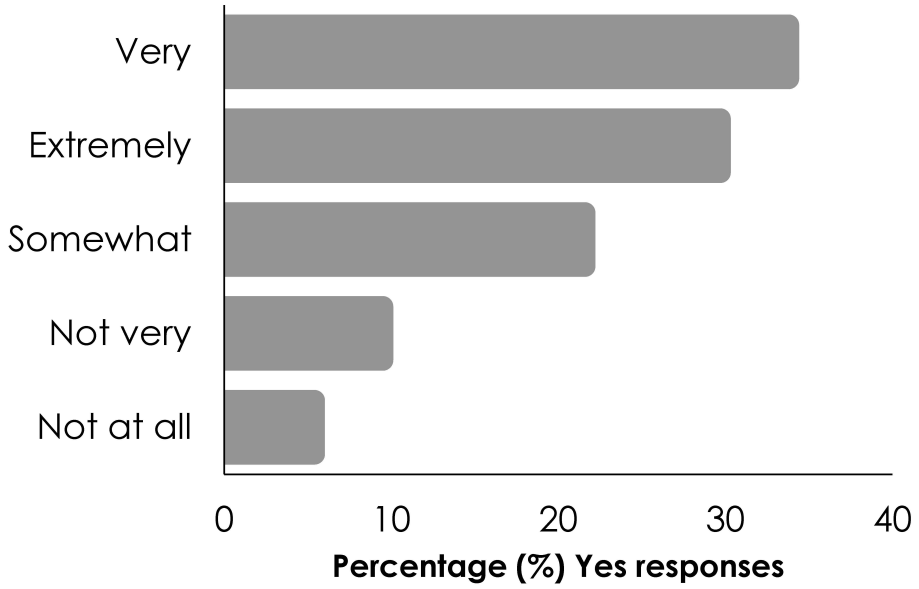


Figure 36.

Respondents' perceived usefulness of community meetings

These findings suggest that, although community meetings were not attended by everyone affected by a fire, they were a useful source of information for those people who do attend.

WHAT ADDITIONAL INFORMATION WOULD YOU HAVE FOUND HELPFUL DURING THE FIRE?

Two hundred and seventy two (272) people responded to this open-ended question. The majority of responses indicated that respondents were happy with the amount and type of information they received, or felt there wasn't anything further that could have been provided.

Of the other responses, the additional information people would have found most helpful included:

a) Wider coverage of the SMS alerts, and/or the inclusion of more landline alerts. This was an issue for some people who did not receive the SMS alert. For example,

   Even though I lived in a suburb that was threatened by the fire, I did not receive a text message.

   And for this person who was concerned about the alerts for people in retirement homes:

   My grandmother who was in the Golden Grove Retirement Village was not aware of the situation.

b) More information on where to evacuate to, including evacuation with pets, and information on when people could return home. For example,

   There was confusion in the neighbourhood about whether to evacuate or not, and if so, where.

   Once we were told to evacuate our homes via landline & SMS, we didn't know where to go. We had a car full of cats, dogs & people & nowhere to go. We only found out a couple hours later we could have gone to the Golden Grove rec centre, but told our animals weren't welcome.

c) More detailed information, specifically in relation to:

   a. The name of the fire, not everyone was familiar with Sampson Flat

   b. Being able to access maps to understand more clearly the fire's direction and which streets were under threat

   c. Knowing the distance of the fire from the particular suburb/street

   d. Including the names of streets. For example,

   Information was not detailed enough, it often only mentioned suburbs, but not always streets and direction of fire.

These findings suggest that the main gaps which people perceived in their information was in relation to evacuation and details of the fire itself – its name and current location by street. There were instances where people did not recall receiving the emergency alert by landline or SMS.

IN THE EVENT OF A FUTURE FIRE IN YOUR AREA, WHICH OF THE FOLLOWING ORGANISATIONS WOULD YOU MOST LIKELY TURN TO FOR RELIABLE INFORMATION?

Participants were asked from which organisations they would likely seek reliable information in the event of a future fire. Two hundred and ninety-eight (298) individuals responded.

As set out in Figure 37, the overwhelming majority (96.6%) of respondents identified the CFS as a primary source of reliable information, followed by the SES (60.4%) and SAPOL (42.6%).

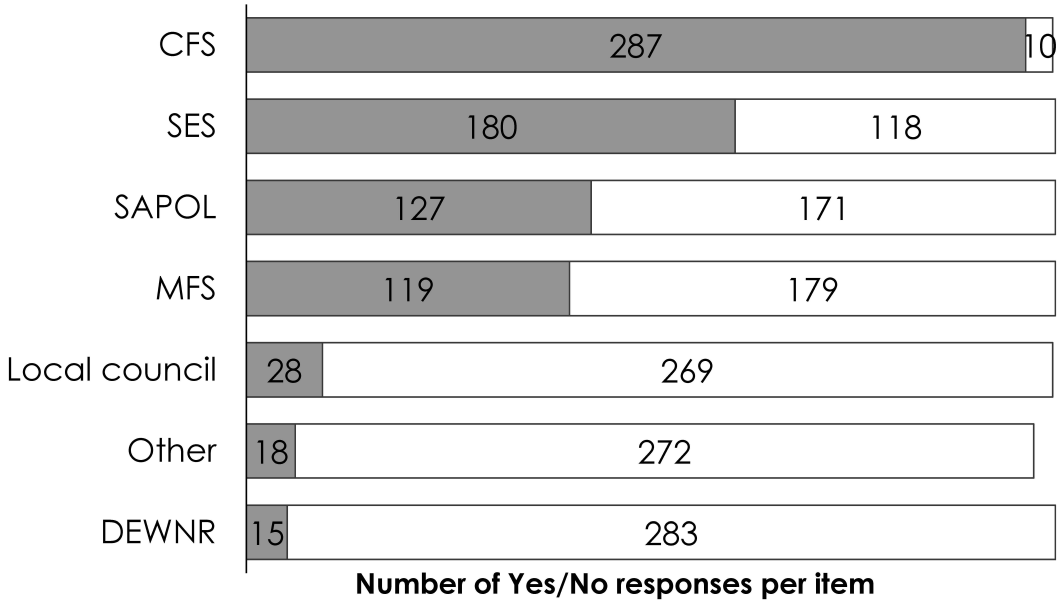


Figure 37.

Reliable sources of information for future fires

This finding suggested that the CFS is considered to be the most reliable source of information in relation to bushfires. People are most likely to turn to them in the event a future fire.

CONCLUSIONS (PROJECT 3)

This report gives insights into households in townships and peri-urban areas in the fire-threatened areas adjoining the Sampson Flat fire scar. It compares suburban/residential households and those living rurally.

The generalisability of the findings to young and elderly people, and to men, may be limited, as the sample was skewed towards women and people in their 40s and 50s. Although the study was targeted to people in residential areas, there were fewer respondents from residential areas than rural areas, and may reflect the lower levels of concern in these areas.

