bushfire&natural
HAZARDS CRC

# CAPTURING COMMUNITY EXPERIENCES

## South Australian bushfires January 2014

**Josh Trigg[1], Sophia Rainbird[1], Kirrilly Thompson[1,2], Chris Bearman[1,2], Lyndsey Wright[2] and Jim McLennan[2]**

[1]CQUniversity, Appleton Institute
[2]Bushfire and Natural Hazards CRC

CQUniversity
AUSTRALIA

Government
of South Australia

CFS

# TABLE OF CONTENTS

# FIGURES

# TABLES

# ACKNOWLEDGEMENTS

# EXECUTIVE SUMMARY

Lightning strikes in January 2014 caused a number of significant bushfire events in South Australia that continued into February. Fires in and around Eden Valley, Bangor and Rockleigh provided an opportunity to conduct research into the bushfire risk perceptions, decision-making processes and behaviour of residents across three very different fire events involving a rapid-onset fire (Eden Valley), a long-campaign fire (Bangor), and repeat fire incidents (Rockleigh).

During April and May 2014, 171 residents in affected communities were interviewed and 606 South Australians participated in a complementary online (statewide) survey. Approximately one in two (49%) survey respondents considered their residential area to have been impacted by fire, and almost one in five (17%) indicated that they were directly impacted by the fires, and one in five (20%) experienced fire threat without property damage. The aim of the research was to inform SA Country Fire Service about community members' experiences of bushfires in South Australia, with particular attention to a range of research questions grouped under the three themes discussed below. The nature of the study has allowed us to provide observations and insights on each one of these themes. However, it should be noted that cause and effect relationships between the factors should not be inferred.

### Research Theme One: Community and programs

Despite interviewees perceiving a high degree of community-connectedness (e.g. 'could get help from neighbours'), half of residents actually interacted with their neighbours. Although a high number of survey respondents had participated in a CFS Community Program of some sort (e.g. CFS Fire Safe group session), interviewees tended to report relying on their own common-sense practical and preparatory actions around the home and property (e.g. clearing gutters), rather than a written and practiced bushfire survival plan.

### Research Theme Two: Local bushfire risk perception and preparedness

Over 60% of Bangor and Rockleigh respondents considered their home and family at potential risk of bushfire prior to the bushfire event and rated their concern about potential risk as moderate (Figure 13). This was mirrored in the statewide survey where most respondents perceived a low to medium degree of potential bushfire threat, and a low level of concern about bushfire risk to others in their area (Figures 32, 33).

Although most survey respondents indicated having both house and contents insurance, 7–8% of those on farm or agribusiness type properties reported feeling underinsured, and a notable proportion of those on residential, lifestyle, and farm/agribusiness properties reported having no insurance for house (9–16%) and contents (9–18%). A key figure here is that 18% of those on lifestyle properties reported having no contents insurance (Figure 10).

Prior to 2014, **one in two statewide survey respondents had visited the CFS website**, or viewed televised CFS information, with approximately a third having accessed radio, newspaper, or social media

bushfire safety information (Figure 31). Within this online survey sample, **a quarter recalled obtaining a Bushfire Survival Plan Template** which is similar to that reported by interviewees in Eden Valley and Bangor (Figure 17).

There was a high level of reporting of 'mental bushfire plans' within the statewide sample (85%). This was reflected across the three field sites as well (62%). **One in ten interviewees had a written plan (Figure 15), and this figure tripled for the statewide sample at 28%.**

### Research Theme Three: Information, warnings and action

ABC radio broadcasts were commonly reported by interviewees as their initial source of information, as well as communicating with neighbours, and accessing the CFS website (Figure 19). Lower overall use of CFS social media and the Bushfire Information hotline as primary sources that informed decisions about bushfire threats was reported across both interviews and the statewide sample. Notably, there was a low usage of social media channels by interviewees (29%), though they were perceived as more useful than the CFS FireApp (Figures 21, 22).

In relation to triggers to leave, seeing smoke, phoning or being phoned by family and friends, and seeing flames again had the most influence. This suggests that **personal networks and sensory perception are the most widely used** means for becoming aware of fires and leaving. Seeing smoke and seeing flames as most influential triggers for action suggests that actions are occurring dangerously late.

In each field site, **the percentage of those who ultimately chose to leave as a whole household was approximately double that for the intention to do so.** In each of the sites, the percentage of those intending to stay and defend did not differ appreciably between intention and action. In Eden Valley, those waiting and seeing effectively halved from intention to ultimate action. Moreover, in both Eden Valley and Rockleigh, the percentage of those choosing to split the household between staying and leaving more than doubled from intention to action (Figures 24, 25, 26).

### Similarities and differences by site and fire type

The reported attitudes and behaviours for interviewees were similar in most regards across the three sites and fire types. For example: full house and contents insurance (Figure 7), ratios of written, mental and no bushfire action plans (Figure 15). Moreover, clearing space around the house was the most reported long-term preparation activity (Figure 18), whilst seeing smoke was the most reported source of awareness of a fire threat (Figure 19). Notable characteristics of the different sites included:

### Rockleigh: repeat fire incidents

- Most popular initial plan was to wait and see, which remained unchanged (Figure 26)
- A greater percentage of interviewees reporting previous bushfire experience than those in Eden Valley (Figure 5)
- Most likely to perceive bushfire risk for home and family (Figure 13)

- Lowest reported use of CFS  information sessions and print media for  bushfire safety information prior to 2014 (Figure 12)
- Highest use of the CFS website, CFS Fire App, social networks, and experience of other fires, as sources of bushfire safety information prior to 2014 (Figure 12)

### Eden Valley: rapid-onset fire

- Most popular initial plan was to stay and defend, but ultimately no concrete plan (Figure 26)
- Highest use of local brigade members, articles, Facebook, bushfire ready meetings and CFS information sessions as sources of bushfire safety information prior to 2014 (Figure 12)
- Initial decisions to 'wait and see' reduced for ultimate action whilst 'the whole household leaves category' increased (Figure 26).

### Bangor: long-campaign fire

- Most popular initial plan was to wait and see, which remained unchanged (Figure 26)
- Highest levels of previous and current fire brigade affiliation (Figure 6)
- A greater percentage of interviewees reported previous bushfire experience than those in Eden Valley (Figure 5).

Finally, behaviours and attitudes were quite diverse across the three sites, or did not follow similar patterns across the sites, in relation to:

- Sources of bushfire safety information (Figure 12)
- Level of concern about bushfire risk by distance to nearest dense bushland (Figure 14)
- Primary intention for bushfire plan (Figure 16)
- Actions immediately prior to the fire (Figure 20)
- Information seeking (Figure 23)
- Initial intentions (Figure 24)

### National Comparison

The discussion under the summary of results and key findings of the community interviews includes details of the results of the previous studies provided by Professor McLennan. Generally, it can be said that despite the differences in the communities in which they live and the fire events they faced the people who participated in these interviews had prepared for and responded to those events in very similar ways to those we have interviewed in other states and environments.

# FOREWORD

During the summer of 2013-14, South Australia experienced simultaneous and complex fires over an extended period of time.  These fires saw the SA Country Fire Service (CFS) operating at the highest level of operational tempo since its inception.  Intense thunderstorms across the state saw thousands of lightning bolts strike the earth, causing hundreds of fires to be ignited.  The worst fires occurred in January around the southern Flinders Ranges and the areas of Eden Valley and Rockleigh.

Following these fires, the CFS commissioned the Bushfire and Natural Hazards Cooperative Research Centre to conduct a research program to learn from these incidents, particularly as they were distinct in their impact on the community. Teams of university researchers accompanied by CFS Community Engagement staff visited fire affected areas to undertake face to face interviews with community members. Data was also collected through an online survey to determine how residents were impacted by the three respective fires.

The locations where the most severe fires occurred provided an ideal opportunity to gather valuable information from fire affected communities on their preparedness for bushfire.  While the land use and lifestyles of the selected communities are distinctly different from each other, the research shows there many similarities amongst the communities with respect to bushfire.  However, the research also highlights that the demand for information and how it is best communicated differs depending on the degree of independence and resilience of a particular community group.

Our findings add to the national body of evidence collected from similar research undertaken in Western Australia, New South Wales, Victoria and Tasmania. When results are compared with those of other fire affected communities across Australia, they reveal a consistent trend across the nation about the degree of preparedness and the actions of people when confronted by a bushfire.  Importantly, the analysis of the data gathered identifies the requirement for fire agencies to carefully tailor their community engagement programs and fire prevention strategies for specific communities. It also highlights that a "one size fits all" approach in providing warnings and information to the community during fires in not appropriate.

The results of this research will be used by the CFS and other fire agencies to improve the way we support the community in preparing for bushfires, and assist us to better inform our communities about the consequences of fires on their lives.


**Greg Nettleton**

Chief Officer

SA Country Fire Service

# GENERAL INTRODUCTION

Multiple significant bushfires affected South Australia in January 2014. Fires originating in Eden Valley, Bangor and Rockleigh were particularly demanding of CFS resources. Fortunately, no human lives were lost. However, there was extensive damage to land and some structures. Given the severity of these fires, the SA CFS commissioned the BNHCRC conduct community taskforce. The BNHCRC contracted the Appleton Institute of Central Queensland University (CQUniversity) based in Adelaide to undertake this project. It received ethics approval from the Human Research Ethics Committee at Central Queensland University (approval number H14/03-037).

## Three different types of fire events

The aim of this research was to provide the SA CFS with a community perspective of the three January bushfire events. Given that the CFS provide systematic Community Engagement efforts across the states, the Eden Valley, Bangor and Rockleigh Fires provided insight into how risk perception, decision-making, information-seeking and behaviour are influenced by or play out in the context of different fire types: rapid-onset, long-campaign and repeat fire incidents, respectively.

## RESEARCH FOCI

This report describes findings of the research in relation to the following three key themes of interest identified by the SA CFS, together with their particular research interests.

## Community and programs

Under this broad theme, the CFS sought to gain insights into the following questions:

- o Did the individual's connection to their community influence or assist in how they responded?
- o Prior to this fire event, did individuals actively seek out information on bushfire preparedness?
- o Did individuals who sought out information go on to participate in any program(s) or use any specific resources?
- o If so, how beneficial were the information and/or programs in influencing their preparedness and actions on the day of the fire(s)?

## Local bushfire risk and preparedness

Under this broad theme, the CFS specifically sought to gain insights into the following questions:

- o Do households understand their local bushfire risk?
- o Is this view united within the household?

o Do they prepare according to this risk perception and how do they do this?

## Information, warnings and action

Under this broad theme, the CFS specifically sought to gain insights into the following questions:

o Leading up to and on the day(s) of the fire, how did individuals receive information and/or warnings?
o Did this influence their actions?
o From the information sources, what was their trigger to act?
o How can the CFS and the community help individuals to respond better next time?

## MIXED METHODOLOGY

A mixed-methods approach was implemented to conduct this research, consistent with previous Bushfire CRC and BNHCRC task force deployments in Australia.[1] Combining qualitative and quantitative methods was most suited to gaining a deep and broad understanding of community experiences, respectively. Two forms of data collection were conducted concurrently:

1. **Semi-structured community interviews** (*n* = 171) conducted within communities at each of three field sites: Eden Valley (*n* = 51), Bangor (*n* = 78) and Rockleigh (*n* = 42). These were summarised with an interview check list and supplemented with notes recorded by the interview team.
2. **An online survey** (*n* = 606) conducted by CQUniversity and accessed through the SA CFS website.

It should be noted that the two forms of data collection reflect two different means of addressing the same research aims. That is, the interviews and online survey were used to collect information around general demographics, sense of community, previous experience of bushfires, what happened on the days before the fire threat, what happened on the day, what changes have been made in bushfire planning and preparedness as a result of that experience, if any. Consistent with the project brief, particular attention was paid to the use of communications and warnings. The psychological impact of the fires was excluded from data collection as this was beyond the scope of the study.

The semi-structured interview process allowed experienced researchers to probe particular areas of interest and to tailor questions to the specificities of each fire. This was particularly useful for talking through repeat fire threats in Bangor and how behaviour and risk perception changed over a month of warning messages and updates. The main strength of interviews is their ability to yield unanticipated findings that an online survey would not have been designed to capture (breadth in the data). Consistent with qualitative techniques, the aim was not to interview a minimum number of interviewees. Rather, it was to reach a level of 'saturation' of themes. In the experience of the project leader, this usually occurs within 20 to 40 interviews. This number was exceeded in each of the three field sites. To expedite qualitative data analysis, interviews were subject to *in vivo* summarisation through the use of a checklist.

---

[1] See Appendix 1 in: Skinner & Skinner Consultants. 2014. A Synthesis of Bushfire CRC Community Safety Research (2003-2013) Including Post-fire Contact Surveys. Melbourne, Victoria: Bushfire Cooperative Research Centre.

This provided the quantitative data that is presented in the community survey interview findings in the next section.

The strength of the online survey was that it provided a large dataset based on consistent questioning and short- or closed-response questions (depth of data). The internal consistency of the online survey means that its data is not directly comparable with findings from interviews. Whilst both methods followed the same lines of questioning, interviews were designed specifically to yield the kinds of stories and experiences that an online survey could not – at least not with any efficiency. Nonetheless, the two forms of data collection enable triangulation – whereby considering the same phenomena (bushfire experience, planning, preparedness, etc.) from different perspectives provides a more holistic understanding of communities. This understanding is invaluable for those designing effective community initiatives.[2]

## RESEARCH DESIGN: INFORMED TRADE-OFFS

As with any piece of research, the findings presented in this report arise from interactions between particular participants and particular researchers (mediated or not by virtual encounters), in specific places and at a specific time. In this research project, informed trade-offs regarding financial, temporal and human resources were made in relation to the project aims. Major examples of informed trade-offs include:

- Not using a stratified sample in the interview study. However, this is not an intention of the non-experimental research design that was deemed **most suited** to the research aim of understanding existing beliefs, behaviours, attitudes and experiences of communities.
- The use of non-random purposeful sampling strategies, because the primary aim of the research was to understand a very specific population, that is, those who were affected by the January fires. Therefore, findings are not intended to be generalisable beyond these communities or to be repeatable within communities. Nonetheless, we do expect the findings to have high ecological validity, providing a grounded impression of community experiences from the perspective of community members themselves. However, the statewide survey was not restricted to those who were affected by the January fires and was conducted to provide some point of comparison.
- A face to face interview method was preferred over computer assisted telephone interviews or an online survey alone. Face to face interviewing is demanding of time and resources. This is due to the need to reside in field sites for the duration of fieldwork, travel some distance between houses in rural and peri-urban areas, sometimes only to arrive at unoccupied homes or to spend time building rapport with householders before conducting an interview or to schedule an interview for another time. However, face to face interviewing (in collaborative disciplinary teams comprising university researchers and CFS co-researchers) provides high quality data **that allows more depth** of understanding than online surveys alone.

---

[2] For further information on using mixed methods, and the advantages of qualitative techniques, see Thompson, K. 2013. *Qualitative Research Rules – Using Qualitative and Ethnographic Methods to Access the Human Dimensions of Technology*. In 'A Practical Guide to Evaluating the Human Factors Issues of New Rail Technologies', edited by C. Bearman, A. Naweed, J. Dorrian, J. Rose and D. Dawson, pp. 75–110. Aldershot, UK: Ashgate. Copies of this chapter were provided to all university and CFS researchers involved in this project prior to data collection.

- The presence of the CFS co-researcher may have inhibited the response from some participants. However, the presence of the CFS co-researcher provided a high degree of community acceptance and willingness to participate in the interviews. Other benefits included giving the CFS co-researchers **valuable insight** into households with which they may not otherwise have the opportunity to engage and **collaborative discussion of findings** across industry and research. Including CFS co-researchers is also likely to enhance the community profile of the CFS and should **contribute to buy-in** of any initiatives arising from the work.

- The interviews were conducted during the week rather than at weekends. This meant that people who work all day away from their home location were unlikely to be able to participate in the face to face interviews (although they could participate in the on-line survey and by telephone). It has been the experience of previous bushfire task force researchers who have attempted to collect data at weekends that people are often absent from home or too busy to participate in face to face interviews.[3] While we acknowledge that every community and field site is different the desire to maximize the number of interviewees obtained during the deployment led to the decision to focus the data collection on weekdays.

## 2014 BUSHFIRE EVENTS

The SA CFS, in conjunction with the BNHCRC and the Principal Researcher (CQUniversity's Adelaide-based Appleton Institute) identified three separate field sites in SA for investigation that were threatened or directly affected by bushfires in early 2014. These sites included communities in and around Rockleigh (Murraylands), Eden Valley (Barossa Valley), and Bangor (Southern Flinders Ranges). Figure 1 displays these locations with the approximate fire scars highlighted (red), and shows that some locations were impacted by multiple bushfire events (overlap).

---

[3] See Mackie, B., McLennan, J., & Wright, L. (2013). Community understanding and awareness of bushfire safety: January 2013 bushfires. Melbourne: Bushfire Cooperative Research Centre. Retrieved from http://www.bushfirecrc.com/sites/default/files/managed/resource/bushfire_crc_nswrfs_final_nov13.pdf
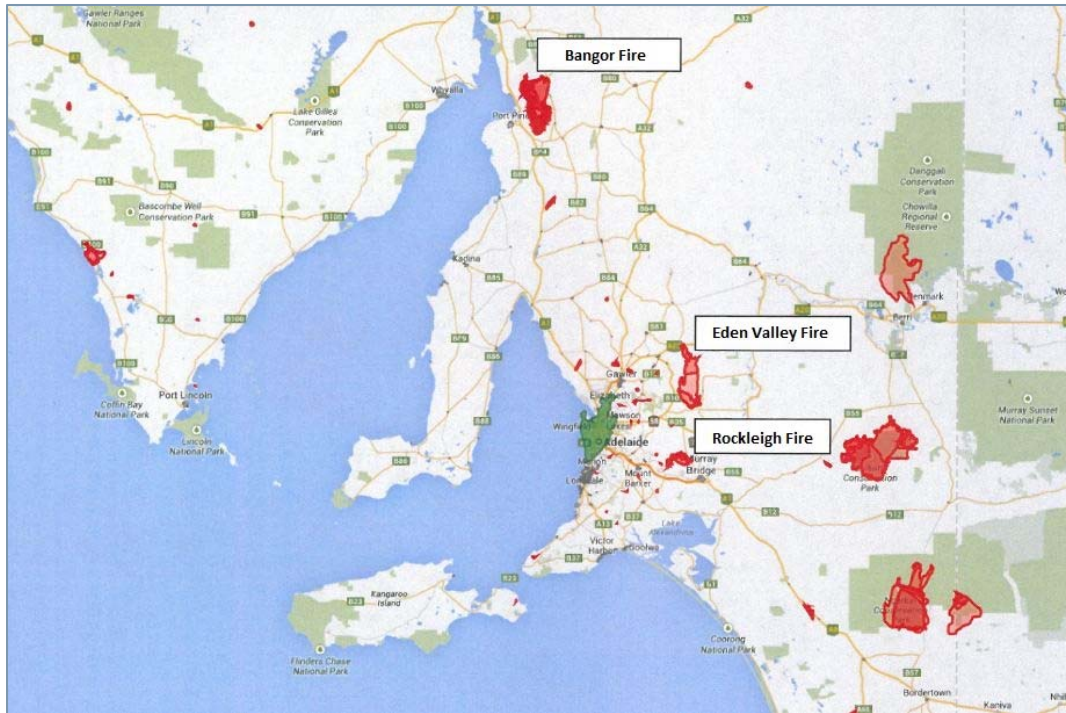
Figure 1. Map showing Eden Valley, Bangor, and Rockleigh fire-affected areas (Source: provided by CFS).

The following sections summarise details of these fire events according to SA CFS regional briefing information and consultation with SA CFS Community Engagement Unit. Briefing information was then confirmed with the Regional Commanders for each field site prior to deployment of research teams. Maps presented for each field site pinpoint key community locations where interviewing was concentrated.[4]

The communities impacted by these fire events are quite diverse and briefings indicated that risk perception and preparedness could be greatly variable within the sites. CFS has been rolling out a variety of community engagement programs across SA in the last fourteen years, with a focus on building community resilience and encouraging the uptake of written and practiced bushfire survival plans. These programs are designed to complement the messaging through CFS staff and volunteers, CFS electronic, print and media sources and public information during incidents.

During the fires, verified information and warning messages were distributed through official CFS channels including the CFS Website, emergency broadcasters, Facebook, Twitter and community meetings and newsletters. Table 1 provides a comparative overview of the three different fires durations, size and number of warning messages issued.

---

[4]A completed list of interview locations is available within the raw dataset provided to the CFS.

**Table 1. Comparative overview of characteristics of the three different fires.**

| Characteristic | Rockleigh | Eden Valley | Bangor |
|---|---|---|---|
| Bushfire type | Repeat incident | Rapid onset | Campaign |
| Time period | Jan 14 2014 17:51 <br> Jan 16 2014 9:55 | Jan 17 2014 11:08 <br> Jan 29 2014 16:42 | Jan 14 2014 23:35 <br> Feb 14 2014 20:00 |
| Fire size | 4487.2 ha | 24628.5 ha | 35100.8 ha |
| Fire perimeter | 38.2 km | 142.7 km | 197.6 km |
| Bushfire Advice Message | 6 | 19 | 53 |
| Bushfire Watch and Act Message | 8 | 18 | 121 |
| Emergency Warning Message (with Emergency Alert voice & SMS) | 1 | 15 | 29 |
| Emergency Warning Messages issued between | Jan 14 2014 19:15 <br> Jan 14 2014 22:03 | Jan 17 2014 11:31 <br> Jan 18 2014 20:08 | Jan 16 2014 14:26 <br> Feb 12 2014 1:06 |

### Site 1: Murraylands – The Rockleigh Fires

Rockleigh is located approximately 62 kilometres south east of Adelaide and is located within the Rural City of Murray Bridge (Figure 2). Properties are largely agricultural with sheep grazing and crops, and there are also a growing number of hobby farmers in the area. Females comprise 48% and males 52% of the population with the mean age of 41 years. English is spoken by 90% of the population and indigenous people form 2.1% of the population. 56% work full time or are self-employed and 84% own their own home.