As expected, those living in more suburban/residential conditions were less concerned about bushfires, less likely to seek information prior to the fire, and less likely to have a bushfire plan (either mental or written).

They were also less likely to undertake preparatory activities such as turning on sprinklers and blocking and filling gutters or relocating pets.

Although the official CFS warning message on the day of the fire disseminated through SMS, landline, ABC radio or the CFS website was to take shelter in place, it was most commonly understood as requiring evacuation. There seems to be some confusion about the meaning of warning messages, evidenced by the considerable diversity in people's interpretations of these messages, ranging from 'wait and see' to 'leave now'.

Possibly related to this are people's concerns about evacuation. Leaving home was the second greatest concern for the participants. Further, a number of people indicated that the information they would have found most useful was regarding evacuation centres, particularly evacuation with or relocation of pets. This reflects that over half of the participants had pets or livestock.

Given these findings, those living in townships and peri-urban areas along the fringes of the Adelaide Hills may be a population which the CFS would like to target to increase bushfire awareness. Indeed, given that the CFS official sources of information were amongst the most often sourced, and that the CFS was the group to whom people would seek further information in a future fire, the CFS is likely to be well received in this area and its education campaigns carry some weight.

Based on the findings here, this information/education may usefully focus on:

1. Education about bushfire risk and safety and how it applies to people in townships or peri-urban areas (given that concern about bushfire and bushfire planning was lower for those on residential blocks)
2. Education in relation to smoke density and direction (given this is, for most people, how they initially become aware of a fire)

3. Education about planning property preparation in an urban area such as clearing areas and using water to protect properties (given that people in residential/suburban areas were less likely to do this)
4. Education in relation to leaving one's property and Bushfire Safer Places, as well as information about how Emergency Relief Centres are activated and what services they may or may not provide (based on the large number of responses indicating that people did not know where to go, and that the second highest concern was leaving their home)
5. Education about warning messages (given that most people did not understand the message to mean 'take shelter').

Internally, the findings suggest further discussion on how to identify and name fires and map their locations, as not everyone knew where Sampson Flat was.

OVERALL CONCLUSIONS

This research originally sought to a) evaluate the outcomes and impacts of Community Fire Safe groups in pre-, during and post-fire safety and b) evaluate the usefulness of bushfire messaging for people living in peri-urban areas. Although the research on peri-urban areas ran as planned, that on Community Fire Safe groups did not. The research protocol was thus modified in response to the low numbers of recruits from Community Fire Safe groups. The research thus was split into two separate-but-linked reports. The first focused on the factors which influenced the pre-, during and post-fire safety of people (who were not members of a Community Fire Safe group) living in the fire-affected and threatened area of the Sampson Flat fire. These factors included demographic factors such as age and gender, as well as people's concern about and awareness of bushfires and their community connections and networks. The second used the qualitative data from interviews, together with descriptive statistics from the small number of surveys, to consider not only the impact of groups on bushfire safety, but also how the groups operated and what was most helpful to members.

A summary of the findings for each of these projects is presented in the Executive Summary of this report, as well as the conclusion section of each.

LIMITATIONS AND ISSUES

Recruitment

Given the limited numbers of Community Fire Safe group members who were able to participate in the project, the research project was not able to run as initially planned. The low numbers of participants may reflect how people categorise themselves as part of a group, as opposed to having attended some meetings; more opportunities to speak about the fire which reduced people's desire to speak further about it; and the challenges of recruiting for engagement officers who are themselves fire-affected.

Although the second piece of research using the findings from the members alone, provides some interesting insights into group functioning and how people define their groups and their role, but it isn't generalisable to the groups as a whole. The difficulties of recruitment do, however, suggest some future research possibilities, which are outlined in the section on future research below.

Recruitment was also an issue for Project 3, which focussed on peri-urban/residential homes affected or threatened by the fire. Although the research was targeted to this group, there were more people from rural areas who responded to the survey. This may reflect the lower levels of concern about bushfires in residential areas.

Research fatigue

The research raised several issues about post-fire communities and research projects. Primarily, these were concerns about research fatigue. As interest, concern and funding for natural disaster research continues to grow, so too has the focus on post-disaster communities. Following the Sampson Flat fire, there were eight known research projects being carried out in the area, and there may be others of which the CFS and the lead researcher are unaware.

Research fatigue and over-reporting of those people who were willing to participate in the research was an issue. Although many people indicated that they participated because they believed it was important to contribute to efforts to increase bushfire safety, others were more reluctant. One participant responded with "*Not another survey*". Further, several participants indicated that they had participated in more than one research project. Future research could take this issue into account, perhaps through greater coordination and communication between research agencies to collectively gather shared data.

Recovery

This research project did not focus on recovery, however, it was this phase of the fire experience which participants in the interviews initially spoke about. That is, as part of the initial stages of the interview, when we asked people about their decision to participate in the research, most people decided to participate because of the challenges they faced in the post-fire period. People shared significant stories about recovery issues – both practical and emotional. These were not included in this report, as they were not part of the original research brief, nor are they issues for which the CFS can have significant input. However, these findings will be published in a separate academic paper on the recovery experiences of people after the Sampson Flat fire, as they raise many important issues which it would be useful for agencies and people involved in recovery, to know about.

Survey design

There were also some anomalies in the data which suggest some limitations in the survey design. In particular, these related to the questions on resilience and understanding and knowledge of bushfire risk and safety.

In relation to the question on resilience, we noted that people rated their adaptability and flexibility very highly, as well as indicating that they managed their anxiety and stress and felt comfortable with the decisions they made. However, these self-reports on these questions were not consonant with the findings elsewhere in relation to people's low ratings of their emotional preparedness, and the challenges people revealed in the interviews, particularly in relation to the effects of anxiety on their decision-making. This suggests that these questions may not have meaningfully captured resilience.

The findings in relation to the questions on people's understanding of bushfire risk and their knowledge of bushfire safety suggest that these concepts were not meaningfully different. That is, they could be read as asking the same question, although they have different meanings within CFS literature. They also rely on self-reports, as do other questions in the survey such as those on resilience and preparation.

FUTURE RESEARCH

The challenges for recruiting Community Fire Safe group members suggest that longer-term research, using primarily qualitative methods, may be more effective. That is, a researcher working in the community itself, attending meetings, speaking with people, and identifying changes over time from attending groups, could capture more clearly the diverse ways in which people utilise the Community Fire Safe group resource. That is, this type of research could capture the influence of experiences ranging from 'a couple of meetings to go to' to 'a community group which works together in a fire'.

Future post-fire surveys could define and measure resilience differently. There are existing validated measures of resilience which may be useful to draw upon and replicate in future research. However, it seems from the research done here, that interviews may be the most useful way to understand the complex decision-making, emotions and circumstances which give rise to adaptability, flexibility and safe decision-making under pressure. Interviews were also a forum where people felt more comfortable talking about emotions and difficult decisions.

To better capture concepts such as understanding of bushfire risk and safety, it might be useful to use questions which are more targeted, such as 'how much are you at risk of bushfire in your area'.

The main focus for future research, which builds on an interest in resilience, is in relation to emotional preparedness. Emotional preparedness was strongly identified throughout the research as an issue for those affected by the fires, whether they were members of a Community Fire Safe group or not. Defining emotional preparedness and its components, and identifying ways in which it may be increased, will be an important focus for future research. Such research could underpin evidence-based programs for building emotional preparedness.

REFERENCES

Adelaide Hills Community Profile (2011) Available at: http://profile.id.com.au/adelaide-hills

McLennan, J., Paton, D., & Wright, L. (2015). At-risk householders responses to potential and actual bushfire threat: An analysis of findings from seven Australian post-bushfire interview studies 2009-2014.

McLennan, J., Wright, L., & Birch, A. (2014). Community understanding and awareness of bushfire safety: residents' experiences of the October 2013 bushfires in three areas. Post-bushfire research for New South Wales Rural Fire Service. Melbourne: Bushfire CRC.

McLennan, J., Dunlop, P., Kelly, L., & Elliott, G. (2011). Lake Clifton Fire 10 January 2011: field interview task force report – community bushfire safety. Melbourne: School of Psychological Science, La Trobe University and Bushfire CRC. Available at: http://www.bushfirecrc.com/managed/resource/fesa_report_lake_clifton_fire.pdf

McLennan, J., Elliott, G., Omodei, M., McNeil, I., Dunlop, P., & Suss, J. (2011). Bushfire survival-related decision making: What the stress and performance research literature tells us. In Thornton, R.P. (Ed.). Proceedings of Bushfire CRC and AFAC 2011 Conference Science Day, 1 September 2011, Sydney Australia. Melbourne: Bushfire CRC.

O Donohue, P., & Dunstan, F. (2015). Building information operations in South Australia: Challenges and opportunities. Presentation to the AFAC 2015 conference. Adelaide, South Australia. 1st-3rd September.

Trigg, J. Rainbird, S., Thompson, K., Bearman, C., Wright, L. & McLennan, J., (2015). *Capturing Community Experiences in the South Australian Bushfires January 2014*. SA CFS.

APPENDICES

Appendix A. Survey and interview questions (Project 1)

Appendix B. Survey and interview questions (Project 2)

Appendix C. Resident's survey (Project 3)

Appendix D. Infographic summary of research findings

APPENDIX A.

SURVEY AND INTERVIEW QUESTIONS (PROJECT 1)

SA CFS Sampson Flat Bushfire Survey

Community Experiences in the Sampson Flat fire

Dear Resident,

The SA CFS has commissioned the Appleton Institute, CQUniversity's Adelaide campus, to conduct this research into the Sampson Flat Fire. We are asking you to participate in a survey of your experiences of that fire. If you're a member of a Community Fire Safe Group or if you are a Community Fire Safe Co-ordinator, please contact us (details are below) and we will send you a different survey.

This research will help us continue to improve bushfire safety programs. Your time and the information you provide may help with improving bushfire safety, and help reduce the impact of future bushfires on your community and others around the country. The survey will take approximately 20 minutes to complete. It does not record any personal identifying details.

We are aware that various other agencies and academic institutions are also conducting research in the Sampson Flat fire area and overlaps may occur. We sincerely regret if this is causing any distress to you and ask you to feel free to decline our request for your participation.

The results of all the surveys will be written into a report for the SA Country Fire Service. Findings from the research may be reported at scientific conferences and in research journals. A copy of the main report will be available through the Bushfire and Natural Hazards CRC website (http://www.bnhcrc.com.au) and the South Australia CFS website (http://www.cfs.sa.gov.au/) later in the year.

If you have any further questions about the study or would like to be interviewed by a member of the research team either as well as, or instead of, completing this survey, please contact:

Dr Danielle Every

Appleton Institute, CQUniversity Adelaide

Email: danielle.every@cqu.edu.au

Telephone: 8378 4521

This study is approved by CQUniversity Human Research Ethics Committee. If you have questions or if you have concerns or complaints about the conduct of this study, please contact

Ms Sue Evans, Ethics Officer

CQUniversity Human Research Ethics Committee, Office of Research Services, CQUniversity, North Rockhampton, Queensland, 4701,

Telephone: 07 4923 2603

Email: ethics@cqu.edu.au

If you would like to talk to someone about your bushfire experiences, the Sampson Flat Bushfire Recovery Centre can link you to services that may be able to provide you with assistance. You can contact them at:

Torrens Valley Community Centre, 45 Albert Street, Gumeracha

Or by telephone: 0477 744 258

Planning and Preparation

The questions in this first section of the survey will help us understand more about people's level of concern about bushfire, and their bushfire planning and preparation prior to the Sampson Flat Fire.

1. Have you had any experience with bushfire in the past?
   - ☐ Yes
   - ☐ No

2. Have you been concerned about bushfires in the past?
   - ☐ Yes
   - ☐ No

3. Please rate your level of concern:
   - ☐ Not at all Concerned
   - ☐ Slightly Concerned
   - ☐ Concerned
   - ☐ Very Concerned
   - ☐ Extremely Concerned

4. Please rate yourself and your household on the following:

	Low	Low-Moderate	Moderate	Moderate-High	High
Your understanding of bushfire risk	1	2	3	4	5
Your motivation to prepare your property	1	2	3	4	5
Your knowledge of bushfire safety	1	2	3	4	5

5. Prior to the Sampson Flat fire, did you do any of the following?

	Yes	No
Discussed a decision to stay and defend or leave early	☐	☐
Prepared a written Bushfire Survival Plan (written checklist)	☐	☐
Practised/ rehearsed your Bushfire Survival Plan	☐	☐
Prepared personal protective clothing for each member of the household	☐	☐
Prepared an emergency kit	☐	☐
Prepared a property plan outlining what you need to do throughout the year to protect your property	☐	☐
Cleaned gutters	☐	☐
Removed fire hazard materials or vegetation from around the house	☐	☐
Landscaped the garden with low flammability plants	☐	☐
Spark and ember proofed the house	☐	☐
Installed a bushfire sprinkler system	☐	☐
Installed independent water dedicated for bushfire protection only	☐	☐
Installed fire fighting pump and hose	☐	☐
Purchased fire fighting equipment	☐	☐

6. Prior to the Sampson Flat fire, what was your bushfire plan?

- ☐ Did not have a plan
- ☐ Leave the area at the first warning
- ☐ Wait, see how bad it is and then leave
- ☐ Stay and defend your home and take shelter as the fire passes
- ☐ Stay and defend your home with the intention of leaving as the actual fire front approaches or if it gets too bad
- ☐ Relocate to a Bushfire Safer Place
- ☐ Shelter in your neighbour's well prepared home
- ☐ Relocate to a relative or friend in a lower risk area
- ☐ Don't know
- ☐ Other (please specify)

  _____

7. Leading up to the fire:

	Yes	No
I was aware that the fire danger rating was 'catastrophic'	☐	☐
I put my plan into action	☐	☐
I felt physically prepared	☐	☐
I felt emotionally prepared	☐	☐
Due to circumstances I changed my plan	☐	☐
I left the night before	☐	☐
Other (please specify)_____	☐	☐

_____

The day of the fire

The questions in this section will help us understand people's responses and actions on the day of the fire.