The area is characterized by rocky open low hills with sparse ground cover interspersed with wide gullies and patches of remnant scrubland.  Most of the area is rated as *medium* bushfire risk under state planning regulations. The local CFS brigade is relatively new and although there is no CFS fire station in the area, an appliance is stored at a local's property. There are no services or shops in the immediate area, and most people travel to Murray Bridge if needed, with limited services available at Callington and Kanmantoo.

Just after 3pm on 14th January 2014 a fire ignited near Rockleigh suspected to be started by lightning. This was the third time that communities in the area were under the threat of fire within a 12-month period. More than 80 CFS firefighters responded to the incident, with asset protection being the initial priority as the fire burnt through open country and moved into scrubland. The fire initially travelled in a south-easterly direction towards Reedy Creek Road, before a wind change pushed it north-easterly around 8pm. Burning under extreme conditions, the fire generated thick smoke that was clearly visible in Murray Bridge. Significant fencing and livestock losses, as well as that of a dwelling were sustained. The Rockleigh fire burnt for 4 days before being declared controlled.
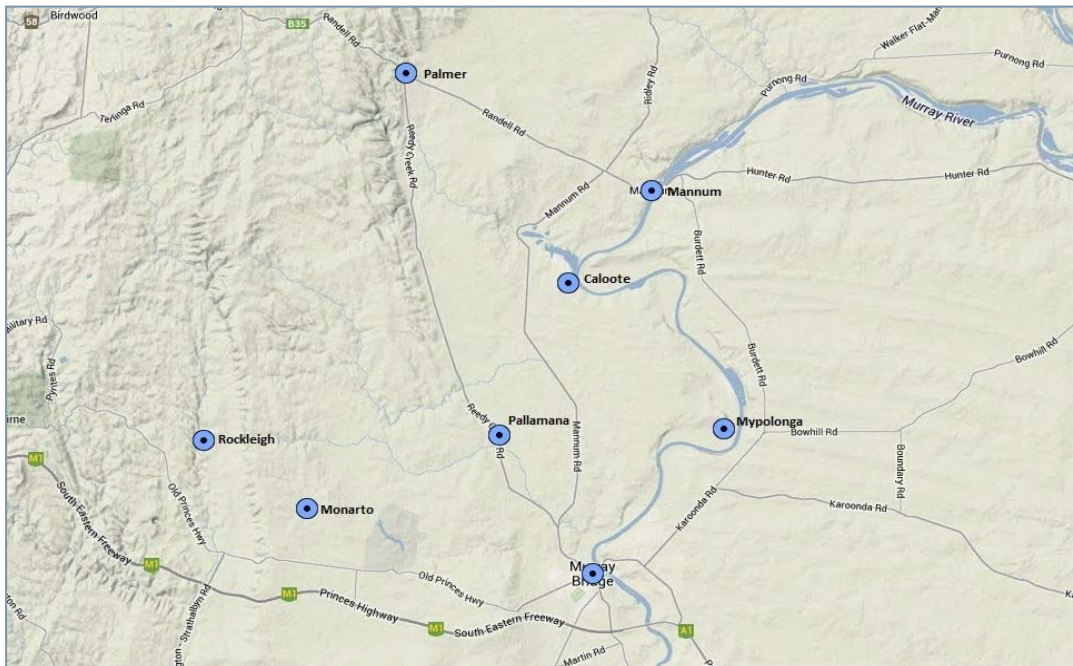
Figure 2. Rockleigh fire field site (Source: Google Maps, accessed 03/06/2014).

## Site 2: Barossa Valley – The Eden Valley Fires

Eden Valley is located approximately 55 kilometres from Adelaide and is an agricultural and wine growing region within the Barossa Valley Council area[5] (Figure 3). Australian born residents comprise 85% of the population, with 0.7% being indigenous and 2.3% speaking a language other than English. Of this population, 54% are female and 46% are male with a mean age of 48 years. The majority work full time or are self-employed, and own their home.

To the east of Eden Valley a north-south running range supports a mix of sparsely populated grazing lands, native scrublands and low forest. It drops abruptly on the eastern face to flat open grazing country stretching towards the Murray River populated with small communities and farming properties. Some of the area is rated as *medium* bushfire risk under state planning regulations, but most of it is rated as *general* where new buildings require minimal compliance with bushfire protection standards.

Just after midday on Friday 17th January, the Eden Valley fire ignited from a rekindle of a lighting strike. It burnt freely under the influence of the strong north westerly winds and then an intense southerly wind change pushed the fire northwards along the range.  The wind change resulted in gusts over 120 km/hr with higher winds also blowing between 90 and 180 degrees to the direction of wind travel at ground level. This intense wind shear was described by the Bureau of Meteorology as very unusual, potentially a one in 100 year event, resulting in extreme and unpredictable fire behaviour and complex spotting.

---

[5] The Barossa Council (2014) The Barossa Council Area Community Profile Reports, http://profile.id.com.au/barossa/reports.

The fire burnt intensely on the Friday through to Saturday impacting the smaller communities of Eden Valley, Springton, Cambrai, Sedan, Graetztown, Keynton and Towitta and threatening the larger townships of Anagaston and Truro, burning through almost 25,000 ha. With conditions easing on the Sunday, it was declared contained by Monday 20th January. Impacts included significant losses of livestock, feed, water and fencing, multiple sheds and four houses.
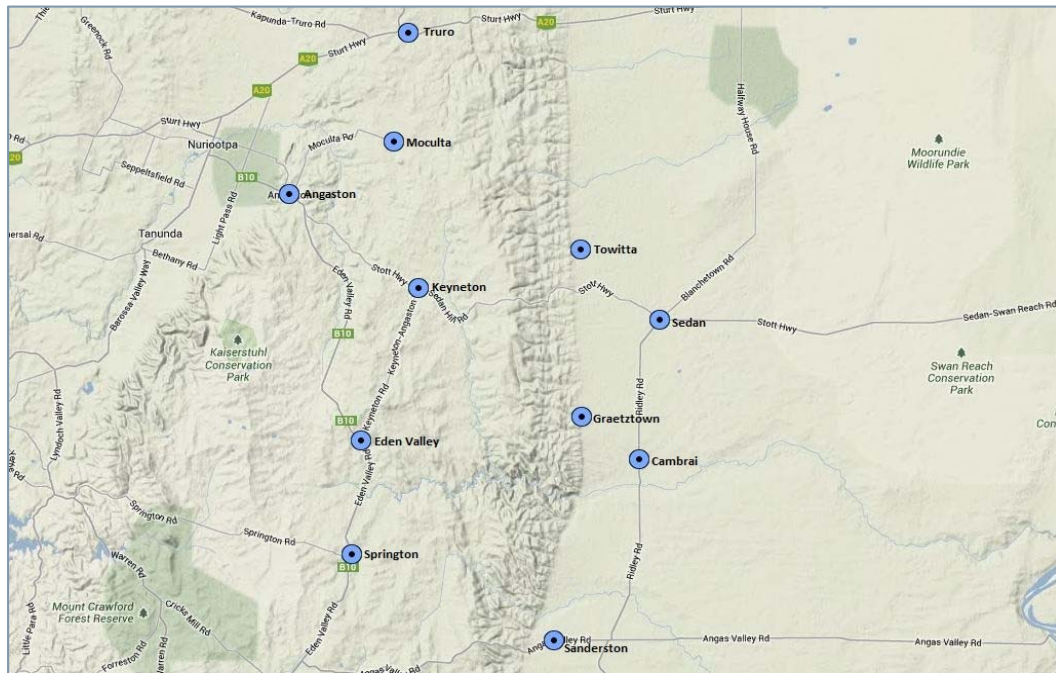


Figure 3. Eden Valley fire field site (Source: Google Maps, accessed 03/06/2014).

### Site 3: Southern Flinders Ranges – The Bangor Fires

Bangor is located approximately 258 kilometres north of Adelaide. The area of the Bangor fire scar covers three council districts: Port Pirie Regional Council, District Council of Mount Remarkable and Northern Areas Council (Figure 4). This area comprises of largely agricultural industry and a majority of unsealed roads. According to ABS statistics, the mean age of residents is 42 years. The demographics suggest that gender proportions are relatively even and English is the main language spoken in the region. Indigenous residents consist of approximately 2.2% of the population.[6] Most residents are full time or self-employed and most own their own home, reflecting the large number of farming properties in the area.

The area is framed by the Southern Flinders Ranges, with grazing and cropping country to the east and west of the abruptly rising hills. The ranges are mostly vegetated with low scrub and open forest cut through with steep gorges leading into vegetated creek lines in the foothills and open plains below. State planning regulations map the bushfire risk as *high* along the ranges *to medium* and *general* in the valleys.

On 14th January, lightning ignited a fire near the small community of Bangor on the west side of the range about 25 km north-east of Port Pirie. By the following evening, the fire had moved into inaccessible

---

[6] Regional Development Australia (2010) Yorke and Mid North Regional Roadmap August 2010, pp.1-46.

and difficult terrain and had burnt 10 ha, moving slowly and posing no threat to life or property. On 16th January, a change in wind conditions saw the fire spread rapidly in a southerly direction and by the end of that day it had increased to approximately 3,500 ha. Late on 17th January, a southerly wind change saw the fire rapidly spread towards the townships of Wirrabara, Murraytown (shown on map below) and the small community of Wongyarra (not shown on map below). After 14 days of continuous efforts by firefighters, the Bangor fire was declared contained on 30th January and controlled on 6th February.

Two days later, the fire broke control lines with the onset of winds and temperatures above 40°C and threatened the townships of Laura, Wirrabara and Stone Hut, and the small community of Beetaloo Valley. On 14th February, after burning more than 35,000 ha, it was again declared controlled. Communities were significantly impacted with five houses, a timber mill, a forestry plantation, a number of sheds and structures, large amounts of livestock, feed and croplands and many kilometres of fencing destroyed.



**Figure 4. Bangor fire field site (Source: Google Maps, accessed 03/06/2014).**

# PART 1: COMMUNITY INTERVIEWS

## MATERIALS AND PROCEDURE

As noted above, the research protocol was informed by previous bushfire task force deployments undertaken by the Bushfire CRC in NSW and WA. This project benefited from being provided with protocols, tools and materials that had been tested during each deployment and iteratively refined based on the experience of researchers and perspectives of fire agencies.[7]

Prior to deployment, a semi-structured interview protocol (Appendix A) was developed by the authors (based on the materials used by the Bushfire CRC in similar studies) in consultation with senior staff within the SA CFS broadly and SA CFS Community Engagement Team specifically. All materials were provided and interviews conducted in English, as consultation with local SA CFS and Australian census data indicated a low likelihood of encountering multilingual residents at research sites. This was confirmed during deployment.

Each two-person interviewing team was provided a supply of materials: *General Notes for Interviewers*, the 24-question *Post-Bushfire Interview Guide for SA January 2014 Bushfires*, *Participant Information Statements* (Appendix B), *Consent Forms* (Appendix C), as well as *Assigned Area Maps* showing street locations and property areas to be covered. Several copies of a CFS-designed *Information Flyer* particular to the area were given to teams to leave with interested community members, or at unattended properties to permit call-back for *in situ* or phone interview bookings. Each field team was equipped with a digital recorder to document interviews verbatim, a field notebook, stationery, food and drinks. Informative materials regarding bushfire preparedness and recovery were also provided by SA CFS team members to members of the community.

Prior to commencing a formal interview, interviewees were provided with a copy of the *Participant Information Statement*, were advised of the nature and purpose of the research, and that their involvement was voluntary, that they could terminate the interview and withdraw from the study, and that their responses would remain confidential and anonymous. They were then informed that their data could be withdrawn from, or not used in, the study, and were then asked to sign a formal consent form. Interviewees were given the option of speaking to a university researcher only, with the SA CFS staff member leaving temporarily, to permit free speaking. This offer was not taken, and the presence of both researcher and SA CFS staff did not appear to impair the interview process. Where interviewees agreed the interviews were recorded. A 69-item *Interview Summary Checklist* (ISC; Appendix E) designed to correspond to the interview protocol topics was completed by the SA CFS team member during each interview. The ISC was reviewed post interview by both members of each team to compare perspectives on interview themes covered. Both the protocol and the checklist remained consistent across the three sites.

At the close of the interview, a *Sources of Help Sheet* (Appendix D) was provided to all interviewees. This sheet lists a variety of psychological recovery, coping and support services and resources for interviewees to consult if needed. Bushfire preparedness materials were also offered by SA CFS staff. At the end of

---

[7] Appendices are ordered as follows: Interview Guide (Appendix A), Participant Information Statement (Appendix B), Consent Form (Appendix C), Sources of Help sheet (Appendix D), and Interview Summary Checklist (Appendix E).

each day, interview recordings were backed up, and each ISC uploaded through SurveyMonkey© to a database for later analysis.

Each of the field sites included farming, rural residential and township areas. Properties targeted for interviews in the study were those that were directly affected by the fires, and those considered by SA CFS to have been 'under threat' at various stages. These areas were selected in advance by the Principal Researcher in consultation with project partners and the local CFS staff.

Interviewee samples, though not stratified, were subjected to daily assessment by the research team to ensure that a broad cross-section of communities, property types and residents was achieved. Field teams were assigned to designated areas with detailed maps (provided by the SA CFS).[8] This further ensured thorough coverage and no overlap.

Most interviewees were interviewed on their properties, either at their house or a nearby part of the property. However, a small number were interviewed by phone ($n$ = 12) to give as many residents as possible an opportunity to participate in the study. Where a property was attended and considered safe by the SA CFS staff, the residence was approached to locate a potential interviewee. If the resident was home but not currently available, contact details were left to arrange a later interview. If the property was unattended, an *Information Flyer* containing call-back details was left.

For all three deployments (Eden Valley, Bangor and Rockleigh), interviews were conducted between 0900 and 1700 hours, with some variations in this due to weather and interviewee availability. Field teams drove to their allocated areas and visited properties on foot. Vehicles provided by the SA CFS permitted access to more remote properties and clear identification. Across all three sites (covering multiple communities), outright rejections of interview requests were rare ($n$ = 20), although unattended properties were common ($n$ = 79). Residents often took *Information Flyers* ($n$ = 81), or took contact details to book an interview ($n$ = 14). Four face-to-face interviewees declined recording; hand-written notes were taken instead for both these and the majority of phone interviews.

During the interviews, interviewees were asked about:

- their demographic characteristics;
- their perceptions of local community values, relationships and cooperation;
- their awareness of bushfire risk and previous experience;
- their preparations for and knowledge of bushfire behaviour;
- both formal (written) and informal (mental) bushfire planning and management;
- their awareness of official and informal warnings generally, immediately prior to, and during the fires;
- communication channels used to send and receive information relevant to bushfire safety;
- their responses to the warnings and their perceived usefulness.

In the latter half of the interview, interviewees were asked to 'walk' [the researcher] through what happened on the day(s) of the fire, detailing what they had done, and why. This allowed researchers to

---

[8]Maps indicating destroyed and severely affected properties, stock and other assets were made available during the planning phase prior to deployment of field teams. These were used to assign interview areas, though were not made directly available to field teams owing to confidentiality and privacy obligations.

probe and record a comprehensive narrative of the householder's experience of bushfire threat and impact and the factors that influenced their decision-making.

A total of 171 interviews were conducted in Eden Valley from 28 April to 2 May; Bangor from 5 to 9 May; and Rockleigh from 12 to 15 May. 159 interviews were conducted face to face. Twelve interviews were conducted over the phone, either by request of the interviewee or to include interviewees that researchers were unable to visit face to face (usually because they had moved to the next field site). Interview contents were summarised using a standard checklist to note key themes, ensure adequate coverage and facilitate rapid analysis of findings.

Sixty-four interviews were subsequently transcribed, and analysed for content and themes by the authors. The transcribed interviews were selected to cover: a) the three field sites, b) a range of property types, c) a range of household member compositions, and d) a variety of responses to warnings.

## DATA ENTRY AND ANALYSIS

At the close of each data collection session, teams reviewed their ISC forms to ensure completeness. To facilitate later analysis, research teams not only identified accounts that illustrated typical/atypical or good/poor understandings, but also completed a meta-description (Appendix E). This included a brief abstract of the householder's account, themes it exemplified, unique elements, consistency with other accounts and keyword tags. All interviews were used in the analysis, though this descriptive section helped identify audio files to prioritise for transcription and analysis. The ISC data (which was derived from the interviews) was entered into SurveyMonkey[©] and quantitative data in the form of frequency charts were produced for key questions and themes. Data from the ISC, along with charts and frequency tables for all data items by site has been provided to CFS in electronic form.

Within the 171 interviews conducted, of those audio-recorded ($n$ = 159), 64 (40.3%) were transcribed by Top Type[©], an Adelaide-based specialist transcription service. These were selected on the basis of representativeness of community concerns at each site, property type, and coverage of initial research statement questions. Both the transcribed and original audio material was subject to standard qualitative data analysis techniques based on a four stage process of immersion, coding, categorising and generation of themes.[9] Consistent with qualitative research, analyses were iterative, with dominant and sub-themes from the ISC data, as well as those identified directly within the interview content, used to address the focal research topics provided by the SA CFS. During this process, concerns specific to communities within each of the three field sites, as well as findings from the online survey, were used to provide contextual reference.[10] This was completed using the final three datasets. Guided by the research aims, qualitative data analysis was deductive to the extent that we selected quotations that illustrated the

---

[9]Green, Julie, Karen Willis, Emma Hughes, Rhonda Small, Nicky Welch, Lisa Gibbs, and Jeanne Daly. 2007. "Generating best evidence from qualitative research: the role of data analysis." Australian and New Zealand Journal of Public Health no. 31 (6):545-550. doi: 10.1111/j.1753-6405.2007.00141.x.

[10] Nvivo (QSR International) software was used by qualitative researchers to analyse related themes and trends within semi-structured interview data.

findings. It was also inductive in that we sought to convey the variety of community experiences around these findings.

As the types of community concerns and the nature and duration of bushfire events differed across the three field sites, there were some interview topics and ISC items for which less data was recorded. Although this is commonly considered 'missing data', it likely also reflects difference in focus on these concerns with some topics being of less relevance to some interviewees.[11]

Non-responses have not been included in analyses, and where this is a concern, it has been noted in the text. A final caveat is that results from this research must be further validated in future studies if they are to be generalised beyond the targeted South Australian communities that were affected or threatened by the 2014 fires.

De-identified data obtained during the course of the research has been provided to CQUniversity's Appleton Institute, BNHCRC and SA CFS research partners. This dataset constitutes a significant resource that could form the basis of further work in this area by CFS staff, researchers, consultants or students (Honours, Masters or PhD).

## RESULTS

This section first provides a description of the interviewee demographics then reports findings from the community interviews according to the key research themes:

1. Community and programs
2. Local bushfire risk and preparedness, risk perception, and understanding of risk
3. Information, warnings and actions

Where necessary, abbreviations are used to indicate which field site data relates to: Eden Valley: E, Bangor: B, and Rockleigh: R. Where an interview transcript extract is provided, this abbreviation is paired with a transcript number.

### Interviewee participant demographics[12]

One hundred and seventy-one interviews were conducted, with 221 people interviewed across the three field sites (Table 2). This included 66 men, 72 women and 33 instances with multiple interviewees and genders present (Table 3). No gender bias was observed, though slightly more females were interviewed (Table 3). All but two of the multiple interviewee occurrences comprised a male and female couple. The age of those interviewed varied from 18 to 87 years, with an average of 57.9 years ($SD$ = 13.15, $n$ = 214) (Table 3).

---

[11]As found within previous research, data collected within interviews and using ISC forms was not 'forced-response' in nature, hence missing values for various themes are indicated by varying sample size notes. This is not considered to have impacted analyses negatively. See: Mackie, B., McLennan, J., & Wright, L. (2013). Community understanding and awareness of bushfire safety: January 2013 bushfires. East Melbourne, Victoria: Bushfire Cooperative Research Centre.

[12] Detailed information by location is provided in Appendix F.

**Table 2. Interviews by field site**

| Site | Responses | Percentage interviews (*n* = 171) |
|---|---|---|
| Eden Valley | 51 | 30% |
| Bangor | 78 | 46% |
| Rockleigh | 42 | 24% |
| | 171 | 100% |

Within the overall sample, 25 individuals (15%) were currently a member of a fire brigade and 39 (23%) had been previously. One hundred-and-two individuals (60%) were at no point affiliated with a fire brigade and five (3%) declined to respond. Importantly, 118 (70%) community interviewees had previous experience with bushfire, 46 (27%) did not and 5 (3%) declined to respond.

**Table 3. Interviewee gender and age**

| | Responses | Percentage responses |
|---|---|---|
| **Gender (*n* = 171)** | | |
| Male | 66 | 39% |
| Female | 72 | 42% |
| Multiple interviewees present | 33 | 19% |
| | 171 | 100% |
| **Age (*n* = 221)** | | |
| 18–40 years | 26 | 12% |
| 41–50 years | 38 | 17% |
| 51–60 years | 52 | 24% |
| 61–70 years | 66 | 30% |
| 70+ years | 32 | 14% |
| Not specified | 7 | 3% |
| | 221 | 100% |

The interviewee property characteristics displayed in Table 4 give an approximation of the type of rural–urban interface observed for the combined field sites. The majority of properties were 'lifestyle' or larger agricultural-type properties, with a lower representation of residential and other[13] property types.