	Yes	No
Did you leave early?	☐	☐
Did you stay and defend?	☐	☐
Other (please specify)_____	☐	☐

8. What were the most important preparations that helped you on the day? Please answer yes or no to the following statements.

	Yes	No
Having a written plan to refer to	☐	☐
Starting the pump	☐	☐
Ensuring the sprinkler system was operational	☐	☐
Filling bath, buckets and containers with water	☐	☐
Placing water-filled containers in vulnerable spots	☐	☐
Hosing down the house and vegetation close to the house	☐	☐
Moving fuel (e.g. dead plants, wood, etc) away from the windows	☐	☐
Shutting all doors and windows	☐	☐
Bringing indoors all doormats, outdoor cushions, hanging baskets etc	☐	☐
Placing wet towels around window and door edges	☐	☐
Using weed sprayers, super soakers or water backpacks to put out embers	☐	☐
Placing a ladder near the manhole to check for embers in the ceiling	☐	☐
Dismantling the smoke alarm	☐	☐
Contacting neighbours, family or friends in person or over the phone	☐	☐
Monitoring warning messages on a battery operated radio	☐	☐

Communication and information sources during the fire

The questions in this section of the survey will ask you about how and when neighbours communicated with each other about the fire, and also what other information sources people relied upon.

9. Did you contact, or were you contacted by, neighbours?
   - ☐ Yes
   - ☐ No

10. If yes, how?

	Yes	No
Phone tree	☐	☐
In person	☐	☐
Telephone or message	☐	☐
Other (Please specify) _____	☐	☐

11. What were the main sources of information you used during the fire?

1._____
_____

2._____
_____

3._____
_____

Neighbourhood and Community networks

We might have plans in a fire, and sometimes, on the day, the things that we had planned to do can't happen. These changing and unpredictable conditions mean that we can't always contact or assist others in the way that we might feel is expected of us. However, each of us can only do what we can. There are no right or wrong answers to the following questions about community connections and assistance. Please answer yes or no to the following statements.

12. **Prior to** the Sampson Flat Fire:

	Yes	No
I identified my own vulnerabilities and risks (such as physical limitations, animal ownership, dependents)	☐	☐
I identified other vulnerable people in the community (such as an elderly neighbor who lives alone)	☐	☐
I assisted others in preparing their properties	☐	☐
Other (please specify)	☐	☐

13. **During the** Sampson Flat Fire event:

	Yes	No
I was not present because I left early	☐	☐
I went to the assistance of other community members (please explain what you did) _____ _____	☐	☐
I assisted a vulnerable person/people (what assistance did you provide)_____ _____	☐	☐
I was unable to assist others	☐	☐
I stayed in contact with neighbours	☐	☐

14. Have your neighbours/community met after the fire?

☐ Yes
☐ No

a. If yes, what did you do when you met?

_____
_____
_____
_____
_____
_____

15. How would you rate how close you are to your neighbours?

☐ Not close at all
☐ Quite close
☐ Close
☐ Very close
☐ Extremely close

Resilience

Fires are highly stressful events for those involved. These emotionally and physically intense conditions can affect the way we think and behave. Given that people were experiencing such difficult circumstances, we'd like to understand more about how people respond to these kinds of conditions:

16. During the fire, were you able to:

	Yes	No
Feel comfortable with the decisions you made	☐	☐
Adapt to unpredictable events	☐	☐
Be flexible in the face of changing conditions	☐	☐
Problem-solve in the moment	☐	☐

Make new safe decisions when conditions changed	☐	☐
Manage anxiety and stress	☐	☐
Feel you had some control in an uncontrollable situation	☐	☐
Other (please specify)	☐	☐

_____

Demographics

And to finish, a few questions about you. Some of these may seem personal, but we hope it will be easier to answer because all of your answers are anonymous and confidential. The reason we ask these questions is that there are particular personal circumstances that each of us face which can make bushfire preparation and safety more challenging and we need to know more about how to best assist with these.

17. Gender

- ☐ Male
- ☐ Female

18. What is your year of birth? _____

19. What is your postcode? _____

20. Which of the following best describes your household?

- ☐ Two or more adults with dependent child/ren
- ☐ Two or more adults with non-dependent child/ren
- ☐ Two adults with no children
- ☐ One adult with dependent child/ren
- ☐ One adult with no children
- ☐ Other (please specify)

  _____

21. Which of the following best describes the house/property

- ☐ House on a standard sized residential block
- ☐ House on a large 'lifestyle' type block
- ☐ House on a bush block
- ☐ Farm or other agribusiness including winery (specify)
- ☐ Other (please specify) _____

22. How long have you been at this residence or commercial premises?

_____

23. Who was at home on the day of the fire? Please answer yes or no to the following statements

	Yes	No
Children under 5	☐	☐
Children 5 to 12	☐	☐
Teenagers (13-18)	☐	☐
Adults 19-65	☐	☐
Adults over 65	☐	☐
People frail/chronic illness	☐	☐
People with a physical disability	☐	☐
People with a psychological disability	☐	☐
Any pets or livestock	☐	☐

24. To conclude, is there any information that you think would help you to better prepare for any future bushfire events?

_____
_____
_____
_____
_____
_____

25. Any other comments you might have for SA Country Fire Service?

_____
_____
_____
_____
_____
_____

Thank you for giving your time to participate in this survey. Your contribution will assist us in improving bushfire safety.

Interview questions for non Fire Safe members (i.e. residents of the fire affected or threatened area).

These questions are a guide to the topics to be covered, however the interviewer should use their discernment and respond to the interviewee in such a way that the interview becomes a conversation which is guided and prompted towards the topics of interest. The questions are similar to those in the related survey, and indicate the topics to be covered throughout the conversation.

Experience with bushfires, planning and preparation

We'd like to understand more about people's prior experiences with bushfires, and also about their bushfire planning and preparation prior to the Sampson Flat Fire.

1. Had you been in a bushfire prior to the Sampson Flat fire? [prompt for people's stories here]
2. Before the Sampson Flat Fire, how concerned were you about bushfires in your area? [prompt for details, e.g. why were they concerned, what were they concerned about]
3. What was your bushfire plan prior to the fire?

   [prompt for details depending on what their plan is, e.g. if it is to leave, where were they going, what was the trigger for leaving]
4. Did you practice your plan?
5. What did you do to prepare your property?

[Use list in appendix as a prompt: I have a list here of things that people might do to prepare, would you mind me running through them and asking about them? Of the ones that you didn't do, can I ask more about why?]

6. Had you and your neighbours or other people in the community gotten together to talk about bushfires and bushfire planning? [prompt for details around this]

Thank you for telling me all of that about what you did before the fire. I'd like to ask a few questions about the day of the fire itself.