Many of the properties visited were within 500 m of what the researcher team considered to be 'significant bushland' (49%),[14] and 53% were in or near the edge of the nearest fire scar for their field site.

---

[13]This category includes inactive vineyards, accommodation (bed and breakfast), share-cropping land, community centres, leased/agisted or sub-let property, orchards, a prison, a school, and a zoo.

[14]This was termed 'significant bushland' on the ISC; however, researchers clarified this as dense bushland to interviewees to help the interviewee give an estimate.

**Table 4. Interviewee property characteristics**

| Property characteristics | Responses | Percentage responses |
|---|---|---|
| **Type (*n* = 171)** | | |
| House on a standard-sized residential block | 11 | 7% |
| House on a large 'lifestyle'-type block | 66 | 39% |
| Farm or other agribusiness including winery | 81 | 47% |
| Other (such as business or schools) | 11 | 6% |
| Unspecified | 2 | 1% |
| | | 100% |
| **Fire scar proximity (*n* = 156)** | | |
| Property within fire scar | 54 | 32% |
| Property near edge of fire scar | 37 | 21% |
| Outside fire scar (300m+ away) | 65 | 38% |
| Unspecified | 15 | 9% |
| | | **100%** |
| **Bushland proximity estimate (*n* = 106)** | | |
| <250 m | 60 | 35% |
| 251–500 m | 24 | 14% |
| 501–750 m | 1 | 1% |
| 751–1000 m | 7 | 4% |
| >1000 m | 14 | 8% |
| Unspecified | 65 | 38% |
| | | **100%** |

Characteristics of the three field sites and for South Australia overall were accessed from the Australian Bureau of Statistics for comparison to characteristics of the study samples: both interviews and the statewide online survey sample (Table 5). Please note, CFS figures for household representativeness of gender and employment exceed 100% as this was recorded by household, not by individual. Gender was recorded for households at which single- and multiple-person interviews took place, with some persons preferring gender or name to be recorded (5%). Employment categories were not mutually exclusive as, for example, full-time employment in one job and part-time employment in another could co-occur, and some interviewees preferred not to indicate employment status.

Older age samples were observed across the field sites and in the statewide survey. English-speaking households were represented as highly as in the ABS data. Fewer interviewees were employed (full- and part-time) for Bangor and Rockleigh, with the proportion of those away from work or retired in these areas being much higher. Property ownership Figures were comparable to ABS data, though a lower proportion of those renting was observed across all three field sites and in the statewide survey data. As might be expected from the method we used, this means that people who were in full-time or part-time employment are slightly under-represented and people who were away from work or retired are slightly

over-represented in the sample. Older adults are slightly over-represented relative to younger adults and people who owned their own home were slightly over-represented relative to people who were renting.

**Table 5. Household representativeness along selected demographic characteristics (CFS 2014 samples against ABS 2011 Census data)**

| Characteristic | Eden Valley CFS | Eden Valley ABS | Bangor CFS | Bangor ABS | Rockleigh CFS | Rockleigh ABS | South Australia CFS | South Australia ABS |
|---|---|---|---|---|---|---|---|---|
| **Gender** | | | | | | | | |
| **Female** | 65% | 54% | 59% | 50% | 60% | 48% | 52% | 51% |
| **Male** | 49% | 46% | 63% | 50% | 57% | 52% | 43%[c] | 49% |
| | | | | | | | | |
| **Age** | | | | | | | | |
| **Years (Median)** | 57 | 48 | 61 | 42 | 57 | 41 | 45-54 | 39 |
| | | | | | | | | |
| **Language** | | | | | | | | |
| **English only** | 98% | 87% | 91% | 94% | 88% | 90% | 92% | 82% |
| | | | | | | | | |
| **Employment** | | | | | | | | |
| **Full time/self** | 51% | 49% | 46% | 64% | 41% | 56% | 67% | 57% |
| **Part-time** | 20% | 38% | 9% | 28% | 21% | 34% | 18% | 32% |
| **Unemployed** | 2% | 4% | 3% | 4% | 2% | 5% | 1% | 6% |
| **Away from work/retired** | 18% | 9% | 36% | 4% | 36% | 4% | 5% | 6% |
| | | | | | | | | |
| **Property ownership** | | | | | | | | |
| **Owned/ mortgaged** | 92% | 88% | 95% | 80% | 93% | 84% | 78% | 68% |
| **Renting** | 6% | 12% | 3% | 15% | 2% | 11% | 8% | 28% |
| **Managing** | 2% | *n/a* | 3% | *n/a* | 5% | *n/a* | 1%[d] | *n/a* |

*Note.* ABS 2011 Census Community Profile data for approximate comparison accessed from profile catalogue numbers: Eden Valley (SSC40169): 2001.0, Monarto (SSC40443): 2001.0, and Melrose (SSC40420): 2001.0. [a] Nearest state suburb statistics used for gazetted localities (i.e., Bangor, Rockleigh). ABS sample sizes were as follows: Eden Valley (*n* = 364), Melrose (*n* = 406), Monarto (*n* = 469), and SA (*n* > 1.5M).

### *Previous research involvement*

Of those interviewed, 11 had been previously interviewed by news media, Bushfire Recovery SA, Primary Industries and Regions SA, State Emergency Service SA and South Australia Police.

### *Damage and Loss*

Nearly half of interviewees reported no damage or loss due to the fires (47%) and 19% reported experiencing fire threat with no property damage (20%). Minor damage was experienced by 23%, and 10% experienced major property damage (two reported having lost their house). Approximately one third (33%) reported additional significant property damage. This included fencing, feed and other paddocks, poly-pipe systems (e.g. irrigation), dams, shed and tank structures, horticultural property (e.g.

orchards, vines), livestock (e.g. sheep, cattle) and animal feed, as well as vehicles (e.g. tractors). Loss of business continuity due to service and infrastructure disruption may also have contributed to financial loss.

For interviewees with pets or livestock, approximately one in five reported that their animals had either suffered injury or had died due to the fires. These were predominantly stock animals (sheep, cattle, poultry, pigs) that had had experienced radiant heat and smoke inhalation effects. Many of these interviewees had to have a number of their animals euthanised.

The quotations presented throughout this report should be read, considered and interpreted with full recognition that they were elicited from people who were more or less affected by a traumatic event.


### Previous Experience with Bushfires

Many interviewees (70%) had previously experienced bushfire events in various locations across Australia. For those who had such experience – in Eden Valley, 49%; Bangor, 76%; and Rockleigh, 81% – the percentage that had actively defended in the past was 36% for Eden Valley, 34% for Bangor and 21% for Rockleigh (Figure 5). The fires cited as past experience spanned a period of 55 years (1959–2014) and covered events in both South Australia and Victoria (e.g. Ash Wednesday).

Some interviewees noted bushfire experience during their childhood, or during past engagements with state or private firefighting units. For many of those with past experience of bushfire, the influence upon their perceptions and actions regarding the January 2014 fires was evident, for example:

> *A couple of times. We've had one come from the forest down. And that got that we packed that time. But the wind changed and luckily we didn't have to leave, but we had the smoke. We didn't see no flames or anything but it was coming down […] this way. But I've only packed once, other than this other time, to get out.* **[B:26]**

> *Not so close, like there'll be stubble fires down on the flats or little fires around and there's been fires in the valley but nothing as big as this, and everyone expected something like this to happen at some stage but not quite on the scale that it did. I suppose you're prepared to a certain extent but never fully prepared.* **[B:13]**
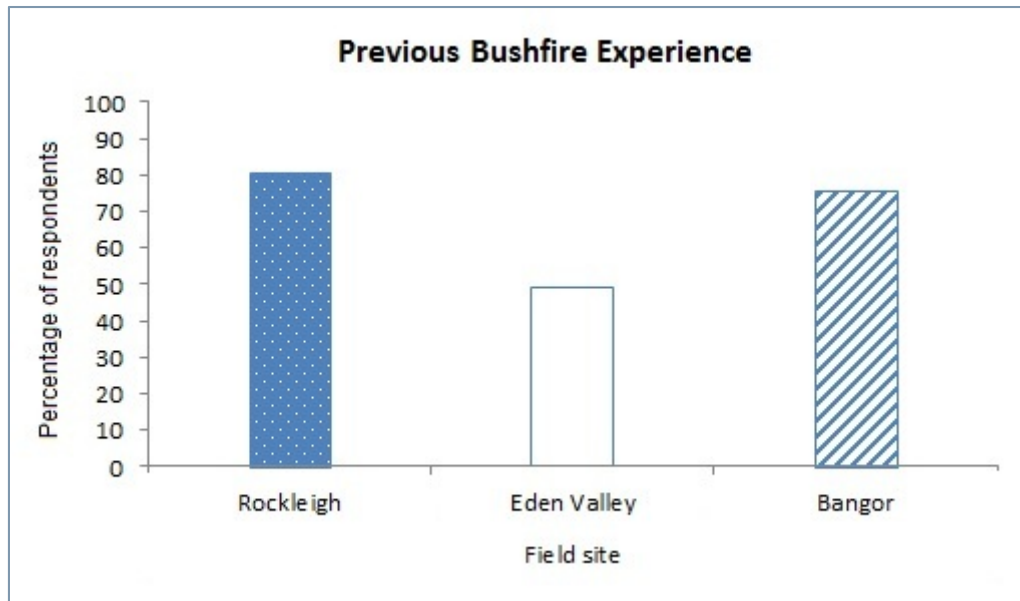
Figure 5. Previous bushfire experience by field site.

### SA CFS Affiliation

As indicated below, approximately 60% of interviewees had at no point been affiliated with a fire service or brigade (Figure 6). For the 37% who had some affiliation with a fire service or brigade, this was predominantly with the SA CFS, though also included informal arrangements (e.g., neighbourhood groups with Farm Fire Units).
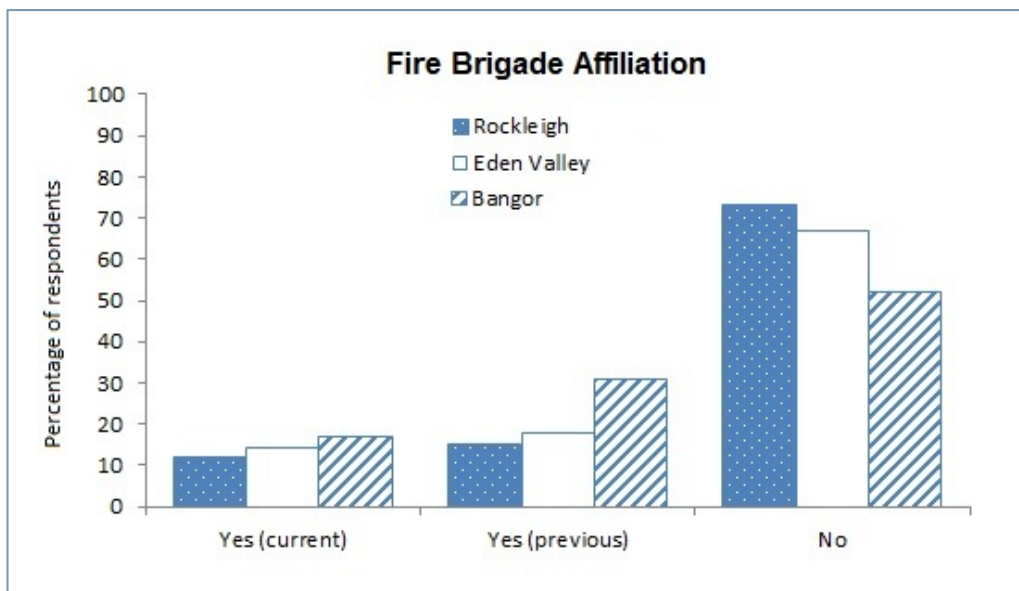


Figure 6. Fire brigade affiliation by field site.

Across the three sites, the highest percentage of current membership was in Bangor (17%), followed by Eden Valley (14%) and Rockleigh (12%). This pattern was also seen for past membership (B = 31%, E = 18%, R = 15%) and reflected for non-affiliation (B = 52%, E = 67%, R = 73%).

*Presence of Dependents and those Identifying as Frail or Disabled*

Across all of the interviewed households, around one in five contained dependents: 11 (6%) housed children under 5 years, 19 (11%) housed children aged 5 to 12 years, and 17 (10%) housed teenagers aged 13 to 18 years. South Australia Census Figures are comparable for children aged < 5 years, though are slightly higher than the study sample for those aged 5 to 12 and 13 to 18 years.[15] ABS Figures are also comparable with interview household Figures for legal dependents aged less than 18 years at approximately 24% of SA residents and 21% of study households.[12] Frail or disabled individuals—and in some cases both—were present in 14% of households with 11 (6%) containing individuals who identified as being frail or having a chronic illness, and 14 (8%) of households containing individuals self-identifying as having a disability. Note, some frail or disabled individuals may not have identified themselves as such.

Notwithstanding the consistency with the ABS data, the current sample size is such that it is not appropriate to undertake a detailed quantitative analysis of the impact the presence of dependents has on household preparedness or actions. However, the following quotes indicate that the presence of dependents appears to have had some impact on those both fire preparedness and actions at the time of the fire and give insights into individual approaches.

For instance, health issues for one interviewee ensured that they left early:

> *Q: What was the trigger to leave the next morning?*
> *A: The smoke. The smoke just came down. My partner's an asthmatic.* **[B:5]**

For another disabled interviewee, they held the belief that others would be responsible for ensuring they left their home:

> *I'm disabled, I think I would be instructed to leave because I wouldn't be much help if I stayed. What could I do?* **[E:10]**

In Rockleigh, a mother described how she prepared her children by practicing a fire drill:

> *Like I said, how many times have we gone through the drill. There was smoke miles away but I still put the kids through the drill, pack the gear, we're moving. And God, they've probably packed their stuff five or six times this summer. And then the last time we moved. They could see the benefit of packing everything and then all getting in the car, dogs, cats, the lot, and moving. A build-up.* **[R:1]**

One elderly Bangor resident admitted during interviews that he was unlikely to be able to physically carry out his bushfire plan to stay and defend. The plan to fight the fire in part required using a fire unit on the back of a truck to protect the house but the resident was quite old and frail. As he said:

---

[15] Australian Bureau of Statistics (2013) 2011 Census QuickStats: South Australia. Retrieved from http://www.censusdata.abs.gov.au/census_services/getproduct/census/2011/quickstat/4?opendocument&navpos=220

*It was all happening so quickly and you've got to imagine an old bloke like me, not coping very well. [B:28]*

### Responsibility for Pets & Livestock

The majority of interviewees lived with some type of pet (80%) and this high incidence was upheld across all three field sites: Rockleigh, 83%; Eden Valley, 80%; and Bangor, 78%. The type of pets owned is a relevant consideration for the preparations of each household, as this varied across households. Overall, dogs were the most commonly encountered pet (64% of households), followed by cats (37%), then small groups of chickens and other poultry (e.g. ducks, geese) (19%). Other bird types, including parrots, finches, quail, doves and emus were also encountered (11%), with few properties having horses (6%). A minority also kept small mammals such as rabbits or guinea pigs (5%), fish (4%) and other aquatic pets such as turtles (2%). The following quotes provide key **examples** of how pets factored into the responses of some individuals. For instance, one pet owner allowed her pets the freedom to escape the fire themselves:

*I left the chook yard open and I left the dog off the chain. I was hoping to come back to less cats. No, I just left them all off and I thought they'll probably be safer that way than me dragging them. And we didn't lose any pets or anything.* **[B:13]**

Another pet owner had not considered the logistics of moving her horses to safety and was therefore unprepared when the fire approached:

*And it was really hard on the day; that was one thing that really I realised I wasn't as prepared for because I didn't have enough time to even pack the horses in a float and take them down a road and I thought, "Well if I do, where am I going to take them?"* **[B:21]**

Lastly, it was also found that certain animals were viewed as pets despite occupying different roles to that of normal household pets. Sheep and goats were considered pets within some households (2%), and a minority of properties housed wildlife (e.g. kangaroos), or animals with dual roles (e.g. household pet as well as working animal). This is consistent with the findings from previous studies.[16] Some pet owners applied the same bushfire plan across the different types of pets that they owned:

*The goats were let out. All the goats were let out. The emu, well, the emu, he would have been all right too, so I had no problems with them. It was the dogs that were locked in kennels. The dogs were loose.* **[R:1]**

Livestock ownership was common for households in Eden Valley (49%), Bangor (46%), and Rockleigh (48%), with the bushfires having a devastating impact on many of the farmers who owned livestock, as shown in the following example:

---

[16] Personal communication: Professor Jim McLennan, La Trobe University, Melbourne, July 2014.

*We lost* **[a large number of]** *sheep. We lost all our one-and-half-year old ewes, a special breed of sheep we had and some of our two-and-a-half-year olds and some lambs so it was absolutely devastating to say the least.* **[B:14]**

Other farmers had livestock escape the fire front but still experienced long-term effects:

*Well, the pig shed was fine. It went – it came from that way and went through the implements shed and out that way but the smoke went through. We've lost pigs since, we feel from smoke inhalation. We've lost a few more, say about 15 or 20 than we normally would have.* **[E:5]**

Other farmers were cognisant of how their livestock would respond to a bushfire and this was factored into their response to the fires:

*Well, we've got yards down there, horse yards, and they were out in the paddock but we bought – and the horses are the main thing, and sheep, because sheep just stand around and get burnt. The horses go berserk and so we brought their horse over and we had our four in the yards.* **[R:6]**

### *Insurance*

Most interviewees indicated that they were fully insured for their house (85%) and contents (83%). However, many indicated that their machinery and equipment was not insured (27%) and for some underinsured (10%). For those with livestock and pets, only half were fully insured and 6% underinsured, with 44% having no insurance for their animals (Figure 7). The latter group comprises responses for those owning both pets and livestock ($n$ = 52), as very few owned stock but no pets ($n$ = 2), or pets but no stock ($n$ = 5).

Across the three sites, the levels of full insurance for house and contents were lowest for the Bangor area, at 82% and 79% respectively, showing that they were least likely to be adequately insured. For Rockleigh, 85% were fully insured for both house and contents, and for Eden Valley, 89% and 88% were fully insured for house and contents (Figure 8). Both figures 7 and 8 are presented on the following page.
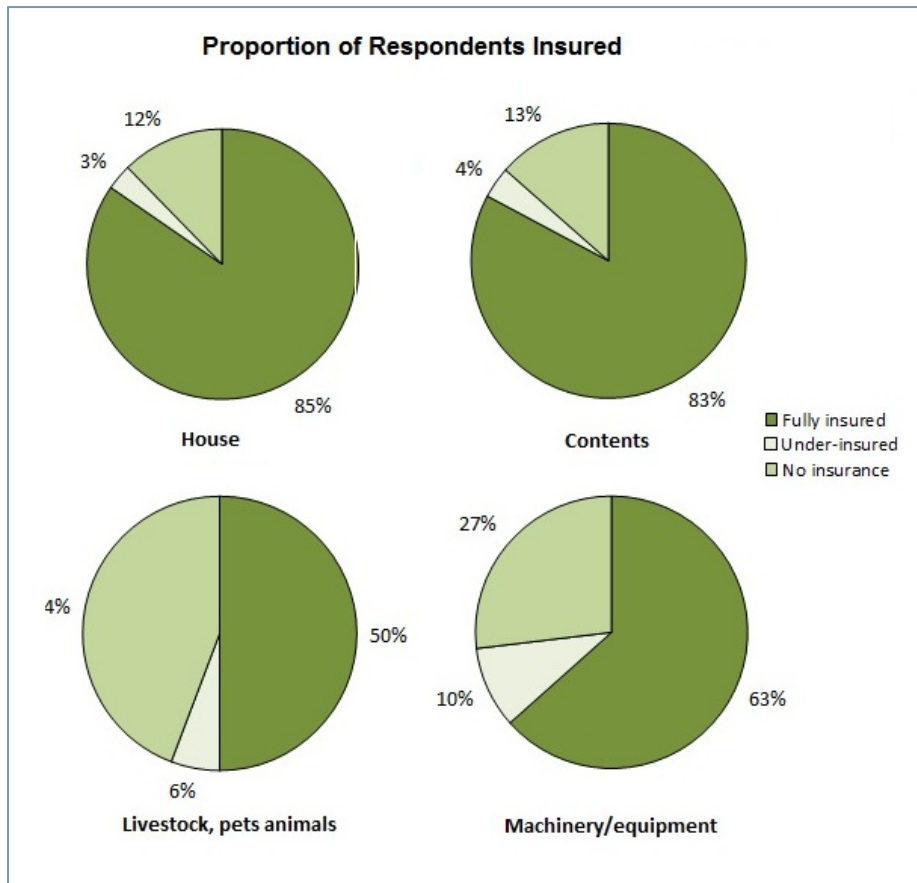
**Figure 7. Perceived insurance level by property type.**

Note: Figures for the livestock, pets and animals category were derived from interviewees owning both livestock and pets.
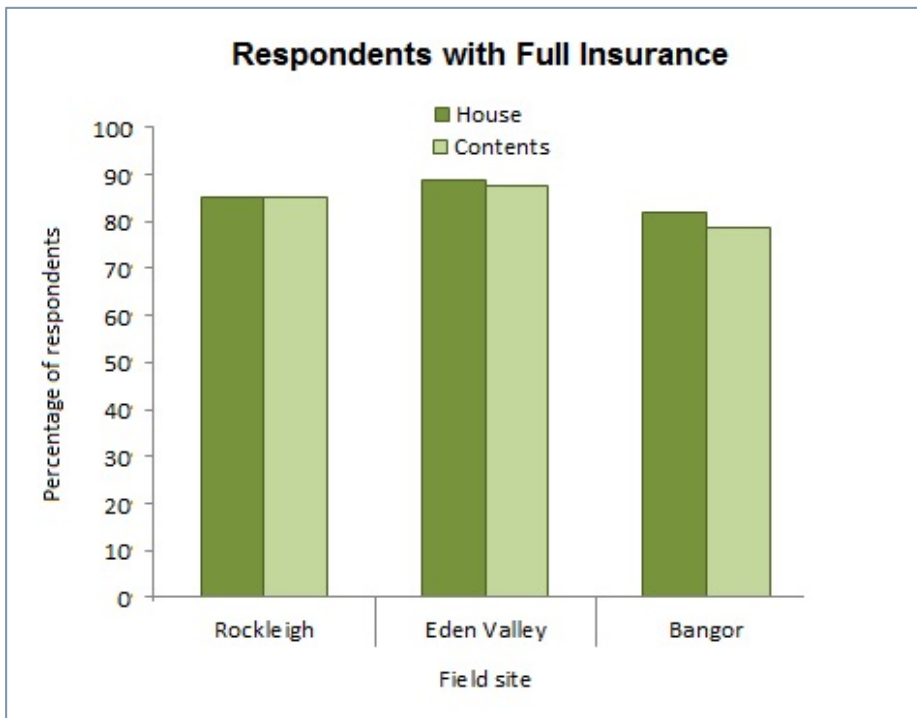


**Figure 8. Proportion of interviewees fully insured for house and contents by field site (excluding insurance for machinery/equipment).**

Insurance levels were considered against bushfire plan intentions to explore any relationships between underinsurance and staying to defend, or adequate insurance and planning to leave.