7. Can you walk me through what happened on the day?
   [if the narrative doesn't cover the following or it mentions them but doesn't elaborate, please prompt around them:

   - what happened when the fire began e.g. who did they contact, or who contacted them; how they knew about the fire; did they enact their plan – and if not why
   - contact with other neighbours or community members
   - information sources which triggered them to enact their plan/or act
   - more detail on any mentions of:

        - changing or unexpected circumstances,
        - unpredictable conditions,
        - the effects of stress and anxiety on their thinking
        - => ask about how they adapted, what helped them be flexible, what helped them manage their anxiety
    - what was the impact of the fire (on property, animals, livelihood)
8. Can you tell me a little about what life has been like since the fire? What are some of the challenges you're still facing?

9. Have your neighbours or anyone from your community met since the fire? What did you do? Has that been helpful in the aftermath of the fire?

Some of the things that you've mentioned can be affected by particular life circumstances. One of the things we know about fires is that some people are more at risk because of these circumstances. I was wondering if I could ask you more about these.

10. Can you tell us a bit more about people in your neighbourhood?
    [prompts: age, living circumstances, owning pets or large animals; physical illness or disability; mental illness]

11. And for yourself? Is there anything that might put you at more risk in a bushfire?
    [prompts: age, living circumstances, owning pets or large animals; physical illness or disability; mental illness]
    [expand on whatever vulnerabilities people mention – what these are, what they mean for the person/the people around them]

12. What impacts did [x – whatever they have mentioned] have in preparing for the fire/the fire itself/after the fire?

13. Did people assist [x – whoever they've mentioned]/Did other people come to your assistance?

14. Would you say that you have a close relationship with your neighbours? [expand depending on their response e.g. 'how do you stay in touch' 'what are some of the things you do together' or 'has the community come together in a previous crisis?']

The following questions will be part of a ticklist for each interview – they may well be answered throughout the interview itself, and the interviewer should mark these answers in either during the interview or afterward. For those that are not covered in the course of the interview, then please ask:

1. Gender

   Male
   Female

2. What year were you born?

3. Which of the following best describes your household?

   Two or more adults with dependent child/ren
   Two or more adults with non-dependent child/ren
   Two or more adults with no child/ren
   One adult with dependent child/ren
   One adult with no children
   other

4. Which of the following best describes your house/property?

   House on a standard sized residential block
   House on a large 'lifestyle' type block
   House on a bushblock
   Farm or other agribusiness including winery
   Other [please specify}

5. Who was at home on the day of the fire?
   Children under 5
   Children 5 to 12
   Teenagers (13-18)
   Adults (19-65)
   Adults over 65
   People frail/chronic illness
   People with a physical disability
   People with a psychological disability
   Any pets or livestock

APPENDIX B.

SURVEY AND INTERVIEW QUESTIONS (PROJECT 2)

SA CFS Sampson Flat Bushfire Survey

Community Experiences in the Sampson Flat Fire

Dear Member of a Community Fire Safe Group,

The SA CFS has commissioned the Appleton Institute, CQUniversity's Adelaide campus, to conduct this research into the Sampson Flat Fire. We are asking you to participate in a survey of your experiences of that fire as a member of a Community Fire Safe Group. If you're not a member of a Community Fire Safe Group or if you are a Community Fire Safe Coordinator, please contact us (details are below) and we will send you a different survey.

This research will help us continue to improve bushfire safety programs. Your time and the information you provide may help with improving bushfire safety, and help reduce the impact of future bushfires on your community and others around the country. The survey will take approximately 20 minutes to complete. It does not record any personal identifying details.

We are aware that various other agencies and academic institutions are also conducting research in the Sampson Flat fire area and overlaps may occur. We sincerely regret if this is causing any distress to you and ask you to feel free to decline our request for your participation.

The results of all the surveys will be written into a report for the SA Country Fire Service. Findings from the research may be reported at scientific conferences and in research journals. A copy of the main report will be available through the Bushfire and Natural Hazards CRC website (http://www.bnhcrc.com.au) and the South Australia CFS website (http://www.cfs.sa.gov.au/) later in the year.

If you have any further questions about the study or would like to be interviewed by a member of the research team either as well as, or instead of, completing this survey, please contact:

Dr Danielle Every

Appleton Institute, CQUniversity Adelaide

Email: danielle.every@cqu.edu.au

Telephone: 8378 4521

This study is approved by CQUniversity Human Research Ethics Committee. If you have questions or if you have concerns or complaints about the conduct of this study, please contact

Ms Sue Evans, Ethics Officer

CQUniversity Human Research Ethics Committee, Office of Research Services, CQUniversity, North Rockhampton, Queensland, 4701,

Telephone: 07 4923 2603

Email: ethics@cqu.edu.au

If you would like to talk to someone about your bushfire experiences, the Sampson Flat Bushfire Recovery Centre can link you to services that may be able to provide you with assistance. You can contact them at:

Torrens Valley Community Centre, 45 Albert Street, Gumeracha

Or by telephone: 0477 744 258

Your Community Fire Safe Group

Each Community Fire Safe Group has a different style depending on the location and the members. We'd like to know a little about how your group works.

1. What year did you join/initiate a Community Fire Safe Group? _____

2. How many people are in your group?
   - ☐ 2 to 5
   - ☐ 6 to 10
   - ☐ 11 to 15
   - ☐ 16 to 20
   - ☐ Over 20

3. What motivated you to join a Community Fire Safe Group? Please answer yes or no to the following statements.

	Yes	No
Experience in a previous bushfire	☐	☐
I was worried about bushfire safety	☐	☐
I was new to the area	☐	☐
I wanted to understand bushfire behaviour	☐	☐
I wanted to connect with my neighbours/community	☐	☐
Other (please specify)_____	☐	☐

_____

4. Are you satisfied with the outcome of the group?
   - ☐ Yes
   - ☐ No

5. How many times did you meet as a group in your first year?
   - ☐ 2
   - ☐ 3
   - ☐ 4
   - ☐ More than 4

6. Following the initial workshops, do you still meet regularly as a group?
   - ☐ Yes
   - ☐ No
     a) If 'No', can you tell us why?
        - ☐ I learned what I wanted to learn
        - ☐ We stayed in contact in other ways
        - ☐ I moved
        - ☐ Key group members left
        - ☐ I didn't find further meetings were useful
        - ☐ Other (please specify_____

7. How would you rate your group's:

	Low	Low-Moderate	Moderate	Moderate-High	High
Motivation	1	2	3	4	5
Ability to work together	1	2	3	4	5

Planning and Preparation

The questions in this section of the survey will help us understand more about people's level of concern about bushfire, and their bushfire planning and preparation prior to the Sampson Flat Fire.

8. Please rate yourself and your household on the following statements prior to being a member of a Community Fire Safe Group and now as a member of a Community Fire Safe Group.

	Prior to being a member					Since being a member				
	Low	Low-Moderate	Moderate	Moderate-High	High	Low	Low-Moderate	Moderate	Moderate-High	High
Your understanding of bushfire risk	1	2	3	4	5	1	2	3	4	5
Your motivation to prepare your property	1	2	3	4	5	1	2	3	4	5
Your knowledge of bushfire safety	1	2	3	4	5	1	2	3	4	5

9. Prior to the Sampson Flat Fire, did you do any of the following?

	Prior to being a member		Since being a member	
	Yes	No	Yes	No
Discussed a decision to stay and defend or leave early	☐	☐	☐	☐
Prepared a written Bushfire Survival Plan (written checklist)	☐	☐	☐	☐
Practised/ rehearsed your Bushfire Survival Plan	☐	☐	☐	☐
Prepared personal protective clothing for each member of the household	☐	☐	☐	☐
Prepared an emergency kit	☐	☐	☐	☐
Prepared a property plan outlining what you need to do throughout the year to protect your property	☐	☐	☐	☐
Cleaned gutters	☐	☐	☐	☐
Removed fire hazard materials or vegetation from around the house	☐	☐	☐	☐
Landscaped the garden with low flammability plants	☐	☐	☐	☐
Spark and ember proofed the house	☐	☐	☐	☐
Installed a bushfire sprinkler system	☐	☐	☐	☐
Installed independent water dedicated for bushfire protection only	☐	☐	☐	☐
Installed fire fighting pump and hose	☐	☐	☐	☐
Purchased fire fighting equipment	☐	☐	☐	☐

10. To what extent to do you agree or disagree that the Community Fire Safe Group has enabled you to be better prepared for a bushfire in your area?
    - ☐ Strongly disagree
    - ☐ Disagree
    - ☐ Neither agree nor disagree
    - ☐ Agree
    - ☐ Strongly agree

11. What was your bushfire plan prior to being a member of a Fire Safe Group and now as a member of a Fire Safe Group? (Select all that apply)

	Prior to being a member	Since being a member
Did not have a plan	☐	☐
Leave the area at the first warning	☐	☐

Wait, see how bad it is and then leave	☐	☐
Stay and defend your home and take shelter as the fire passes	☐	☐
Stay and defend your home with the intention of leaving as the actual fire front approaches or if it gets too bad	☐	☐
Relocate to a Bushfire Safer Place	☐	☐
Shelter in your neighbour's well prepared home	☐	☐
Relocate to a relative or friend in a lower risk area	☐	☐
Don't know	☐	☐
Other (please specify)_____	☐	☐

_____

12. Please answer yes or no to the following statements. Leading up to the fire:

	Yes	No
I was aware that the fire danger rating was 'catastrophic'	☐	☐
I put my plan into action	☐	☐
I felt physically prepared	☐	☐
I felt emotionally prepared	☐	☐
Due to circumstances I changed my plan	☐	☐
I left the night before	☐	☐
Other (please specify)_____	☐	☐

_____

The day of the fire

The questions in this section will help us understand people's responses and actions on the day of the fire.

	Yes	No
Did you leave early?	☐	☐
Did you stay and defend?	☐	☐
Other (please specify)_____	☐	☐

13. What were the most important preparations that helped you on the day? Please answer yes or no to the following statements.

	Yes	No
Having a written plan to refer to	☐	☐
Starting the pump	☐	☐
Ensuring the sprinkler system was operational	☐	☐
Filling bath, buckets and containers with water	☐	☐
Placing water-filled containers in vulnerable spots	☐	☐
Hosing down the house and vegetation close to the house	☐	☐
Moving fuel (e.g. dead plants, wood, etc) away from the windows	☐	☐
Shutting all doors and windows	☐	☐

Bringing indoors all doormats, outdoor cushions, hanging baskets etc	☐	☐
Placing wet towels around window and door edges	☐	☐
Using weed sprayers, super soakers or water backpacks to put out embers	☐	☐
Placing a ladder near the manhole to check for embers in the ceiling	☐	☐
Dismantling the smoke alarm	☐	☐
Contacting neighbours, family or friends in person or over the phone	☐	☐
Monitoring warning messages on a battery operated radio	☐	☐

Communication and information sources during the fire

The questions in this section of the survey will ask you about how and when neighbours communicated with each other about the fire, and also what other information sources people relied upon.

14. Did you contact, or were you contacted by, members of your group?
    - ☐ Yes
    - ☐ No

15. If yes, how?

	Yes	No
Phone tree	☐	☐
In person	☐	☐
Telephone or message	☐	☐
Other (Please specify) _____	☐	☐

16. What were the main sources of information you used during the fire?

1._____
_____

2._____
_____

3._____
_____

17. Did you receive a message from your Community Engagement Officer in relation to the bushfire?
    - ☐ Yes
    - ☐ No

Neighbourhood and Community networks

We might have plans in a fire, and sometimes, on the day, the things that we had planned to do can't happen. These changing and unpredictable conditions mean that we can't always contact or assist others in the way that we might feel is expected of us. However, each of us can only do what we can. There are no right or wrong answers to the following questions about community connections and assistance. Please answer yes or no to the following statements.

18. **Prior to** the Sampson Flat Fire:

	Yes	No
I identified my own vulnerabilities and risks (such as physical limitations, animal ownership, dependents)	☐	☐
I identified other vulnerable people in the community (such as an elderly neighbor who lives alone)	☐	☐
I assisted others in preparing their properties	☐	☐
Other (please specify)_____ _____	☐	☐

19. **During the** Sampson Flat Fire event:

	Yes	No
I was not present because I left early	☐	☐
I went to the assistance of other community members (please explain what you did) _____ _____	☐	☐
I assisted a vulnerable person/people (what assistance did you provide)_____ _____	☐	☐
I was unable to assist others	☐	☐
I stayed in contact with neighbours	☐	☐

20. Has your group met after the fire?
- ☐ Yes
- ☐ No

b. If yes, what did you do when you met?
_____
_____
_____
_____
_____
_____

21. How would you rate how close you were to your neighbours?

	Not at all close	Quite close	Close	Very close	Extremely close
Prior to being a member of a Community Fire Safe Group	1	2	3	4	5
Now as a member of a Community Fire Safe Group	1	2	3	4	5

Resilience

Fires are highly stressful events for those involved. These emotionally and physically intense conditions can affect the way we think and behave. Given that people were experiencing such difficult circumstances, we'd like to understand more about how people respond to these kinds of conditions:

22. During the fire, were you able to:

	Yes	No
Feel comfortable with the decisions you made	☐	☐
Adapt to unpredictable events	☐	☐
Be flexible in the face of changing conditions	☐	☐
Problem-solve in the moment	☐	☐
Make new safe decisions when conditions changed	☐	☐
Manage anxiety and stress	☐	☐
Feel you had some control in an uncontrollable situation	☐	☐
Other (please specify) _____ _____ __	☐	☐

Demographics

And to finish, a few questions about you. Some of these may seem personal, but we hope it will be easier to answer because all of your answers are anonymous and confidential. The reason we ask these questions is that there are particular personal circumstances that each of us face which can make bushfire preparation and safety more challenging and we need to know more about how to best assist with these.