Figure 9 shows that interviewees with full house insurance were likely to stay and defend their property (30%), or leave as a household (26%). This was comparable for contents insurance at 27% for both of these intentions. However, 19% of those with full contents insurance had no concrete plan. Many of those underinsured or with no insurance for both house and contents intended to stay and defend, and many interviewees with no insurance for house (37%) or contents (24%) had 'no concrete plan' initially. Note, figures for under- and non-insurance should be interpreted cautiously given lower numbers of item responses.
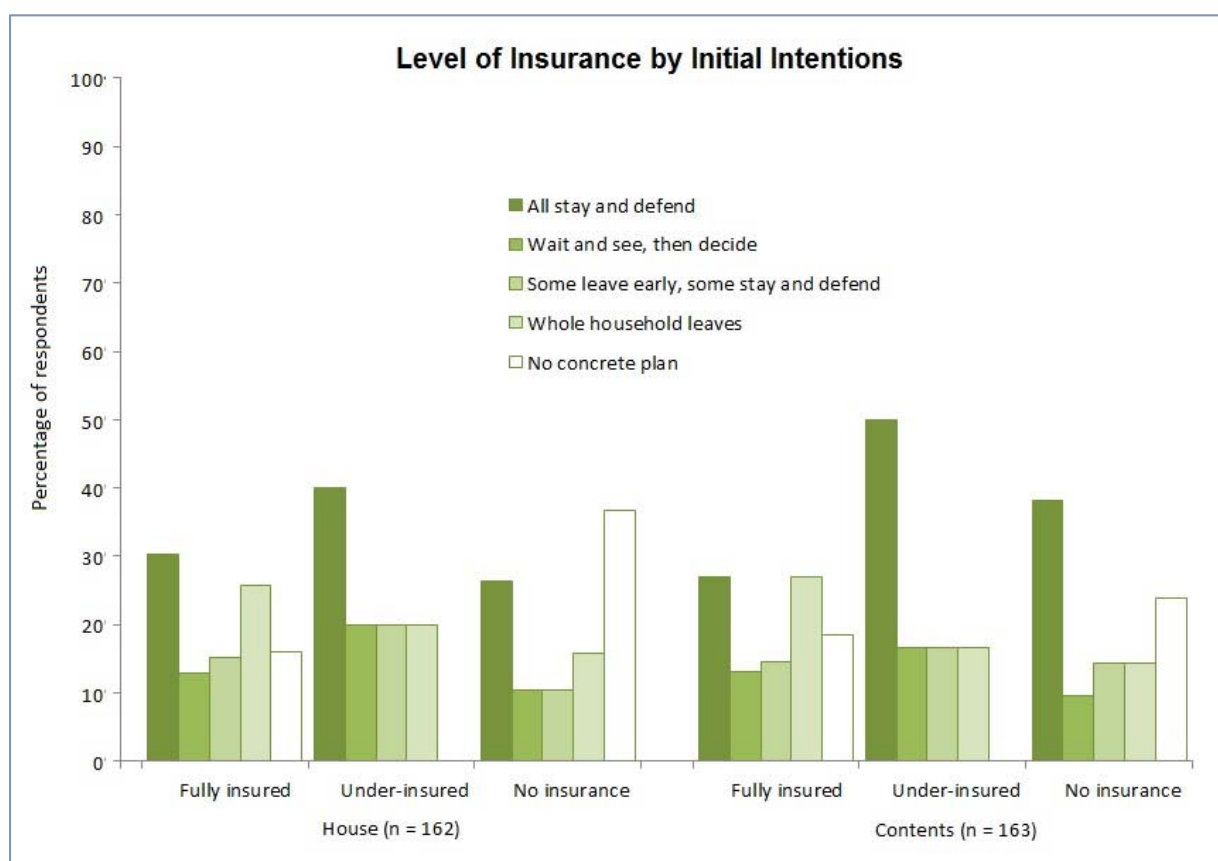


Figure 9. Level of insurance by initial intentions.

One farmer on a 6,000-acre property recounted their insurance coverage:

> *We have household, building insurance. There is some insurance for stock loss. […] We haven't got fencing at the moment, just the stock because we've got property situated in different areas, like away from here.*
> *Q: Do you have insurance for your machinery and your shedding?*

> *A: Some of it but it gets too expensive to do everything so [everything] except newer type machinery.* **[R:11]**

Their bushfire plan was dependent on the location of the fire, but was generally to stay and defend. In Eden Valley, one household had a clear plan to leave their property. However, when the fire occurred, they realised that their insurance needed to be more comprehensive:

> *Well, I was actually in a bit of a – because where we run our sheep is right in the line of the fire, so I was madly ringing around my insurance company trying to get fire cover for them because it's something that I just hadn't done and of course I couldn't because the fire was already happening.* **[E:2]**

The bushfire experience at Bangor prompted one farmer to re-evaluate their insurance needs:

> *It's been a good learning curve for me because like we were just talking about the farm insurance. We had probably under-estimated some of the workshop area. We always thought it was up there but we never considered the power, the cost to [...] my mate was here and he said, I just said to him, I said, "Well, since we had the fire, what do you reckon it would cost to replace it* [the shed]*?", and we were just working out. And I said, "Oh yeah, that's roughly right". And then he said, "Well what about your power?" And I just said, "No, I haven't even thought about that." So last week we had the farm insurance so we went and had a look [...] so it was good to re-focus on things.* **[B:24]**

Figure 10 presents interviewees' level of insurance according to property type.[17] Full house insurance was reported by the majority of those living on residential blocks with a house (91%) and 'lifestyle' blocks with a house (84%). Similar figures were observed for full contents insurance in these groups also at 91% and 82% respectively.

Full house insurance was also reported by the majority of interviewees with a farm or agribusiness (81%), or other type of business/service property (100%). In many cases the house was on or adjoining the business property. Full contents insurance for these two latter groups was also high at 79% and 100% respectively.

---

[17] Please note that these proportions are based on valid percentages, and as such require replication with more complete data before they can be generalised beyond those responding within the current interviewee sample.
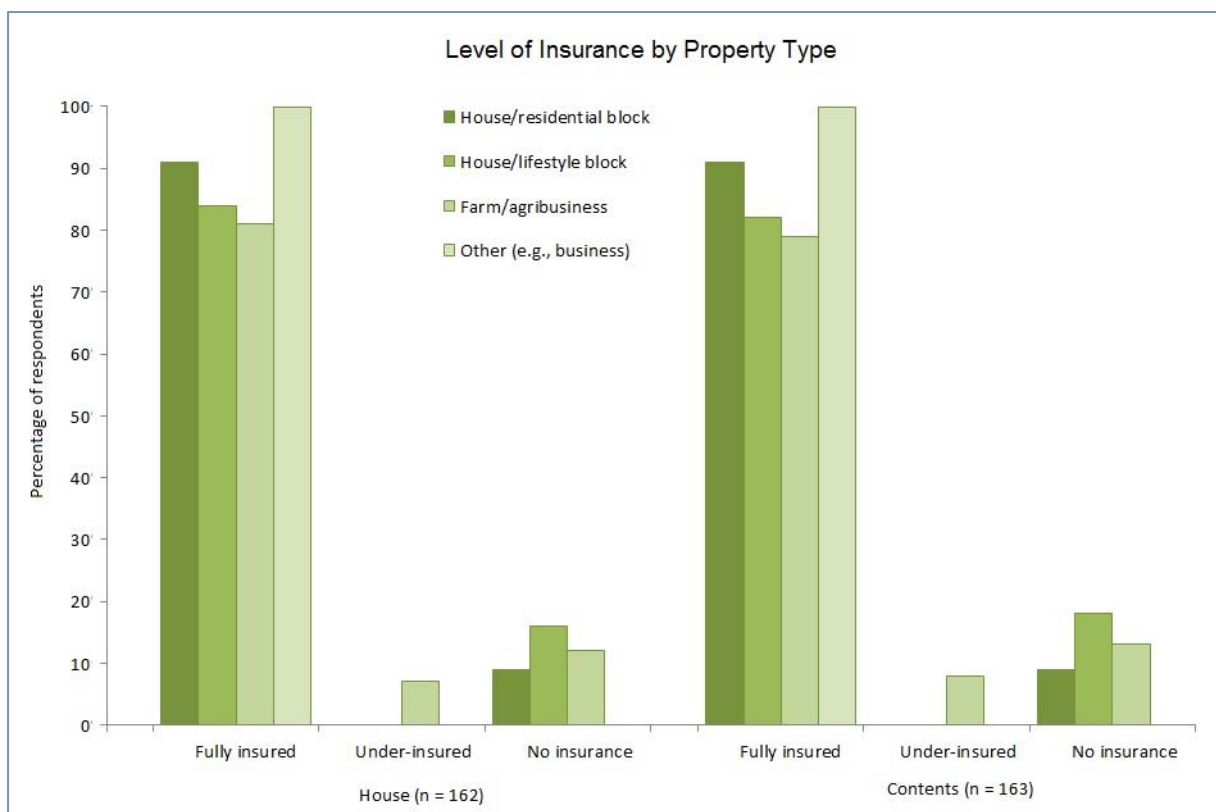
**Figure 10. Level of insurance by property type.**

Although 7-8% of those on farm or agribusiness type properties reported feeling underinsured, a notable proportion of those on residential, lifestyle, and farm/agribusiness properties reported having no insurance for house (9-16%) and contents (9-18%). A key figure here is that 18% of those on lifestyle properties reported having no contents insurance.

## Community and programs

This section discusses the research theme of the role of community and programs on individual preparedness and response.

### Sense of Community

Interviewees endorsed a high degree of sense of community along three of the five dimensions measured: feeling that their neighbours know them (94%), that neighbours cooperate to address community issues (89%), and that they could get help from their neighbours if necessary (93%). Lower endorsement was seen for feeling personally connected with neighbours (74%) and slightly more than half felt that neighbours in their community socialise together (58%) (Figure 11). Although these figures indicate a high degree of *perceived* familiarity, cooperation and availability of help, the degree to which they *experienced* actual connectedness and shared activities was moderate to low.
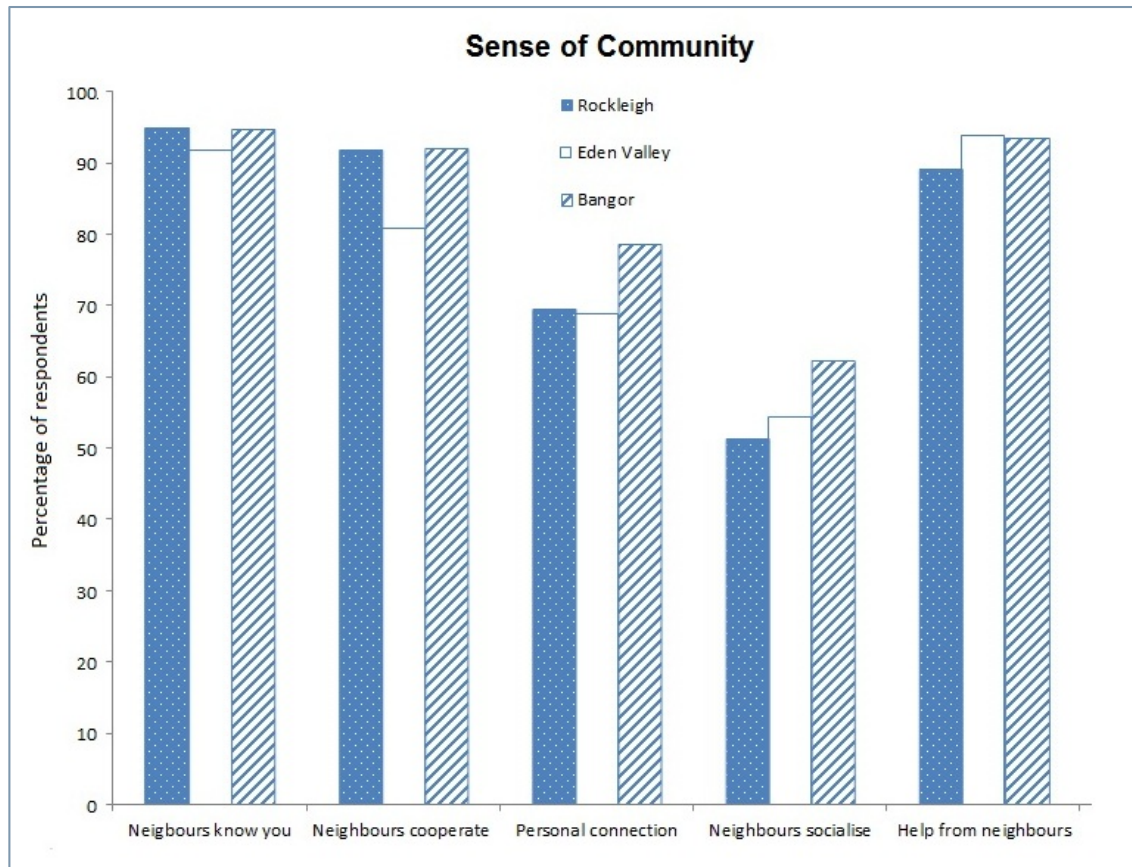
**Figure 11. Sense of community characteristics.**

Note: Multiple responses were permitted, with valid percentages shown.

The fire experience caused connectivity between neighbours that may not have otherwise occurred, as was evident in the following excerpt:

> *Yeah, with our neighbour up the road here – he came and helped us put out some of the sheds. He was good. Yeah. People we don't normally associate with – they were just here and helping. It was amazing, really.* **[B:15]**

Across the three field sites, comparable percentages were observed for feeling that neighbours know the interviewee (all >91%) and for being able to obtain help from neighbours if necessary (all >89%). Differences were seen for endorsement of the remaining three dimensions. Relative to other SA field sites, a lower perception of neighbourhood cooperation was observed for Eden Valley (81%), and both a higher sense of personal connection with neighbours (79%) and of neighbourhood socialising (62%) for Bangor[18].

---

[18] Data provide a general overview of each region and that there are likely to be areas within each of these regions where the sense of community is higher or lower than these averages.

This lower perception of neighbourhood cooperation in Eden Valley and higher perception of community connectedness and neighbourhood socialising in Bangor was evident during interviews:

> *I think it is pretty close-knit, good support I think would probably be it; when the chips are down, they come together pretty well.* **[B:10]**

This was confirmed by another interviewee in Bangor:

> *Well, it was good. When we had the fire, they brought plenty of food for us, here. We had heaps of food for about three weeks or a month. They kept on knocking on the door, bringing more and more. It was good.* **[B:15]**

The lower sense of neighbourhood connection and socialisation was also evident in the interviews, for example in Eden Valley:

> *It's not as though we – we didn't move up here because we were social. We moved out of Adelaide and I guess if you are a social-type person Adelaide is better whereas out here most of the people that are out here sort of want the quiet life.* **[E:15]**

However, Eden Valley interviewees confirmed the increased level of help and support provided by the community when it was needed:

> *We're not real close with anyone, we tend to stick to ourselves a little bit, but when the fire happened, then we started meeting so many people and quite a lot of nice people were coming up and as fires broke out they came up and gave us a hand with bits and pieces and whatnot so that was all good. So we did end up, because of the fire we met a lot more people but we don't go down for coffees or beers or whatever.* **[E:13]**

### *Bushfire Safety Information Accessed in the Prior Year*

Interviewees were asked: "What general bushfire safety information do you recall receiving in the 12 months prior to the January 2014 fires, and where did that information come from?" (Figure 12). Overall, interviewees recalled accessing information via the CFS website (34%), through communicating with friends, family and neighbours (29%), from local CFS brigade members (24%), from the CFS publication *Your Guide to Bushfire Safety* (23%), and from journal, magazine and newspaper articles generally (20%).
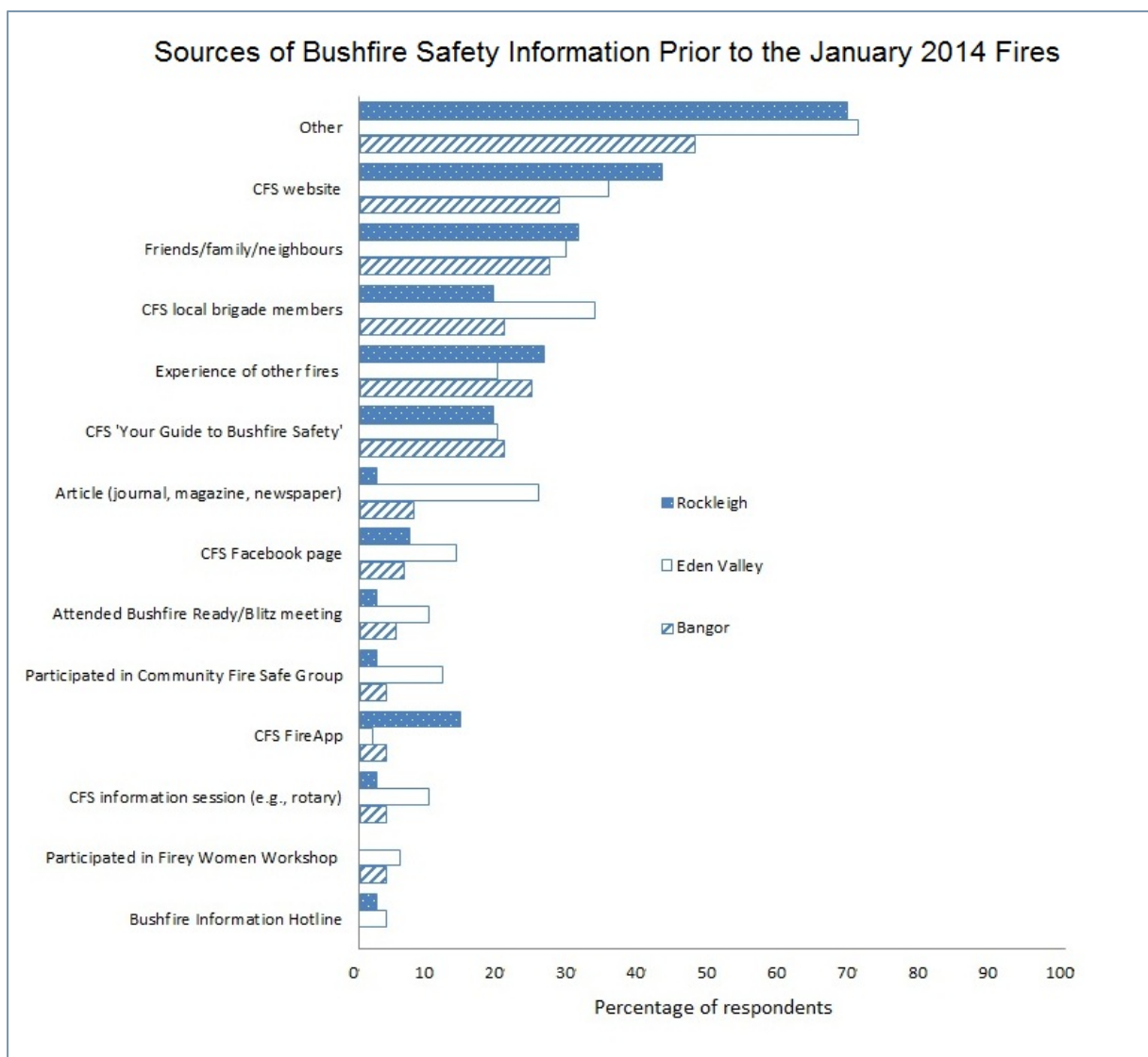
**Figure 12. Sources of bushfire safety information in the previous 12 months.**
Note: Multiple responses were permitted.

Interviewees also reported accessing 'other' (40%) bushfire safety information sources including CFS television advertisements (8%), brochures, flyers and notices from the general community (5%) and local council (5%), as well as through contact with past or present CFS representatives (4%) and reliance on previous experience (5%). For instance, one household in Bangor recounted regularly receiving CFS information in the mail and through local press:

> *A: We receive that sort of stuff all the time.*
> *Q: Through websites? Pamphlets?*
> *A1: Even in the mail, council newsletters.*
> *A2: Advertising in newspapers.* **[B:6]**

This family was familiar with the bushfire advertisements on television:

> *Yeah, I see them on television all the time and, yeah, it's pretty well publicised I think.*
> **[E:3]**

One family reported an annual spring tradition of watching a DVD on bushfire preparation that they received from the CFS:

> *After the big fires in Victoria, the CFS sent out a DVD and that was a few years back, and we put that on every year.* [R:12]

Overall, interviewees appeared more likely to recall a general message or 'position' of the SA CFS on a topic or concern rather than the particular form in which a message was disseminated. Although many interviewees were able to recall these general messages, few discussed the idea of a written bushfire survival plan.