23. Gender

☐ Male
☐ Female

24. What is your year of birth? _____

25. What is your postcode? _____

26. Which of the following best describes your household?

- ☐ Two or more adults with dependent child/ren
- ☐ Two or more adults with non-dependent child/ren
- ☐ Two adults with no children
- ☐ One adult with dependent child/ren
- ☐ One adult with no children
- ☐ Other (please specify)

  _____

27. Which of the following best describes the house/property

- ☐ House on a standard sized residential block
- ☐ House on a large 'lifestyle' type block
- ☐ House on a bush block
- ☐ Farm or other agribusiness including winery (specify)
- ☐ Other (please specify) _____

28. How long have you been at this residence or commercial premises?

_____

29. Who was at home on the day of the fire? Please answer yes or no to the following statements

	Yes	No
Children under 5	☐	☐
Children 5 to 12	☐	☐
Teenagers (13-18)	☐	☐
Adults 19-65	☐	☐
Adults over 65	☐	☐
People frail/chronic illness	☐	☐
People with a physical disability	☐	☐
People with a psychological disability	☐	☐
Any pets or livestock	☐	☐

30. To conclude, is there any information that you think would help you to better prepare for any future bushfire events?

_____
_____
_____
_____

_____
_____

31. Any other comments you might have for SA Country Fire Service?

_____
_____
_____
_____
_____
_____

Thank you for giving your time to participate in this survey. Your contribution will assist us in improving bushfire safety.

Interview questions for Community Fire Safe group members or coordinators.

These questions are a guide to the topics to be covered, however the interviewer should use their discernment and respond to the interviewee in such a way that the interview becomes a conversation which is guided and prompted towards the topics of interest. The questions are similar to those in the related survey, and indicate the topics to be covered throughout the conversation.

Community Fire Safe groups each have their different styles, I'd really like to hear more about your group.

1. When did you join a Community Fire Safe group?
2. Who is in the group with you?
3. How often did you meet in the first year?

4. Following the initial workshops, do you still meet regularly as a group? [prompt: if not, could they tell us more about why?]

5. What did you do when you met?

6. Why did you want to join the Fire Safe group?

7. And did you get [x – whatever they have said their motivations were]?

8. Would you say that your group was motivated? Was it a cohesive group – i.e. how do you feel you worked together?

Planning and preparation

I'd be really interested in hearing more about your bushfire planning and preparation, and whether that changed as a result of being a part of a Community Fire Safe Group.

9. What was your bushfire plan before being a member?

10. And what did you do as part of the group around bushfire plans?

11. Do you have a written bushfire survival plan? What is it?

12. Did you practice your plan after being part of a group?

13. What did you do as part of the group around preparation?

14. What did you do differently in relation to preparation since being part of a group?

[Can use list in appendix as a prompt: I have a list here of things that people might do to prepare, would you mind me running through them and asking about them? Of the ones that you didn't do, can I ask more about why?]

As part of understanding the effects of being in a Community Fire Safe group, I'm also wondering about how it influenced you on the day of the fire.

15. Can you walk me through what happened on the day?

    if the narrative doesn't cover the following or it mentions them but doesn't elaborate, please prompt around them:

    - What happened when the fire began
    - Contact with other group members
    - Information sources which triggered them to enact their plan/or act
    - More detail on any mentions of: changing or unexpected circumstances, unpredictable conditions, the effects of stress and anxiety on their thinking => to ask about how they adapted, what helped them be flexible, what helped them manage their anxiety
    - What was the impact of the fire (on property, animals, livelihood)

16. Can you tell me a little about what life has been like since the fire? What are some of the challenges you're still facing?

17. Has your group met since the fire? What did you do? Has that been helpful in the aftermath of the fire?

Some of the things that you've mentioned can be affected by particular life circumstances. One of the things we know about fires is that some people are more at risk because of these circumstances. I was wondering if I could ask you more about these kinds of risks.

18. Can you tell us a bit more about the people in your neighbourhood?

    [prompts: age, living circumstances, owning pets or large animals; physical illness or disability; mental illness]

19. And for yourself? Is there anything that might put you more at risk in a bushfire?

    [prompts: age, living circumstances, owning pets or large animals; physical illness or disability; mental illness]

    [expand on whatever vulnerabilities people mention – what these are, what they mean for the person/the people around them]

20. What impacts did [x – whatever they have mentioned] have in preparing for the fire/the fire itself/after the fire?

21. Did people from the community fire safe group assist [x – whoever they've mentioned]/Did other people from your group come to your assistance?

22. Are neighbours closer now since being in a community fire safe group?

The following questions will be part of a tick list for each interview – they may well be answered throughout the interview itself, and the interviewer should mark these answers in either during the interview or afterward. For those that are not covered in the course of the interview, then please ask:

23. Gender
    Male
    Female
24. What year were you born?

25. Which of the following best describes your household?

    Two or more adults with dependent child/ren
    Two or more adults with non-dependent child/ren
    Two or more adults with no child/ren
    One adult with dependent child/ren
    One adult with no children
    other

26. Which of the following best describes your house/property?

    House on a standard sized residential block
    House on a large 'lifestyle' type block
    House on a bushblock
    Farm or other agribusiness including winery
    Other [please specify]

27. Who was at home on the day of the fire?

    Children under 5

    Children 5 to 12

    Teenagers (13-18)

    Adults (19-65)

    Adults over 65

    People frail/chronic illness

    People with a physical disability

    People with a psychological disability

    Any pets or livestock

28. [If answered yes to any of the above] How much did being a member of a Community Fire Safe group assist you in managing these in relation to bushfire safety?

APPENDIX C.

RESIDENT'S SURVEY (PROJECT 3)

Dear Resident,

The SA CFS has commissioned the Appleton Institute, CQUniversity's Adelaide campus, to conduct this research into the Sampson Flat Fire.

We are asking you to participate in a survey of your experiences of that fire.

This research will help us continue to improve bushfire safety programs. Your time and the information you provide may help with improving bushfire safety and the way we communicate information and warnings to you.

The survey will take approximately 20 minutes to complete. It does not record any personal identifying details.

The results of all the surveys will be written into a report for the SA Country Fire Service. Findings from the research may be reported at scientific conferences and in research journals. A copy of the main report will be available through the Bushfire and Natural Hazards CRC website (http://www.bnhcrc.com.au) and the South Australia CFS website (http://www.cfs.sa.gov.au/) later in the year.

If you have any further questions about the study please contact

Dr Danielle Every

Appleton Institute, CQUniversity Adelaide
Email: danielle.every@cqu.edu.au
Telephone: 08 8378 4521

This study is approved by CQUniversity Human Research Ethics Committee. If you have questions or if you have concerns or complaints about the conduct of this study, please contact

Ms Sue Evans, Ethics Officer

CQUniversity Human Research Ethics Committee, Office of Research Services, CQUniversity, North Rockhampton, Queensland, 4701,
Telephone: 07 4923 2603
Email: ethics@cqu.edu.au

If after completing the survey you would like to talk to someone helpful about your bushfire experiences the Gumeracha Recovery Office can link you to specialist support services. You can contact them at:

Torrens Valley Community Centre
45 Albert Street, Gumeracha
Telephone: 0477 744 258

Information seeking and preparation before the fire

The questions in this section will help us understand the sources of information people use in relation to bushfires, and the kinds of preparation they undertake.

1. Is anyone in your household previously, or currently, a member of a Fire Brigade?

   ☐ Current

   ☐ Previous

   ☐ No

2. Have you had any experience with bushfires in the past?

   ☐ Yes

   ☐ No

3. [if yes] When and where?
   ……

4. [if yes] Did you actively defend a property?

   ☐ Yes

   ☐ No

5. [if yes] Were you an observer

   ☐ Yes

   ☐ No

6. Have you been concerned about bushfires in your area in the past?

   ☐ Yes

   ☐ No

7. Could you please rate your level of concern?

   ☐ Not at all Concerned

   ☐ Slightly Concerned

   ☐ Concerned

   ☐ Very Concerned

   ☐ Extremely Concerned

9. **Before** the Sampson Flat Fire, did you seek any bushfire information?

☐ Yes

☐ No

10. [if yes] where did you get your information?

	YES	**NO**
CFS website	☐	☐
CFS Your Guide to Bushfire Safety	☐	☐
CFS Information session	☐	☐
Local CFS Brigade members	☐	☐
Bushfire Information Hotline	☐	☐
CFS Facebook Page	☐	☐
Friends/family/neighbours	☐	☐
Experience of other fires	☐	☐

Other……
……

11. Before the Sampson Flat bushfire, did you have a bushfire plan for what you would do if threatened by a fire?

	YES	NO
Written and rehearsed plan	☐	☐
Written plan	☐	☐
Clear mental plan	☐	☐
General mental plan	☐	☐

12. What was the intention of the plan?

	YES	NO
Everyone to stay and defend	☐	☐
Some people leave early, others stay and defend	☐	☐
Everyone leaves	☐	☐
Wait and see how bad it was then decide whether to leave	☐	☐
Did not have a plan	☐	☐

Information and warnings on the day of the Sampson Flat bushfire

The questions in this section will help us understand what information and warnings people accessed on the day of the fire.

13. Thinking back to that time of the fire, do you recall any specific clues or warnings about the fire risk?

	YES	NO
None	☐	☐
Hot weather/high winds	☐	☐
SES Extreme Heat Warnings	☐	☐
Total Fire Ban	☐	☐
Severe Fire Danger Warnings	☐	☐
Catastrophic Fire Danger Warnings	☐	☐

Other……

14. On the day of the fire, how did you first find out about the bushfire threat?

	YES	NO
Saw smoke	☐	☐
Saw flames	☐	☐
Official Emergency Alert SMS on mobile phone	☐	☐
Official Emergency Alert on landline	☐	☐
Official warning message on radio	☐	☐
Official warning message on television	☐	☐
CFS FireApp	☐	☐
CFS Website	☐	☐
CFS Facebook	☐	☐
CFS Twitter	☐	☐
Other social media	☐	☐
Call from neighbours/friend/family	☐	☐

Other……
……

15. [If yes to received or heard an official warning] What did you think it required you to do?

……

16. When you heard that a fire was in the area, what were you most concerned about?

- ☐ Smoke inhalation
- ☐ Leaving your home
- ☐ The fire burning your home
- ☐ Being injured or dying in the fire
- ☐ Other ……

17. What did you do when you found that the fire could threaten your area?

	YES	NO
Turn on radio for information	☐	☐
Turned on television for information	☐	☐
Looked on the CFS Website	☐	☐
Looked on another fire-related website	☐	☐
Went on Facebook	☐	☐
Went on Twitter	☐	☐
Called emergency authorities (fire/police)	☐	☐
Rang the Bushfire Information Hotline	☐	☐
Used the CFS FireApp	☐	☐
Contacted friends/neighbours/family	☐	☐
Collected valuables to take to safety	☐	☐
Turned on sprinklers	☐	☐

Relocated pets	☐	☐
Blocked gutters and filled with water	☐	☐
Organised protective clothing	☐	☐
Travelled somewhere to be better able to see where the fire was	☐	☐
Returned home (if away from home at the time of the fire	☐	☐
Waited to see what would happen	☐	☐
Took no specific action because of the fire threat	☐	☐

Other……

Information and warnings during the Sampson Flat bushfire

The questions in this section will help us understand what information and warnings people accessed during the entire fire event.

18. During the course of the fire, what were your top 3 sources of information?

i. ……
ii. ……
iii. ……

19. How useful did you find each of these?

	i.	**ii.**	**iii.**
Not at all Useful	☐	☐	☐
Slightly Useful	☐	☐	☐
Useful	☐	☐	☐
Very Useful	☐	☐	☐
Extremely Useful	☐	☐	☐

20. How many community meetings held in association with the Sampson Flat fire did you attend?

☐ 0

☐ 1

☐ more than 1

21. [if 1 or more than 1] How useful did you find the meetings?

Not at all Useful ☐

Slightly Useful ☐

Useful ☐

Very Useful ☐

Extremely Useful ☐

22. What additional information would you have found helpful during the fire?
……..

23. In the event of a future fire in your area, which of the following organisations would you most likely turn to for reliable information?

	YES	NO
South Australian Police (SAPOL)	☐	☐
Country Fire Service (CFS)	☐	☐
Metropolitan Fire Service (MFS)	☐	☐
The local council	☐	☐
State Emergency Services (SES)	☐	☐
Department of Environment, Water and Natural Resources (DEWNR)	☐	☐

Other……

Demographics

And to finish, a few questions about you. Some of these may seem personal, but we hope it will be easier to answer because all of your answers are anonymous and confidential. The reason we ask these questions is that there are particular personal circumstances that each of us face which can make bushfire preparation and safety more challenging and we need to know more about how to best assist with these.

24. Gender

☐ Male

☐ Female

25. What is your year of birth?

……..

25. Which of the following best describes your household?

☐ Two or more adults with dependent child/ren

☐ Two or more adults with non-dependent child/ren

☐ Two adults with no children

☐ One adult with dependent child/ren

☐ One adult with no children

☐ Other [open box]

26. Which of the following best describes the house/property?

☐ House on a standard sized residential block

☐ House on a large 'lifestyle' type block

☐ House on a bush block

☐ Farm or other agribusiness including winery (specify) …….

☐ Other (e.g., business, school) (specify) ……

27. Who was at home on the day of the fire?

	YES	NO
Children under 5	☐	☐
Children 5 to 12	☐	☐
Teenagers (13-18)	☐	☐
Adults 19-65	☐	☐
Adults over 65	☐	☐
People frail/chronic illness	☐	☐
People with a physical disability	☐	☐
People with a psychological disability	☐	☐
Any pets	☐	☐

Thank you for giving your time to participate in this survey. Your contribution will assist us in improving bushfire safety.

APPENDIX D. INFOGRAPHIC SUMMARY OF RESEARCH FINDINGS