Differences were observed between the three field sites. Rockleigh had the highest use of the CFS website (43%), and Bangor the lowest (28%). Eden Valley residents reported a higher use of personal contact with local CFS brigade members (33%) than did Bangor (21%) and Rockleigh (19%). Eden Valley residents reported higher use of media articles (i.e. magazine, newspapers) (26%) than did Bangor (8%) and Rockleigh (2%). A slightly higher use of the CFS Facebook page was seen in Eden Valley (14%) than in Bangor (6%) and Rockleigh (7%). Participation in CFS community group programs was slightly higher for Eden Valley, though low overall.

### Local Initiatives

The SA CFS provides a range of initiatives designed to encourage individuals to adequately prepare for a bushfire in their area. Interviewees had a number of perceptions about these CFS initiatives:

- Across the communities, it was evident that the CFS website was the primary information source and that they valued this highly since experiencing the fire.
- Interviewees knew that up-to-date information could be obtained via the FireApp, but that this required consistent phone reception and a smart mobile phone.
- Some interviewees kept and re-read provided CFS materials annually; however, many simply recalled having seen or received such material in the past, or had received then forgotten pamphlets or brochures they received.
- Some relied on individuals who used more of the CFS communication channels (e.g. Facebook, FireApp) to pass this information on to those lacking the knowledge or devices to do so themselves.
- Those who attended CFS workshops such as 'Firey Women' and 'Community Fire Safe' sessions valued this highly.
- Interviewees occasionally recalled the need to 'stay alert' or 'be prepared, be alert' as a CFS message, though none repeated the current 'Prepare, Act, Survive' message.
- Interviewees also noted their desire for increased communication of CFS teams with adequately equipped private firefighting groups.
- There were common reports across the communities of seeing CFS television messages through advertisements and media coverage.
- Across all three field sites, use of in-person CFS community engagement programs was low.

This study was not designed to answer questions about causal relationships between variables (e.g. between perception of CFS initiatives and preparedness) and further tailored evaluative studies would be required to answer such questions.

## Local bushfire risk and preparedness

This section discusses the research theme of the role of local bushfire risk perception and preparedness on individual preparedness and response.

### Risk Perception

Slightly more than half of interviewees (57%) felt that bushfire posed a risk to their home and family (Figure 13). Differences were observed across field sites in the proportion of interviewees who felt such a risk was posed: Rockleigh, 68%; Eden Valley, 40%; and Bangor, 61%. Despite this difference in the perception of bushfire risk, the mean level of concern about bushfire (rated: 1, *not at all* to 5, *extremely*) did not differ across the three sites, with a moderate level of concern about bushfire risk across all field sites (*M* = 2.74, *SD* = 1.38).

As part of the study researchers or the interviewee estimated the distance from the house to the nearest bushland. It is noteworthy that although no appreciable trend was identified in the relationship of proximity to dense bushland vegetation with *mean* level of concern about bushfire risk closer proximity was associated with a higher *frequency* of interviewees reporting high/extreme perceived threat (Figure 14).
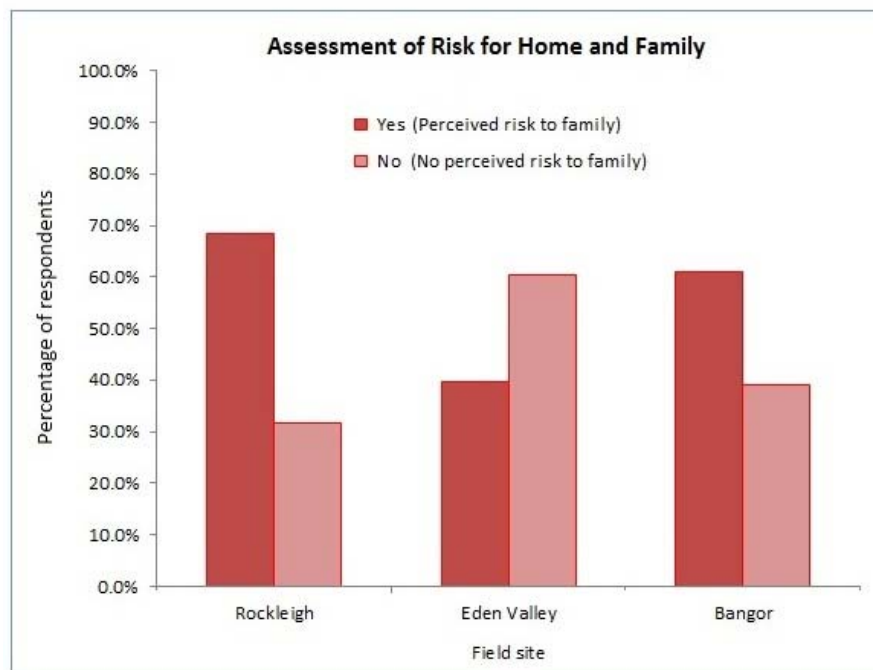


Figure 13. Perceived bushfire risk for home and family by field site.

**Perceived Bushfire Threat to Property by Distance to Vegetation**
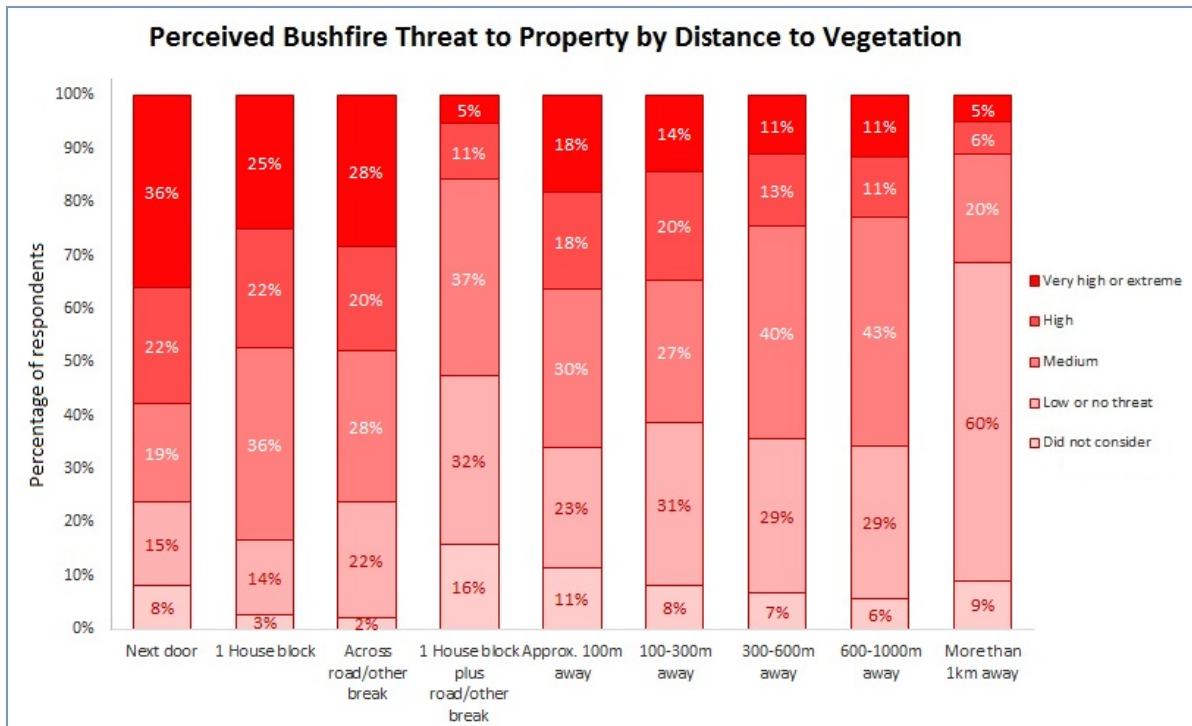


Figure 14. Level of concern about bushfire risk by distance to nearest bushland vegetation.

Occasionally, interviewees made explicit distinctions between perceiving that bushfire risk is present, and expressing a level of concern about such risk (e.g. perceived threat, but low level of concern) as this interviewee reported:

> *I didn't think the house was under threat because I deliberately had spare paddocks around the house.*
> *Q: How did you feel about the risk of bushfire here?*
> *A: Maybe susceptibility.*
> *Q: If you could put it from one to five?*
> *A: Probably six. I mean, if you are caught up with that and you don't know what you're doing, you'd probably get cooked but if you know what you're doing, it's not a big problem.* **[B1]**

Other interviewees perceived a threat and had a high level of concern:

> *Q: Over the last few years, how concerned have you been about the threat or possibility of fire?*
> *A: Very.*
> *Q: On a scale of one to five, where five is 'extremely' […]*
> *A: Five.*
> *Q: Five. Okay. So you've thought that your family and maybe your home might have been at risk?*
> *A: Absolutely.*
> *Q: Why?*

> *A: Because of the proximity of where I live. I'm only a stone's throw away from the SA water reserve, and just the vegetation and just the locale. Every year, it's a threat. It's been 60 years since the last fire.* **[B:20]**

In Rockleigh, interviewees who were well prepared for a potential bushfire held a lower level of concern. However, the event of the bushfire dramatically changed their perspective:

> *Q: Over the last few years, how concerned have you been about the possibility of a fire impacting your home here?*
> *A: I wasn't.*
> *Q: Not at all?*
> *A: No, because it's farming property, it's pretty well cleared and accessible for fire trucks and things like that, so I wouldn't have thought it would get quite so out of control but the winds and everything on that January one was unbelievable.* **[R:8]**

This change in perceived risk was also experienced by an interviewee in Eden Valley:

> *We got this one totally wrong. I didn't consider that we were at anything like the risk that it turned out to be. I thought that if a fire comes through here, it's going to be a grass fire, it's going to be quick and very few buildings will go up. That was way wrong.* **[E:15]**

These results suggest that there were similar levels of risk perception in Rockleigh and Bangor. However, the interview data shows that there were lower levels of risk perception in Eden Valley. The following section looks at various aspects of bushfire preparation, including whether interviewees had a bushfire plan, what this plan was, their general perceptions, and preparatory actions prior to the threat or impact of bushfire.

### Bushfire Survival Plan

As part of the interview protocol researcher teams were briefed to prompt interviewees regarding their use of written plans so that their frequency of use could be examined. In line with previous bushfire studies[19] the majority of interviewees reported that they had a mental plan (62%) to prepare for bushfire prior to the January 2014 fires; however, almost one third had no plan at all (27%) and those with a written plan were in the minority (10%). These figures did not differ appreciably between the three sites (Figure 15), and the interviews suggest that the majority of interviewees may have recorded their plans other ways (e.g. discussed and memorized). For instance, one household in Bangor had verbally discussed their plans:

> *Verbal plan actually. I guess because of the risk of living here, that was really important and I guess because my husband has been involved with the CFS in the past,*

---

[19] McLennan J, Wright L and Birch A, (2014) Community understanding and awareness of bushfire safety: October 2013 bushfires, Part 1: residents' experiences in three areas, Bushfire CRC, Australia,

*he knew that it was very important to have a plan. I think there's just been a lot more media attention to it, so yeah just paying attention to that.* **[B:4]**

Another Bangor household had held talks about different escape routes:

*Well, I don't know if it was written there. I wouldn't say where it is right now […] but I always make sure that obviously that, you know, you go and we've had different talks about going into* [the neighbour's] *vineyard or – the beauty of this place is that we've got about three different ways that we can go. It was always the plan to evacuate* [my wife] *if a fire came.* **[B:14]**
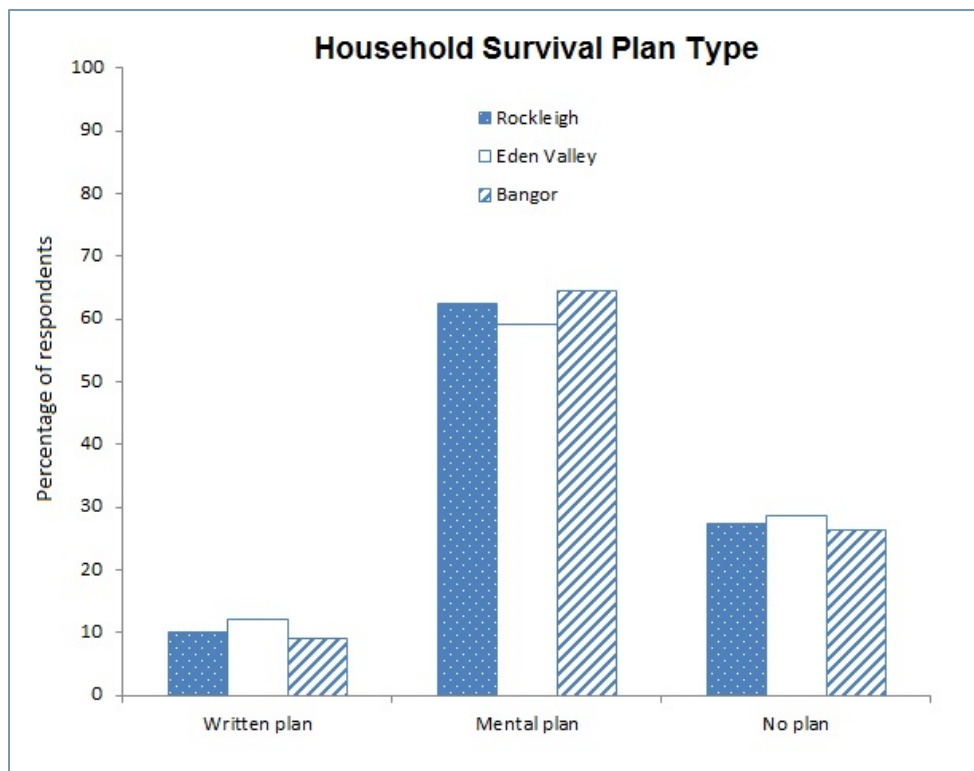


**Figure 15. Type of household survival plan by field site.**

However, other households had not discussed their plan:

*It would have been unspoken. It's just common sense. Yeah. If it got real bad, we just would have jumped down in between that wall and the house, and then fight it from there if I had to.* **[B:15]**

And on at least one occasion, the husband had a plan for his wife to leave that was not shared by her:

*[I] said, "Look, go." But it didn't happen, she said, "No, I'm staying." Just couldn't get her to, you wouldn't budge her, she said, "No way, I'm not leaving my house, I'm not losing my trees."[20]*

Whilst another had a formal written plan available within the household:

*We are in a bushfire area and we're alert all the time. There's my fire plan book up there.* **[R:1]**

Across all field sites, the largest proportion of interviewees planned to stay and defend (30%), with the second largest planning to leave as an entire household (24%) and 19% had no concrete plan. The remainder comprised those who intended for some individuals to stay whilst others left early (15%) and those who intended to wait and see (12%) (Figure 16).
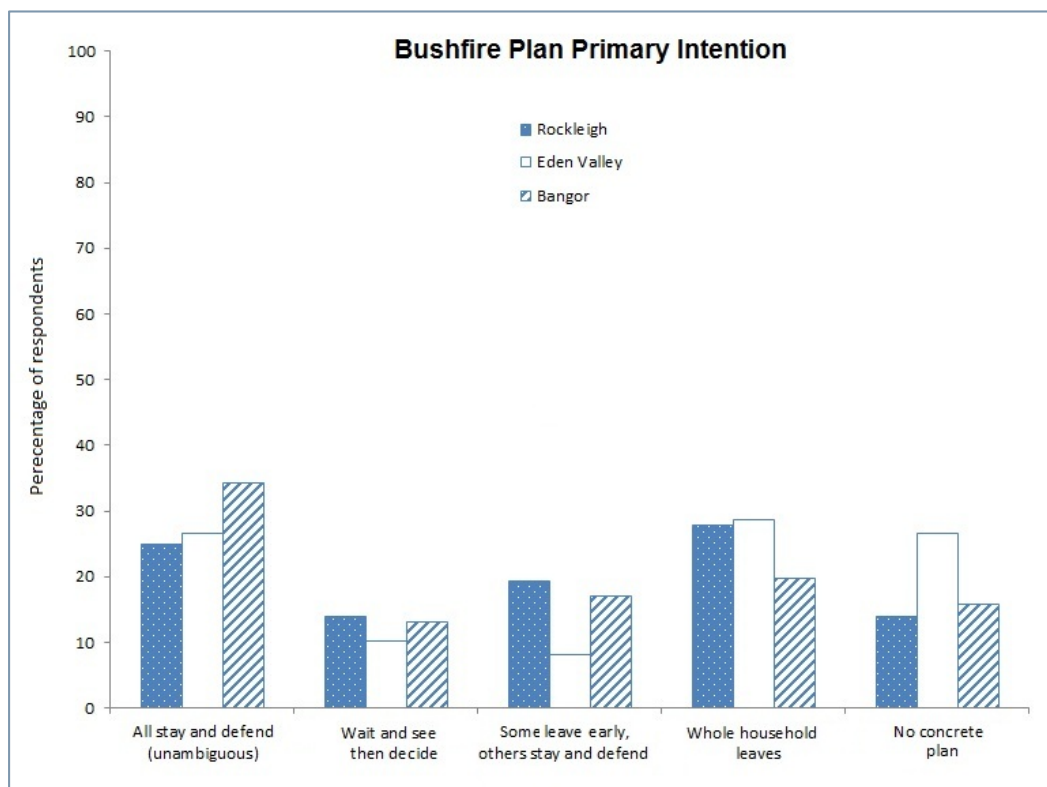


**Figure 16. Primary intention for bushfire plan by field site.**

In Eden Valley, most interviewees planned to leave as a whole household (29%), stay and defend (27%), or had no concrete plan (27%). Across the field sites, Eden Valley had the highest percentage of interviewees with no concrete plan, as is evident in this household:

*Q: Did you though ever talk about what would happen in the event of a fire, what would we do? Did you have any discussion with your husband?*

---

[20]Source: non-transcribed interview audio file; quote identified during comparative analysis.

> *A: I guess we've talked about it but nothing specific. Not really, no.* **[E:5]**

In Bangor, one-third planned to stay and defend (34%), and one-fifth to leave as a household (20%). In Rockleigh 25% planned to stay and defend, while 28% planned to leave as a household. For example, this Bangor family indicated:

> *Our official plan was – yeah, we did. We had all the hoses rolled out. We made sure the tank was full. We made sure the farm unit was full. We are conscious of keeping things clear – weeds and that sort of stuff.* **[B:18]**

However, this Rockleigh family planned to leave:

> *Go. Basically that's it. Grab the dogs and go, that's it.* **[R:12]**

Across the three sites, seven out of ten interviewees stated they had discussed their bushfire plan with others, though only 16% said they had practiced it. Only 25% of interviewees indicated that they had a back-up plan if their initial option was no longer available. Sixty-five per cent of pet owners said they had included their pets in their plan. Some residents had concrete criteria for making a decision about actions they would take in relation to the fire:

> *With that fire, it was basically if it got past the pipeline – the pipeline runs all the way across the bottom of the foothills there and we knew that the fireys were all working at the pipeline so we figured if it gets past there, then we'll go and like I say just because it's all dry paddocks between us and there, we Figured it could get here pretty quick if that happens. That was our trigger point, I guess.* **[B:7]**

Some interviewees made their decisions based on the advice of others:

> *I had to please my son too, you know, he's a firefighter. We're not and he's the man that knows the stuff and he was the one telling us to get out, so in the end I took his advice. I knew it was still two kilometres away.* **[R:1]**

One-quarter (26%) of interviewees reported use of CFS materials in the creation of their bushfire plan, with 20% having used a *Bushfire Survival Plan* template and 25% having referred to *Your Guide to Bushfire Safety* (Figure 17). Slightly lower use of CFS materials was observed for Bangor interviewees (18%), and much higher use in general for Rockleigh interviewees (44%). However, Rockleigh interviewees did not provide sufficient information to specify their use of the *Bushfire Survival Plan* template and the *Your Guide to Bushfire Safety* materials: further data on this is needed.

Overall, it appears that many interviewees had not specifically used CFS materials in the creation of their plan. Some interviewees recalled previously released CFS bushfire preparedness materials:

*There's a thing like a little book, you open it up. It's about A4 size, and it's got a big picture of a fire on the front and CFS. But that might be going back a fair while. It's only general information […] think they're vague. Just for the sake of handing something out.* **[B:11]**

*The CFS did produce a brochure and they've now changed their logo, I think. It used to be stay and defend – and here's my wife coming back – and make the decision, stay and defend, or leave and leave early. And it's now – I forget what the current saying is but it doesn't matter and at the time that that was their theme, they issued a brochure and there was step by step: stay, if you've got this, this, this and this.* **[E:15]**
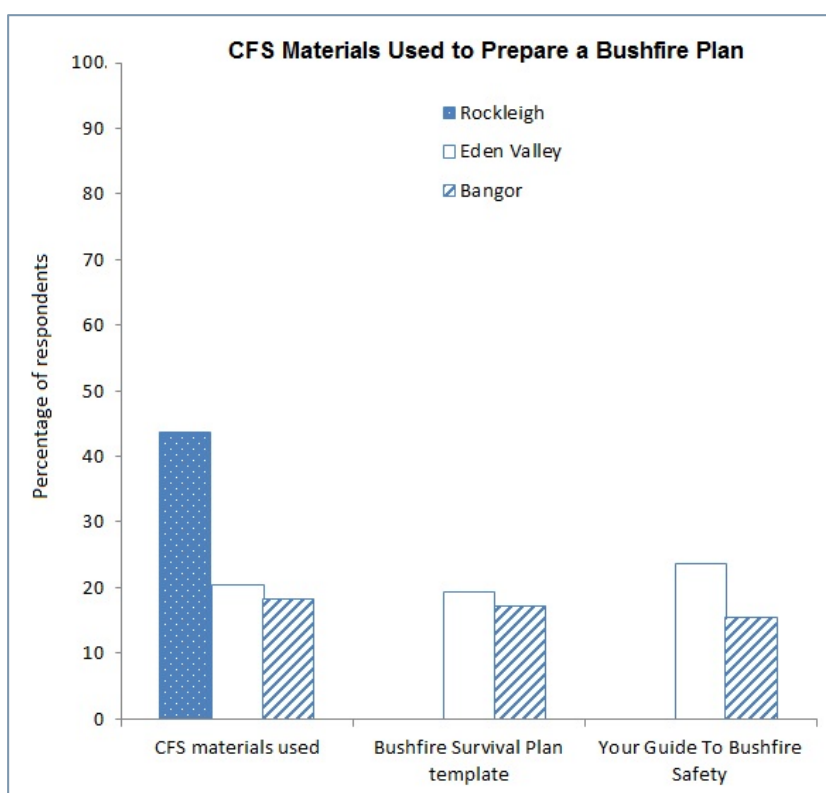


**Figure 17. Use of CFS materials in preparing household bushfire plan.**
*Note.* Rockleigh interviewees mostly did not refer specifically to either the Bushfire Survival Plan template or Your Guide to Bushfire Safety.

In summary, across all three communities, a little more than one quarter of households reported not having a bushfire plan. Of those households with a plan, for most their plan was mental, with only 10% of households had a written plan. It appears that in many households with a plan there had been some discussion about bushfire threat and safety but the extent to which discussions had occurred could not be quantified. In relation to plan content (leave, stay and defend, wait and see) Bangor residents were somewhat more likely to intend to stay and defend their properties, Rockleigh and Eden Valley residents were somewhat more likely to intend that all members of the household would leave. Across all three communities, 10-14% of residents planned to wait and see how a bushfire threat developed before

making a final decision about leaving or staying. While a little less than half of Rockleigh residents reported using CFS material in their bushfire plans and preparations, the type of material used was not identified. A small number of Eden Valley and Bangor residents made specific reference to the *Bushfire Survival Plan* template or the *Your Guide to Bushfire Safety* document.

### *Specific Bushfire Preparation: Long-Term*

Interviewees had taken a variety of different preparatory actions well before the January 2014 fires, with these recorded in an unprompted manner (Figure 18).
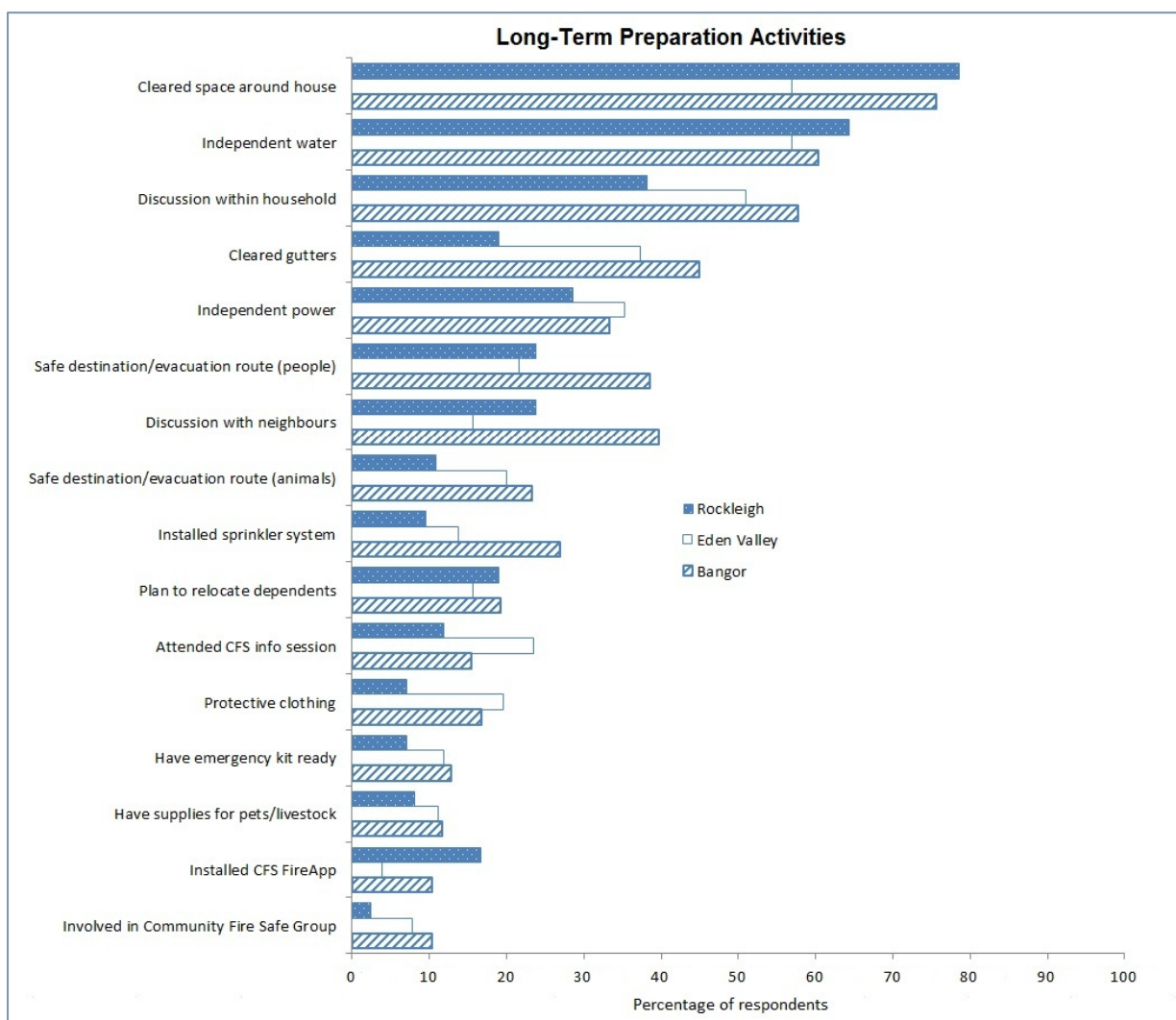


**Figure 18. Long-term bushfire preparation activities by field site.**
Note: Multiple responses were permitted. Animal-related actions limited to those with pets or livestock.

Looking at the difference in preparedness behaviours between the three areas, Figure 18 shows that CFS information session attendance was highest in Eden Valley (24%); however, this is where the lowest use of the CFS FireApp was seen (4%). Residents of Bangor discussed household bushfire risk with their

neighbours the most (40%), and more often reported having a safe destination and route mapped (39%). Rockleigh interviewees reported the lowest household discussion of bushfire risk (38%), lowest use of sprinkler systems (10%), and lowest involvement in Community Fire Safe Groups (2%).

The most frequently reported actions overall were clearing space and vegetation around their house (71%), ensuring availability of an independent water supply (60%), and discussing the household bushfire risk with members of the household (51 %), followed by clearing gutters (36%), ensuring independent power access (33%), identifying a safe destination with a mapped evacuation route (30%), and discussing bushfire risk with neighbours (29%).

> *We've tried to keep trees and things well away from the house as you can see. It's kind of hard to keep the weeds down but working on that. […] Keep it clear all the way round the fencing.* **[R:3]**

> *So we made up a thing where we put sprinklers on the roof. It's got its own pump on the shed.* **[B:11]**

Very few interviewees had installed the CFS FireApp (10%), and fewer still participated in a Community Fire Safe Group (8%). One reason why there may be a low uptake in the CFS FireApp is the lack of mobile coverage in many areas, as this interviewee attests:

> *No, there's no mobile coverage here at all.* **[B:18]**

The interview data also highlighted that some interviewees were confused between the app and the website:

> *I was keeping in constant contact with the App on the website. I don't think I had the App I think I only had the website.[R:8]*

Interviewees were also unaware of how to utilise the CFS FireApp:

> *Q:* *Do you use the app or the website?*
> *A:* *I just look up CFS current incidents.*
> *Q:* *On the website?*
> *A:* *Yeah, I just Google it.*
> *Q:* *Because you can get an app.*
> *A:* *I know but I don't know how to use it. [E:9]*

However, interviewees reported downloading the CFS FireApp either during the fire or afterwards:

> *A:* *I've actually got the app.*
> *Q:* *Now is that before or after?*
> *A:* *That was during. [E:1]*

Where households included children and pets, the analysis found instances of a focus on the children, with pets left behind, and instances of both the children and the pets being included in the household bushfire plan, as this interviewee explains:

> *Everyone is to leave, pets and all. [B:11]*

Few households had readied supplies for their pets and livestock (11%). One household had made preparations for their pets:

> **[Name]***'s already got the cat stuff ready to go. The dogs have their own bowl.* **[R:9]**

However very few of those with pets or livestock explicitly reported having mapped out a route to an identified safe destination for their animals (19%). One reason for the lack of planning a route to a safe destination (with or without animals) can be attributed to reservations in contemplating the unknown:

> *Q: Had you thought about where you might go?*
> *A: Not really because it would really depend on where the fire was as to where you would go.* **[E:1]**

Across the communities, interviewees were more likely to make practical and physical changes to their properties as long term bushfire prevention activities. The long term preparation for a potential bushfire by preparing alerts and information access through online and social media were one of the activities less likely to occur. Activity in Community Fire Safe Groups were least accessed. Whilst activities in preparation for the needs of pets and livestock were also limited.

### Information, warnings and action

This section describes interviewees' experiences, decisions and actions immediately prior to and during the fire event. This includes information sources used, awareness of CFS communication initiatives, decisions and actions on the day of the fire, information-seeking when aware of the fire threat, initial intentions and ultimate actions. It also looks at perceptions of damage and loss, as well as warning messages.

#### *Specific Bushfire Preparation: Immediately Prior to Fire*

Across the field sites, interviewees reported having been aware of general cues and warnings about bushfire risk to their property: Total Fire Ban (14%), Fire Danger Ratings (17%), hot weather and high winds (63%), SES extreme heat warnings (3%),[21] and other fires in their area (22%). A number of interviewees also reported having no awareness of cues or warnings about fire risk immediately prior to

---

[21]The SA State Emergency Service (SES) issues extreme heat warnings when an average daily temperature reaching 32°C or higher is predicted for three consecutive days (see http://www.ses.sa.gov.au/site/community_safety/heatwave_information/extreme_heat_plan.jsp)

the fire (12%). Consequently, most interviewees were aware of the weather conditions as they impacted on them directly, for instance:

> *No. I'd say well, we try to keep out of the paddock because we don't want to be driving around when it's on a hot day, just stay in the house here and just monitor what's going on.* **[E:10]**

This Bangor interviewee recognised the potential implications of the Fire Danger rating:

> *It was going to be a 'catastrophic' day. I was supposed to work and I rang up and said, "I'm staying home."* **[B:15]**

And this Bangor resident was aware of the warnings of weather conditions that were likely to negatively impact on their area:

> *Yes, I remember the weather people. The ABC was saying we are going to have the storm coming. It's dry. There's not much moisture in it. It's a worry, and nobody was surprised when it caught on fire.* **[B:20]**

Figure 19 shows the *specific* sources that alerted interviewees to the bushfire threat. Most interviewees were alerted by smoke (49%), calls from neighbours or friends (42%), warning messages on radio stations (26%),[22] seeing flames (23%), and mobile phone emergency alerts (21%).For instance, this interviewee was alerted by smoke:

> *We could see it in the distance. Out there, we could see the smoke belching up and the flames.* **[B:15]**

Use of the CFS website to become aware of the fires was higher in Rockleigh compared to either Bangor or Eden Valley. In both Eden Valley and Bangor more interviewees than Rockleigh reported becoming aware of the fire through emergency alerts issued by mobile and landline (Figure 19).

Very few interviewees reported accessing CFS Facebook (5%) or FireApp (4%) feeds and no use of Twitter was reported. Various 'other' sources of immediate alert included seeing or hearing emergency services vehicles, direct contact with known CFS or SA Police staff or associates, local businesses and SMS messages from family and friends, and reaffirmed the importance of visual cues and seeing neighbours relocating pets and livestock. Phone calls were recalled by interviewees:

> *Well no, I got the phone call and he said, "There's a fire at Rockleigh"; well, Rockleigh's a fair way away and I went out and I couldn't see any smoke and then he rang and he said, "It's coming your way."* **[R:10]**

This interviewee points out the community network of phoning neighbours:

> *Oh yeah. I think when it happens nearly everyone rings each other to prepare.* **[B:26]**

whilst this interviewee refers to emergency alert message:

---

[22] Radio programs used included local and national ABC stations (e.g. 105.9 and 891 AM).

> *Well, I think not long after he rang, the alert thing went off on all the phones, the SMS and then we get a phone call too.* **[B:25]**

Clearly, both the community and CFS calls were well received by this interviewee:

> *And people were constantly in contact. The CFS were constantly in contact. Yeah, we were getting plenty of messages and we've got a lot of friends.* **[B:7]**

After first becoming aware that a bushfire was in their location, interviewees expressed a moderate average level of concern (rated: 1, *not at all* to 5, *extremely*) about fire actually threatening their home (*M* = 3.12, *SD* = 1.34), and this level of concern did not differ appreciably across field sites.
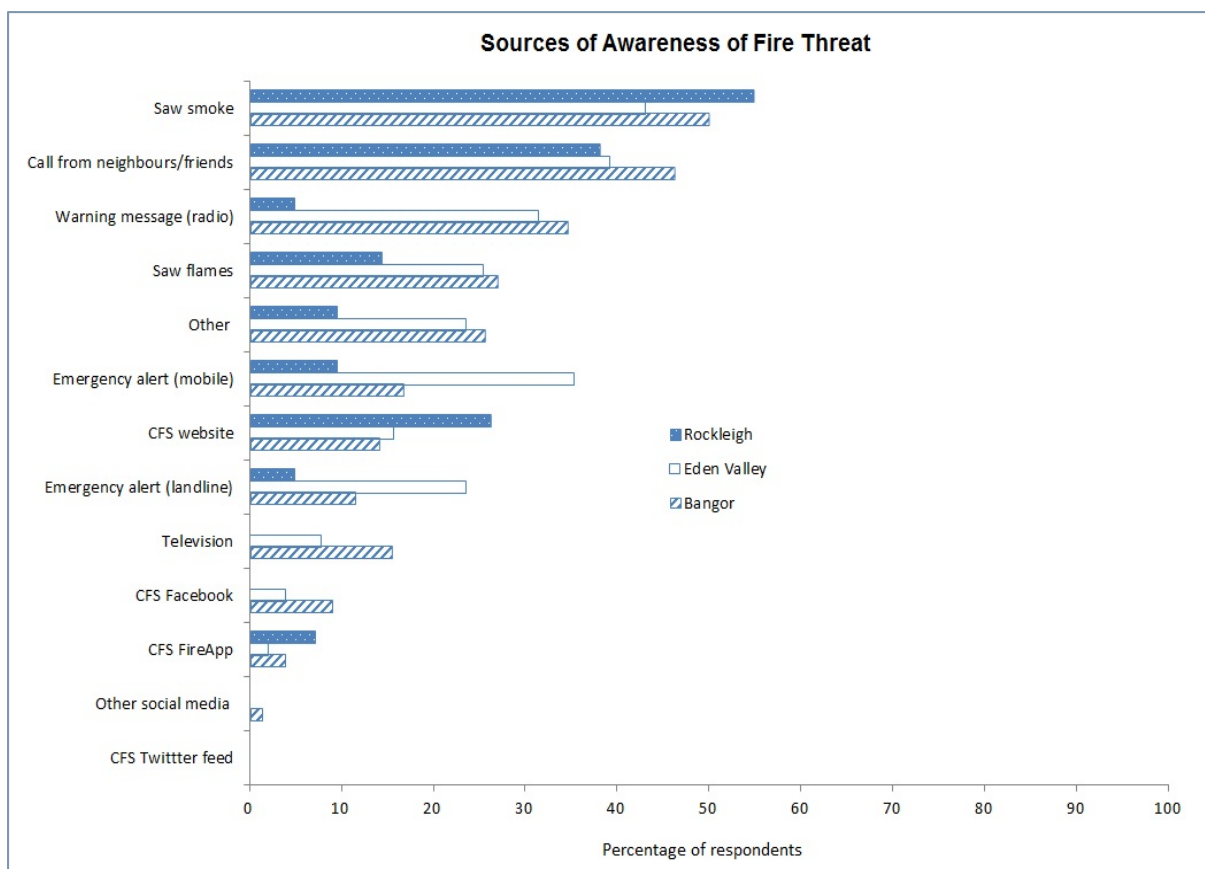


**Figure 19. Information sources alerting interviewees to bushfire threat by field site.**
Note: Multiple responses were permitted.

Across the three sites, when interviewees were first alerted that a bushfire was in their area, and that it might threaten their home, they took a variety of actions (Figure 20). The most common of these were turning on the radio for information (39%), phoning or contacting friends, neighbours or family (34%), checking the CFS website (33%), waiting and seeing what happened (27%), and relocating pets and livestock (23%). The interview data reveals that many interviewees referred to 'radio' as the CB radio

rather than ABC radio. Those who did listen to the radio found this as their source of being alerted to the bushfire, or in using it as an information source as this Eden Valley resident recalls:

*From the smoke and just listening to the radio for updates. [E:1]*
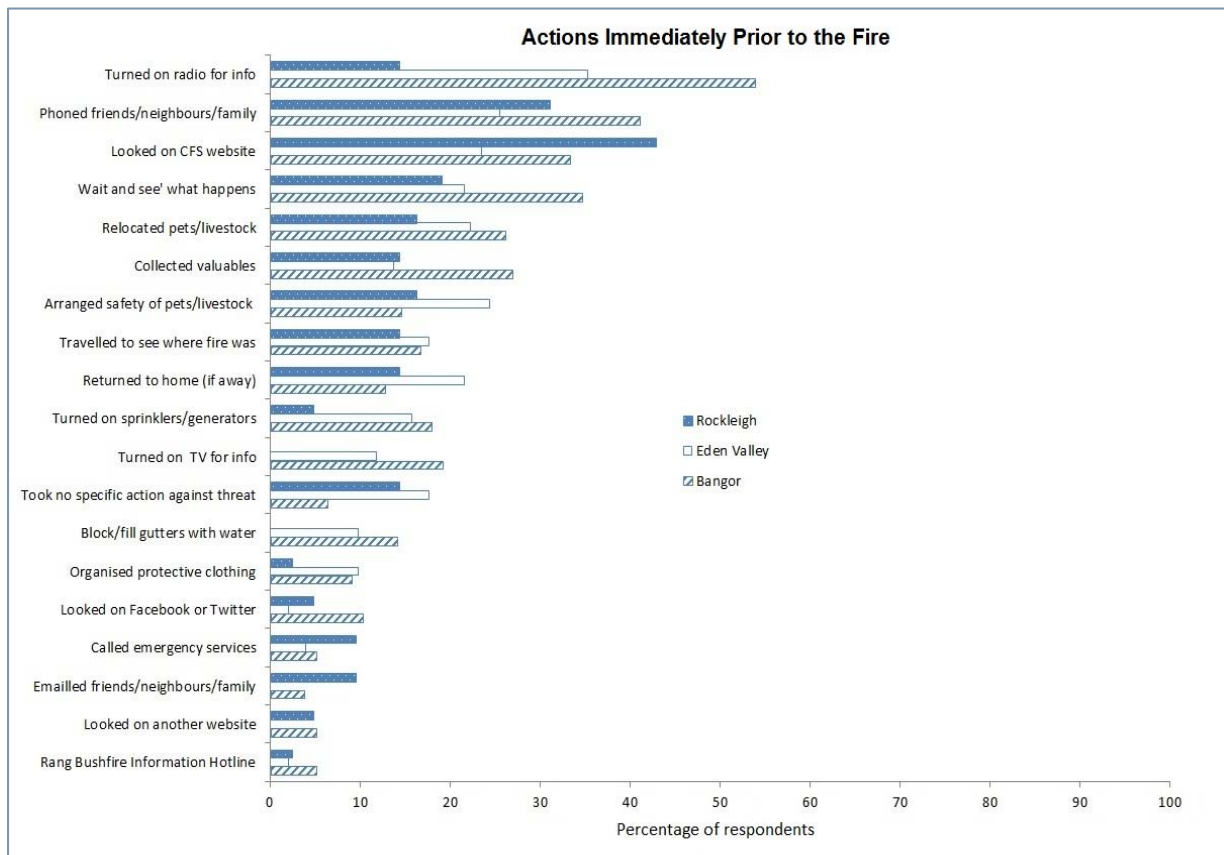


**Figure 20. Actions immediately prior to the fire.**

Note: Multiple responses were permitted. Animal-related actions limited to those with pets or livestock.

Figure 20 also shows significant differences in the actions by geographic area. In Bangor the predominant action mentioned by the interviewees was to turn on the radio while in Rockleigh the radio was less likely to be mentioned but accessing the internet was more common. These differences are exemplified by the following contrasting quotes:

*I think the first thing was a text message, the warning text messages that we get, that was the first, and then you sort of got out the portable radio and you listened to that.* **[B:10]**

This interviewee, when alerted by smoke, immediately accessed CFS information:

*Q: And what did you do after you saw smoke?*
*A: […] jumped on the CFS website.* **[R:1]**

Some interviewees took more active but less common measures, for example, turning on sprinklers (14%) and blocking and filling gutters (9%):

*I would make sure that all the sprinklers were on and then… yeah and [my husband] was doing the gutters and then if he was off doing something else, then I would re-check the gutters and I would move the sprinklers around.* **[B:27]**

Interviewees reported being aware of a range of CFS public communication initiatives concerning bushfire threat or impact in their location (Figure 21). Most were aware of the national warning system provision of bushfire advice, warning messages and SMS emergency alert messages (77%), as well as warning messages and CFS interviews broadcast via radio stations (76%):

*Q: The SMS phone alerts?*
*A: We were aware of them, yes because we'd seen the ads on television.* **[B:27]**

Many were aware of this content being accessible on the CFS website (72%), though less than half of interviewees reported being aware of CFS landline (48%) and television (44%) messages:

*She has got the CFS site, the alert site up; she looks at that all the time to see what's happening around the area. We've got the Facebook site that pops up and tells you what's happening. But that's all, there's no other communication.* **[E:13]**
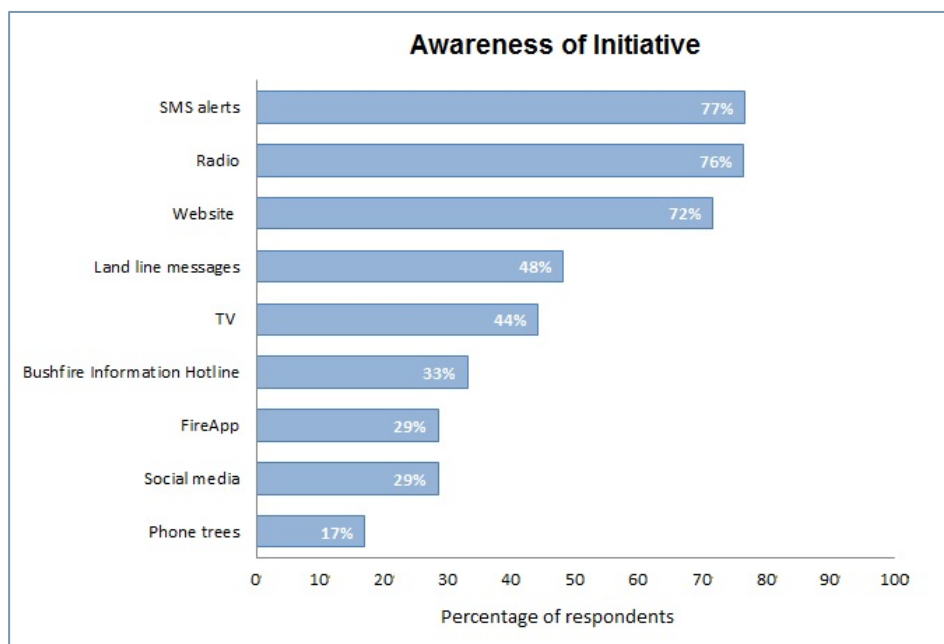


**Figure 21. Awareness of CFS communication initiatives.**
Note: Valid percentages are shown.

Although fewer interviewees were aware of 'phone trees' (i.e. a network of contacts and a communication plan) in their area (17%), approximately one-third reported awareness of the Bushfire Information Hotline (33%), the CFS mobile FireApp (29%) and CFS social media feeds (i.e. Facebook, Twitter) (29%):

*Q: Were you aware of the Bushfire Information Hotline?*

*A: Not really no. I think it's probably on the website, I've seen a 1300 number, is it? I think I've seen a phone number there, but as I said I didn't even realise how relevant it was to us at the time.* **[R:8]**

Interviewees were also asked to rate the perceived usefulness of the various CFS initiatives on a five-point scale (from 1, *not at all useful* to 5, *extremely useful*) (Figure 22).
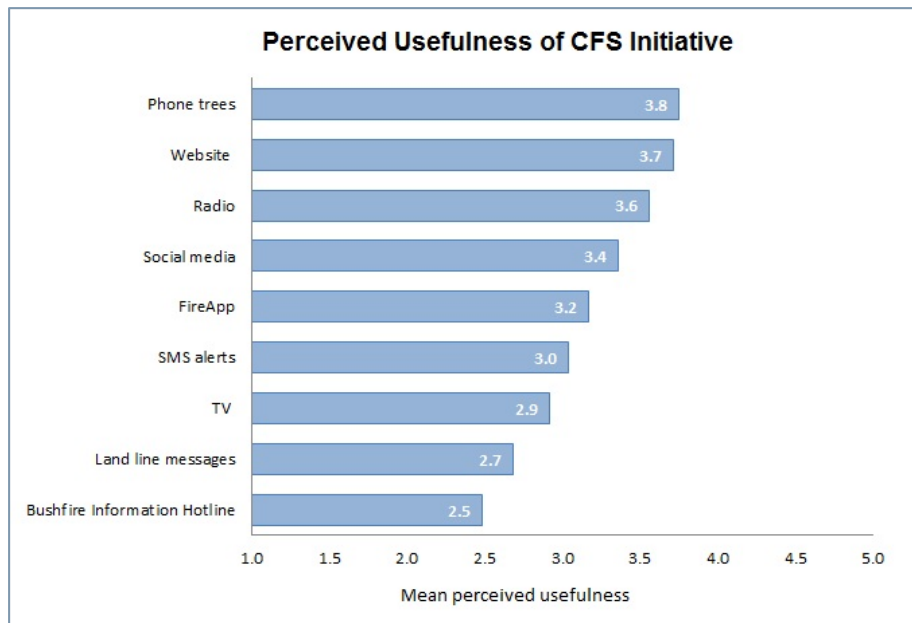


**Figure 22. Mean perceived usefulness of CFS initiatives.**
Note. Perceived usefulness rated from 1 (*Not at all useful*) to 5 (*Extremely useful*)

Initiatives perceived to be most useful – for those already aware of them – were phone trees, the CFS website, radio messages and interviews, CFS social media feeds, the CFS FireApp, and CFS emergency alert messages. Slightly lower usefulness ratings were recorded for CFS television messages and interviews, landline messages, and the lowest rating was recorded for the Bushfire Information Hotline. It should be noted that these mean figures exhibited standard deviations of 1.3 to 1.7 points, a high variability due to the smaller number interviewees providing ratings for these initiatives.

Interview data also revealed that where the Bushfire Information Hotline was used, interviewees reported both positive and negative experiences of this service.

This interviewee reported the support received from the hotline:

> *Yeah. And plus I mean ringing up the hotline they sort of help you out a fair bit too. I relied on them. [B:9]*

Whilst this interviewee reported finding the information available on the Bushfire Information Hotline similar in content to other information services:

> *A: When you're lonely in the middle of the night and you've got a major fire front coming down towards you, if you can't get the information off the radio or the CFS reports aren't up to date …*
>
> *Q: Have you ever come across the Bushfire Information Hotline?*
>
> *A: Yeah, that was no different. The information was the same. I tried all that. It was the same information. [B:6]*

This interviewee rated the messages on ABC TV similarly:

> *Well, they said to keep in touch with the ABC Channel 2 and I found them absolutely useless because what we were getting on the radio was a simulcast.* **[E:7]**

Despite a lower average usefulness rating than for radio, this interviewee rated emergency alerts highly:

> *A: The text message is the one we acted on.*
>
> *Q: So, out of one to five – five being extremely useful…*
>
> *A: Five.* **[B:5]**

### Information-Seeking

The majority (74%) of interviewees were home on the day of the fire, which was expected given that both the fires and the interviews occurred during weekdays. When first alerted to the bushfire threat, 85% sought further information from the sources presented in Figure 23. Interviewees sought further information through multiple sources, with family and friends being the most frequently consulted source (46%), followed by radio stations (44%) and the CFS website (43%). Televised information was sought by 16% of interviewees, with less than 10% accessing social media, the CFS FireApp and the Bushfire Information Hotline. Very few interviewees sought no additional information (5%).

Other information sources, not originally listed in the ISC, included direct observation of fire events, consulting specifically with neighbours, using UHF radio channels, and attempting to directly contact known volunteers or members of local CFS brigades. In Eden Valley, use of radio stations (43%), the CFS website (37%) and consulting family and friends (28%) were most common. Many more Bangor residents than for the other two sites reported accessing radio stations (63%) or consulted family or friends (56%). However, far fewer Rockleigh residents reported accessing radio stations (12%), though greatest use of the CFS FireApp was recorded here (12%).
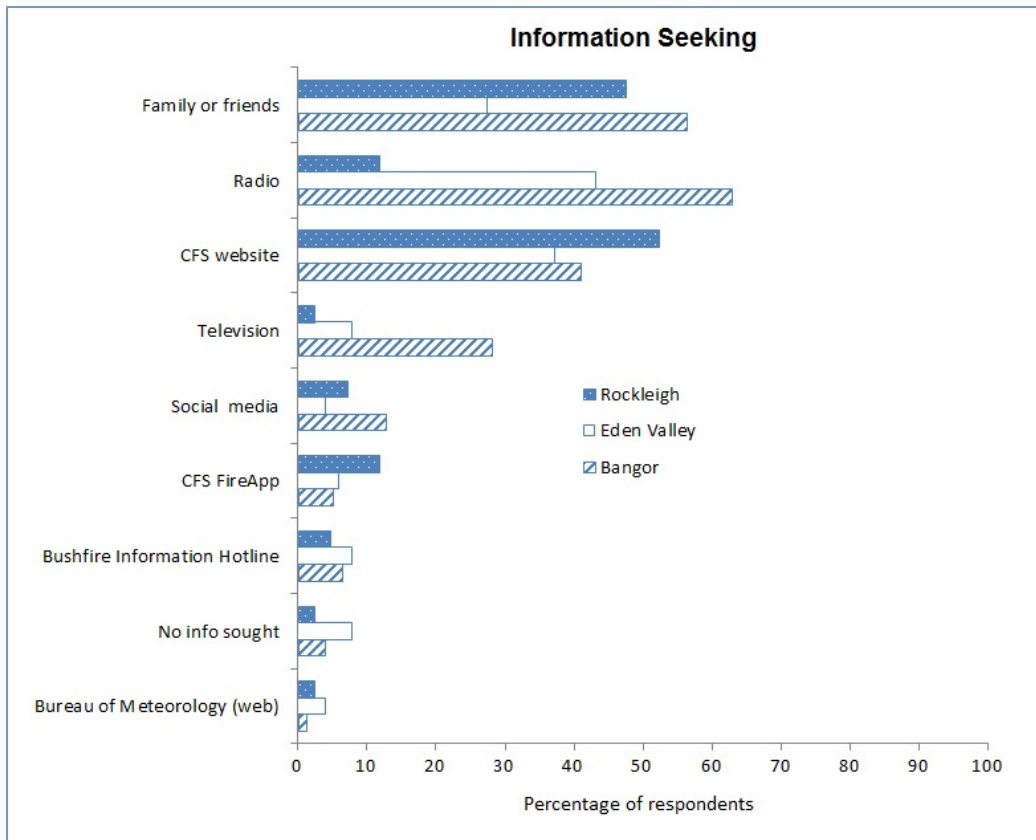
**Figure 23. Information seeking by field site.**

Note: Multiple responses were permitted.

Some interviewees who were not at home at the time of the fire reported being informed about it from family and friends. Having access to the car radio to receive information was also reported:

> [S]omeone at work said "oh it's heading towards Cambrai" and stuff like that so I come home.[...] I probably come through at about – probably Angaston at 7:30 at night thinking once again – I had the radio on. They were saying it was heading towards Cambrai. **[E:9]**

The following excerpts highlight the high use of radio-presented information and how this was shared locally between neighbours:

> It was only the radio. The radio was, say, 90% more but our information all came through the ABC radio. And I think that was pretty accurate and pretty up to date. **[B:2]**

> Mainly mobile phones, you're talking to your neighbours and they're picking things up on the radio. **[B:24]**

Despite the low use of social media, those who did access it obtained valuable information. For example, this resident recognised that social media provides access to current information:

> *Now we've always avoided Facebook, I don't believe in it. However, I had to join Facebook to be able to get up to date.* **[B:27]**

### Information Reception: Perceptions of Emergency Services

During the interviews, it was evident that there were households who had not received and understood CFS information and warnings. Indeed, these households held a preconceived notion that the CFS would issue a warning to evacuate in person, by knocking on their door. This was evident during the interviews as shown by the following quote:

> *We thought we were fine but all of a sudden it came up with black clouds and the smell of smoke and we said, "That's it, we're out of here." We got no knock on the door, nothing and I can understand that because they were clearly busy themselves.* **[E:7]**

Evidently, this perception meant that households had not been aware of or heeded the information about bushfire preparedness and were instead remaining in their house even when it was likely that the fire could impact their property. As one example of a potential reason for this, some residents were not able to receive *electronic* early warnings about a fire in their area, or did not have access to the internet or smart phones. Many did comment, however, that they had received a 'computer' message on their landline. Another elderly couple relied on the radio for information:

> *Q        Do you have mobile phones, you and your wife?*
> *A:       Yeah, but in the fire none of them would work.*
> *Q:       So you heard those messages on the radio, did you?*
> *A:       Yeah, mainly on the radio.*
> *Q:       Was that ABC?*
> *A:       Yeah.* **[B:19]**

Other elderly residents relied on their community networks for information:

> *Q:       And how did you first hear about that fire?*
> *A:       Well the neighbour rang me and said did I know that there was a fire just up from Donkey Flat and I thought, "Oh. No. I hadn't heard."* **[B:16]**

And, in one case, a household received information about the fire threat from a relative residing elsewhere:

> *Q:       How did you first hear that the fire had started?*
> *A:       My grand-daughter rang me up from Whyalla.*
> *Q:       Oh right. How did she know?*
> *A:       She found it on the website. She was watching the website. But I'd never seen a policeman or a CFS person. At no stage did anyone tell us there was a fire here.* **[R:6]**

Local members of the CFS were concerned about the prevalence of this perception:

*Yes, and that's one of the little raw spots in the area. They still have it in their mentality that there will be a CFS truck at every front gate. But we can't.* **[R:9]**

Some long-term residents consider that new arrivals into an area do not have the same understanding of fire safety and services that long-term residents do.

*And these fires that have all started in Rockleigh in the last few years have all been down that way where the new people are and they are stupid things, using a chainsaw out in the middle of the dry paddock on a stinking hot day or an angle grinder or whatever. And what they should do is get a community meeting up and not come up and say, you've got to leave and all that sort of thing, because if you buy a house in the country, you shouldn't have to leave unless it's really – you'll know when to go. But they should tell people what not to do during that period and how to prepare their properties.* **[R:6]**

One interviewee claimed that new arrivals inferred the same role for CFS as other emergency services, such as the police:

*Maybe because they do come from the city, they think the CFS are paid staff, and that we are at a station and that we have 10 trucks. Here, we most probably have three CFS trucks that surround this area, and that's it.* **[R:9]**

### Initial Intentions Regarding Bushfire Threat

Interviewees described a number of broad intentions when they first became aware of a bushfire threat. These are categorised into five key types in Figure 24.
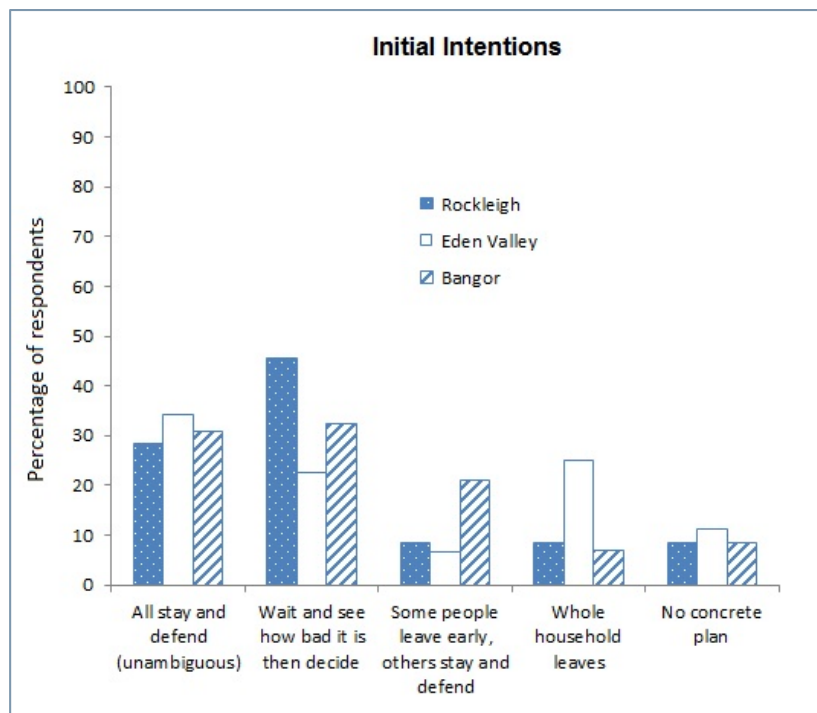


**Figure 24. Initial intentions by field site.**
Note. Forced choice response with valid percentages used.

Overall, interviewees primarily intended to wait and see (33%) before making a decision, or to stay and defend (31%). Fourteen per cent intended for some to leave early with others staying to defend (14%), and fewer intended for the whole household to leave (13%), or had no concrete plan (9%). However, fully 25% of Eden Valley interviewees intended for the whole household to leave, and 21% of Bangor interviewees chose the option of splitting the household between leaving early and staying and defending. Importantly, some residents' statements suggested that their initial plans were held with a degree of uncertainty, for example:

> *Q: Initially your plan was to – you'd stay and defend the place?*
> *A: Defend it, yeah, but I don't know how good that would have been. Because there wouldn't have been any water pressure from the hose.* **[B:8]**

An Eden Valley resident describes their initial plan to stay and defend on the basis that a real threat would never arise:

> *Q: So you initially thought no, we're going to stay and defend?*
> *A: Mm.*
> *Q: That was your initial – okay.*
> *A: Because we didn't really think it would come to this place.* **[E:5]**

Figure 25 shows that those interviewees on a residential block primarily intended to wait and see (64%), that those on large lifestyle-type blocks mostly intended to stay and defend (30%) or to wait and see (28%), and that those on larger farm-type properties had similar percentages to those on lifestyle properties.
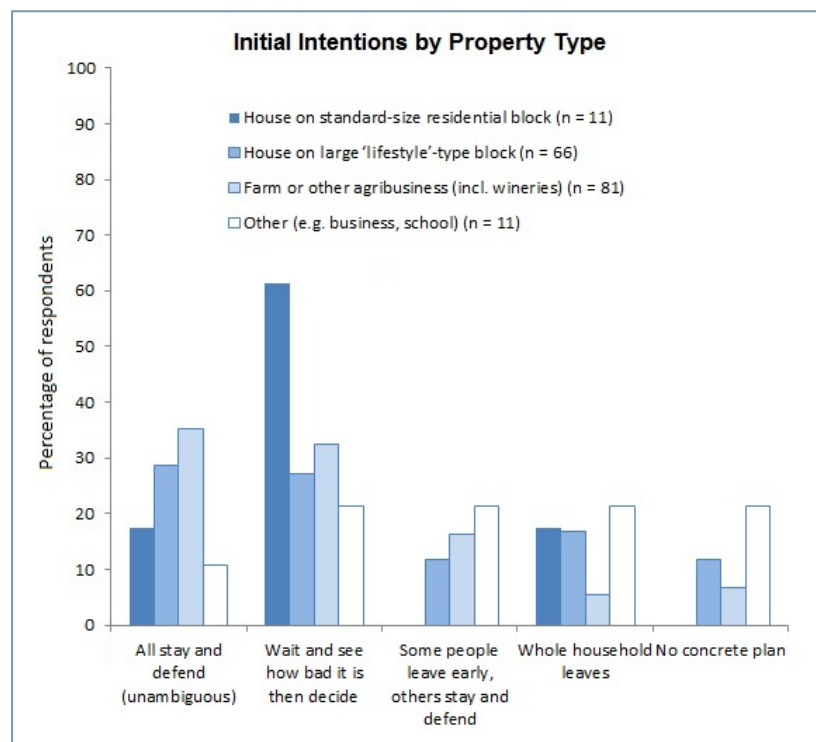


**Figure 25. Initial intentions by property type.**

The main difference between these two is that 18% of those with lifestyle properties intended to leave early, whereas 6% of those with larger agribusiness-type properties intended to do this. 'Other' property types included accommodation, community centres and large businesses (e.g. a zoo). An important caveat here is that within the distribution of property types, those categorised as a 'farm or agribusiness' were often simultaneously the interviewee's place of residence, and results should be interpreted accordingly.

### *Ultimate Actions on the Day of the Fire*

When under imminent threat of bushfire, interviewees were similarly divided among the following three decision types (Figure 26): all stay and defend (26%); wait and see and then decide (24%); and leave as a whole household (26%). Slightly fewer decided for some to leave early whilst others stayed (22%), with very few still not having decided on a course of action (1%).

In Eden Valley, the most common decision was leave as a whole household (42%) with very few opting to wait and see (9%). In Bangor, many interviewees opted to wait and see (29%), though this figure was comparable with those opting to stay and defend (24%), those splitting the household between leaving and defending (23%), and those leaving as a whole household (21%). In Rockleigh, slightly more interviewees opted to wait and see before deciding (35%), or to all stay and defend (30%). A comparison can be made between the actions that were ultimately carried out (discussed in this section) and the intentions that people had before the fire approached (see previous section).



**Figure 26. Ultimate actions by field site.**
Note: Forced choice response with valid percentages used.

In each field site, the proportion of those who ultimately chose to leave as a whole household was approximately double that for the intention to do so. In each of the sites, the p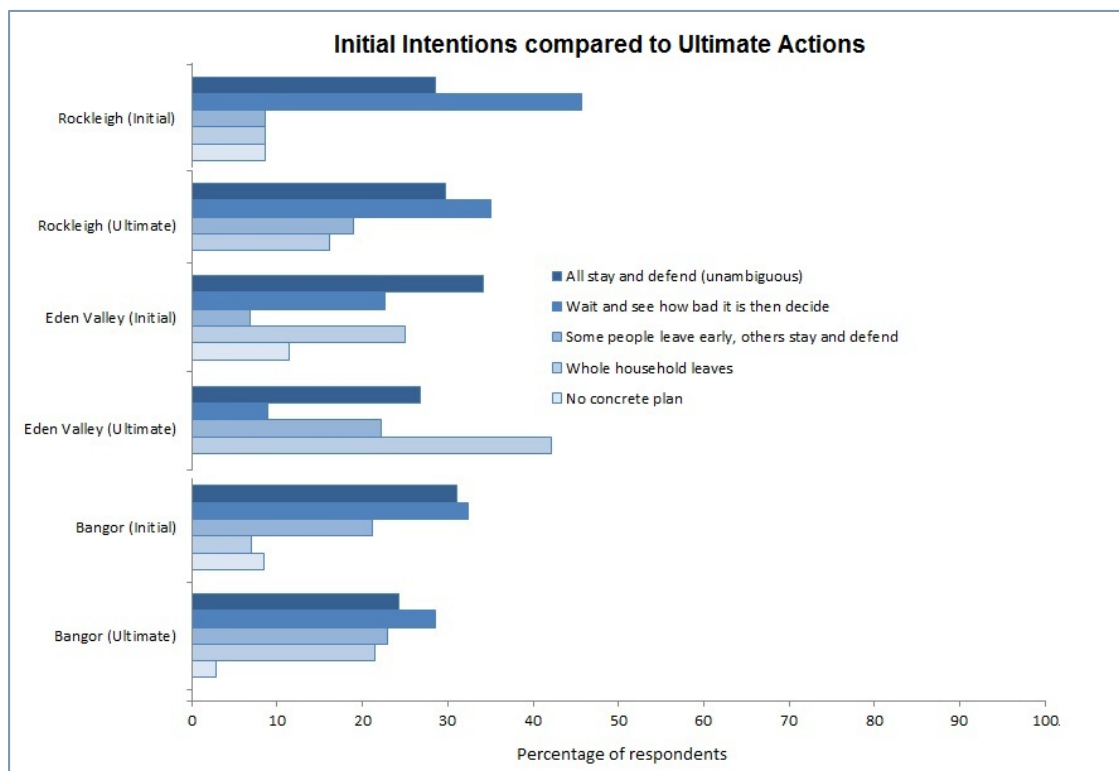roportion of those intending to stay and defend did not differ appreciably between intention and action. In Eden Valley, those waiting and seeing effectively halved from intention to ultimate action. Moreover, in both Eden Valley and Rockleigh, the percentage of those choosing to split the household between staying and leaving more than doubled from intention to action.

This Bangor resident decided to leave when the threat became too great:

> *No, just when I knew that that fire was coming but then I thought the threat of it was too great. I just left.* **[B:8]**

whilst this Bangor household stuck to their initial plan:

> *Once we'd made the decision, and we both agreed on it, that's what we did. There was no questioning it, or umm-ing and aah-ing. We just went.* **[B:5]**

Interviewees who had indicated that their plan had changed provided a variety of reasons for doing so.[23] These included some household members being absent, or other individuals being present, and unanticipated reactions from individuals (e.g. refusal to adhere to original plan). Plans sometimes did not account for not being at the property upon becoming aware of fire threat (26%). Interviewees also reported having their misconceptions about fire challenged, and underestimating the size, intensity and speed of the fires (e.g. wind change effects). The need to manage panic and fright in themselves and others was also noted, as well as how suggested actions from emergency services personnel were incompatible with their original plans (e.g. advice to leave). Lastly, some interviewees underestimated the time required to complete required actions (e.g. clearing fuel, collecting family members).

### *Triggers to Act*

Various triggers informed interviewees' decisions to leave when threatened by fire (Figure 27). For those where only some of the household members left early, the greatest triggers were seeing smoke (36%), telephoning family, friends and neighbours (33%), and seeing flames (30%), followed by face-to-face advice from neighbours (18%) and media information and warnings (12%).

---

[23]These reasons were recorded in researchers' notes during interviewing.
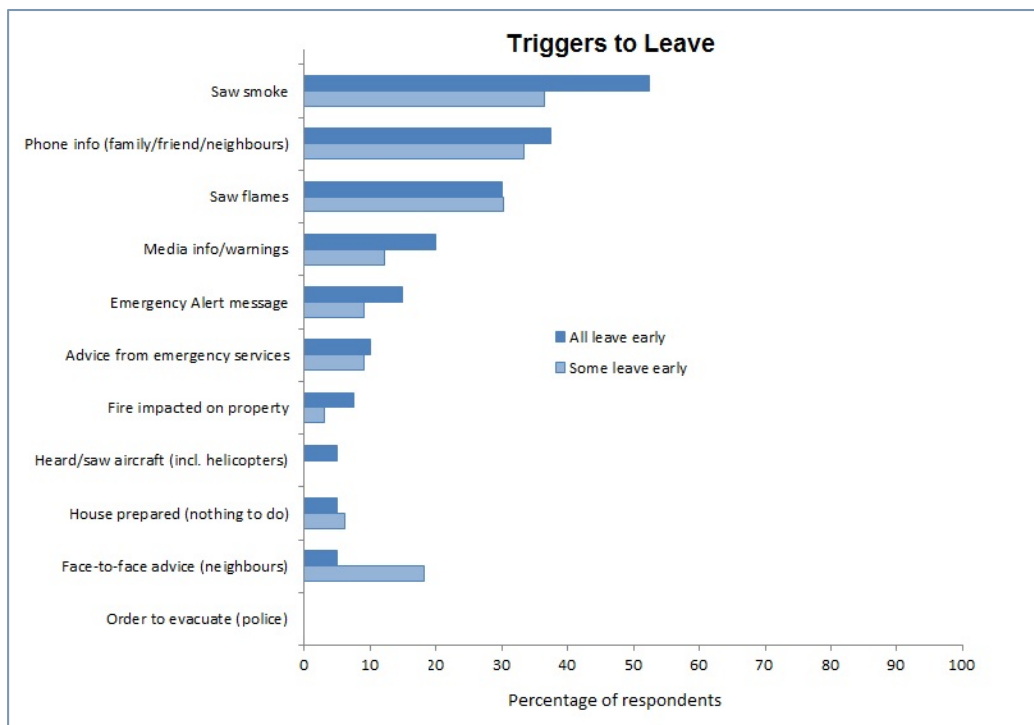
**Figure 27. Triggers to leave for those ultimately doing so.**

Note: Multiple responses were permitted.

Interviewees cited seeing smoke (53%) and media information and warnings (20%) as triggers for leaving early, particular amongst those who chose to leave as a whole household. Fewer than 10% reported emergency services advice and emergency alert messages as triggers (<10% each). And though none of the current sample was ordered to evacuate, this is not to say that evacuation-type experiences were not had by other community residents.

The trigger for this interviewee was the realisation that the fire was greater than their ability to contain or restrict its movement:

> *Q: What was the trigger for you to evacuate? What was the cause that said, "Okay this has happened, I need to leave"?*
> *A: The fact that the first break that we did put in for the dozer we nearly got it but once again we were too late and once [the fire] got over that I thought, "This is going to go on and on and on. They're going to go to the next fallback line."* **[B:14]**

Similarly, this Bangor interviewee based their trigger point on whether the movement of the fire could be restricted:

> *With that fire, it was basically if it got past the pipeline […] we knew that the fireys were all working at the pipeline so we Figured if it gets past there, then we'll go and like I say just because it's all dry paddocks between us and there, we Figured it could get here pretty quick if that happens. That was our trigger point I guess.* **[B:7]**

Whilst interviewees were comfortable talking about triggers to leave, they did not talk in terms of triggers to stay, or wait etc. Rather, staying seemed to be their default position and as such did not require a trigger beyond recognizing there was a threat.

### *Reflection upon Plan and Action*

Among those who had previously experienced fire, just over half (55%) felt that this had informed their behaviour and decisions at the time of the January 2014 fires. For instance, this Bangor interviewee described how a previous fire impacted on their bushfire preparedness:

> *We had it worked out from that fire two years ago. I think between that fire two years ago on the hill ridge and 'Bangor 1', I think we have passed sentences and comments, consolidating our learnings. Rather than sitting down and having one little meeting we* **[instead]** *constantly reviewed and evolved and talked about this and that and the other. When we put this veranda in we chose all hardwood, so it wouldn't be so flammable and stuff. We wanted wood so we went hardwood.* **[B:6]**

Similarly, this interviewee was more aware of the preparation necessary for leaving:

> *I think the one that we had before, that's when I was more aware of how to pack and be ready. So I've always thought back to that one so that when I've done gear here, I've always packed it. So going back from the previous one helped me be prepared if anything did happen.* **[B:26]**

As a result of the fires, a third of interviewees (33%) reported that they would change their plan; however, 55% indicated that they would have done something different within their original plan. During interviews, researchers noted common themes within the latter group of interviewees, namely they would:

- Clear (graze) more, or more often, or change the vegetation type on the property
- Install more fire breaks
- Invest in more, more adequate, or higher-capacity equipment (e.g. tanks, pumps, hoses, firefighting units), and check its working status
- Unlock gates for emergency services access
- Prepare more adequate emergency kits (e.g. medications)
- Invest in more, or more comprehensive insurance (e.g. fencing, livestock)
- Move animals sooner (e.g. horses)
- Involve leasing residents in overall property fire planning
- Pack more valuable possessions (e.g. documentation, written lists) in relocation kits
- Upgrade communications equipment (e.g. radios)
- Consider physical fitness and sleep requirements of different planned actions.

Indeed, these interviewees gave specific examples of the changes they would make:

*We've talked about that bank there, because the fire travels up a bank more quickly than it goes down, perhaps looking at getting some fire retardant plants.* **[B:10]**

Another spoke of creating more effective fire breaks:

*I think, like I just explained to you, I'd be doing a bit more spraying and killing of the grass. It's one thing mowing it but it can still burn but I would just spray a bit more and just wipe it right out. Have a good break around.* **[E:10]**

And preparations to the house were also being considered to assist residents who planned to stay and defend:

*I'd like to get a sprinkler system on the roof but not a plastic one, probably metal.* **[E:7]**

Community connectedness was occurring on a small scale between some neighbours and was seen to have the potential to inform future planning (as well as general community connectivity) as shown by this quote:

*Like our neighbours up this road here invited everyone up the road for a barbie after and everyone got to share their stories and how we'd do things differently. And then the neighbours on the other side, we've done the same, we've met up just of an evening and just hearing other people's stories and how they – what they did, gives you ideas too and things that you didn't think of on the day. So definitely we've been in contact with our neighbours more than ever which is lovely.* **[E:2]**

Reflecting on what had occurred and what could change raised the issue of insurance for this household:

*We have said we should sit down and work out what we did right and what we did wrong and in our diary we've tried to write things down, when they happened and what we thought we should do differently, and a lot of that is probably increasing insurance.* **[B:13]**

Finally, many interviewees (45%) indicated that there was additional information they wished that they had at the time of the fire, including:

- How to prepare themselves to reduce panic
- A better understanding of how to effectively prepare for departing their property
- An increased understanding of the effects of fire-related loss (e.g. cleanup, insurance costs), and
- Information about how to be more connected to individuals and organisations within their community (i.e., 'community-connected').

Preparedness was a consideration made by this interviewee:

> *Everybody does things when they start panicking and stuff like that. We probably should get something like some sort of box somewhere where you've actually got all your stuff in where you're not running around like a* […] [E:9]

# SUMMARY AND KEY FINDINGS

The interview findings are summarised below in relation to the three research foci articulated by the CFS. Given the desire to also identify the impact of three very different kinds of fires, the summary of findings focuses on differences between the sites.

Nearly half of interviewees reported no damage or loss due to the fires (47%) and 20% reported experiencing fire threat with no property damage. Minor damage was experienced by 23%, and 11% experienced major property damage (two reported having lost their house). Approximately one third reported additional significant property damage.

A greater percentage of interviewees in Rockleigh and Bangor reported previous bushfire experience than those in Eden Valley (Figure 5). Interviewees in Eden Valley were more likely to have full house and contents insurance than interviewees in the other sites, with Bangor interviewees reporting the lowest rates (Figure 8). Insurance coverage for livestock and pets and machinery and equipment were lower than home and content insurance (Figure 7). The interview data revealed reports of losses of stock and fencing and in many of these instances property owners were did not have these assets insured.

## Community and programs

Figure 11 compared the three communities on five community-connectedness indicators. When the rankings (1 lowest, 3 highest) of the communities on each characteristic are summed, Bangor residents reported the highest level of overall sense of perceived community connectedness. Compared with Rockleigh and Eden Valley residents, a higher percentage of Bangor residents also reported:

- Discussing bushfire preparations with friends/family/neighbours
- Being made aware of the fire by phone calls from friends/family/neighbours
- Phoning friends/family/neighbours about the fire
- Seeking more information about the fire from friends/family/neighbours.

Overall, the CFS web site was the most frequently reported specific source of bushfire safety information prior to the fires. Bangor residents reported less use of the site (31%) compared with Rockleigh (45%) and Eden Valley (37%) residents. Rockleigh residents were more likely to report use of CFS material in their planning and preparation for bushfire but few identified the specific type of material. A small number of Bangor and Eden Valley residents made specific reference to the *Bushfire Survival Plan* template or the *Your Guide to Bushfire Safety* document. Participation rates in CFS-organised meetings, groups and activities were somewhat low across all three communities. However, the percentage of Eden valley residents who attended a CFS information session prior to the fire (22%) was double that of Rockleigh residents (11%). Overall, across all three communities those interviewed mostly recalled general messages from CFS about bushfire safety without referring to a specific source. The figure of 10% of households overall with a written bushfire plan is the highest reported so far from Bushfire CRC and Bushfire and Natural Hazards CRC post-bushfire interviews with residents of fire-impacted areas.

## Local bushfire risk and preparedness

Eden Valley was the only study site where there was a greater percentage of interviewees who did not perceive their home and family to be at risk from bushfire (Figure 13). However, all three field sites reported similar levels of bushfire concern.

The relatively lower level of perceived bushfire risk in Eden Valley, despite levels of bushfire concern being consistent with other sites, requires further investigation. One potential variable to explore within such investigations is the proximity of significant or dense bushland to residential properties (Figure 14), as this was close for all three sites: Eden Valley (95% < 500m) Bangor (67% < 500m) and Rockleigh (88% < 500m). Higher reported levels of bushfire concern in Bangor and Rockleigh could be a function of the impact of previous fire exposure. In relation to beliefs that were not elicited in the research, it could also reflect higher levels of 'faith' in emergency services. That is, it is reasonable to be very aware of or concerned about fire, but to have made sufficient preparations to not feel at risk, as one interviewee said:

> *From all the guidelines, CFS guidelines, this is actually a safe haven and well and truly.*
> *[R:4].*

To put this quote in context the interviewee is a case worker for a community service provider and is referring to his place of work. The organization takes bushfire preparedness seriously and have a documented bushfire plan created from the CFS information which was activated during the fire. They also have access to, and monitor the CFS website 24 hours a day on high fire danger days. The organization has generators and have carried out extensive clearing around the property to a distance of 200 metres down to soil level.

Despite the popularity of social media and smart phones, installing the CFS FireApp was not a popular option for long-term preparedness or a source of information to become aware of a fire threat. However, the interview data revealed that there were some interviewees with access to smart phones who were limited in their knowledge about the CFS Fire App functions and availability. There was also uptake of the CFS Fire App during and after interviewees' experiences of bushfires.

The long-term preparation across the sites were preparing properties by carrying out practical activities such as clearing space around the house (71%), accessing and independent water supply (60%) and holding discussions with household members (51%). Least likely long-term preparations included being involved in a Community Fire Safe Group and installing the CFS FireApp. Of these activities, Rockleigh residents were more likely to install the FireApp (18%) but least likely to attend a Community Fire Safe Group (2%) (Figure 18). 12% of Rockleigh interviewees, 24% of Eden Valley interviewees and 15% of Bangor interviewees attended a CFS Information Session.

There was no consistent pattern of CFS material usage to design a bushfire plan across the three sites. The majority of interviewees had not used CFS materials in the creation of their bushfire plan. However, approximately one quarter (26%) reported use of CFS materials in the creation of their bushfire plan, with 20% having used a *Bushfire Survival Plan* template, and 25% having referred to *Your Guide to Bushfire Safety* (Figure 17). Slightly lower use of CFS materials was observed for Bangor interviewees

(18%), and much higher use for Rockleigh interviewees (44%), though many of the latter elected not to specify the particular CFS materials used.

The types of information sought by interviewees during the fire were similar to those accessed immediately prior to an awareness of the bushfire threat (Figure 20). The CFS Website and Radio remained high in residents' information seeking, whilst the CFS FireApp and Bushfire Information Hotline continued to receive lower levels of access (under 10%). This suggests that from the first awareness and during the fire, people's information seeking activities remained relatively unchanged.

The percentages and ratios of interviewees having a mental bushfire plan, a written plan or no plan were fairly consistent across all sites. Most had mental plans, and a little less than half as many had written plans. There were more interviewees who had no plan than there were those who had a written plan. Around one in ten had no bushfire survival plan (Figure 15). Thus, 9 out of 10 interviewees had some sort of plan.

### Information, warnings and action

Seeing smoke was the most frequently named source of awareness of a fire threat, followed by calls from neighbours, radio warning messages and seeing flames. However, Rockleigh residents were less likely to use the radio and mobile alerts as sources, but more likely to receive awareness through the CFS website (Figure 19). In Bangor, residents are more likely to connect and socialize with neighbours (Figure 11) which may have some bearing on neighbours being one of the major sources of awareness of fire threat in this region (Figure 19). However, despite low levels of socialisation and personal connection with neighbours in Rockleigh and Eden Valley (Figure 11), neighbours were one of the key sources who alerted these residents to the fire threat (Figure 19).

The CFS Website (72%) and radio messages (76%) were two of the most known initiatives and were also perceived to be the most useful. This could perhaps be due to their accessibility, particularly where interviewees do not have access to a smart phone or have easier computer access. Whilst interviewees were also aware of landline messages (48%), they were perceived to be of less use. Conversely, social media feeds (29%) were less known initiatives but were perceived to be more useful than the CFS FireApp which also relatively well known (29%) (Figures 21-22).

Whilst the radio and CFS Website were two of the highest accessed sources, social media and the Bushfire information Hotline were least accessed. Whilst 'waiting to see what happens' was a trend in Bangor, this occurred closely whilst Bangor interviewees collected valuables and relocated pets and livestock.

**The most common primary intention was to stay and defend (30%)**, followed by the whole house evacuating, only part of the household leaving (24%), or no concrete plan (19%). Waiting to see was the least reported initial plan (between 10 and 20%), with the exception of Eden Valley where some people leaving early and some staying to defend was the least common intention (between 5 and 10%), and the whole household leaving was the most common intention (Figure 16). Across the field sites, Eden Valley had the highest percentage of interviewees with no concrete plan.

When they first became aware of bushfire threat, interviewees described a number of intentions (Figure 24), but overall they **reported similarly high levels of primarily intending to either wait and see (33%) or to stay and defend (31%).**

Under imminent threat of bushfire, leaving as a household rose relatively in popularity as an option according to three decision types (Figure 26): all stay and defend (26%), wait and see (24%), and leave as a whole household (26%). However, ultimately, numbers for the option 'some people leave early, others stay and defend' increased in Eden Valley and Rockleigh. Also, the number of Eden Valley interviewees who had initially decided to 'wait and see', reduced for ultimate action whilst 'the whole household leaves category' increased (Figure 26).

In relation to ultimate actions on the day of the fire, most interviewees from Eden Valley evacuated the whole household, whilst most residents in Bangor and Rockleigh decided to wait and see. **In each field site, the proportion of those who ultimately chose to leave as a whole household was approximately double the intention to do so.** In each of the sites, the proportion of those intending to stay and defend did not differ appreciably from intention to action. In Eden Valley, those waiting and seeing effectively halved from intention to ultimate action. Moreover, in both Eden Valley and Rockleigh, the percentage of those choosing to split the household between staying and leaving more than doubled from intention to action.

In relation to triggers to leave, seeing smoke, phoning or being phoned by family and friends, and seeing flames again had the most influence. **This suggests that personal networks and sensory perception are the most widely used systems for becoming aware of fires and taking action, such as leaving.** Seeing smoke and seeing flames as most influential triggers for action suggests that actions are occurring dangerously late. Importantly, very few indicated that their house was prepared enough as a trigger to leave. Messages provided overall were also very low in providing triggers to leave (Figure 27).

# PART 2: STATEWIDE ONLINE SURVEY

## BACKGROUND AND AIMS

Community-based interviewing was supplemented with a separate statewide online survey. This permitted both broader geographic coverage and administration of a wider array of questions pertaining to the January 2014 bushfires. Open invitation to complete the survey was advertised via the CFS website.

The BNHCRC and SA CFS devised this survey in consultation based on the NSW survey, and the survey was run concurrently with the collection of interview data. The aim of this was to obtain a demographically broader sample to complement the targeted nature of the interview samples. This process provided a more quantitative perspective upon the current research issues.

## METHODOLOGY

The online survey was devised by both the BNHCRC and CQUniversity's Appleton Institute researchers. The survey was designed to elicit the same information as the semi-structured interviews, but in a format more conducive to quantitative summarisation. It was designed in consultation with, and approved by, CFS project partners, adapted from a similar survey used by a NSW Bushfire CRC Task Force.[24] A pilot version of the SA Survey was user-tested for understanding and functionality by employees of the Appleton Institute and their families prior to being made available to the public. The online survey was open for 6 weeks over the latter half of April and May 2014.

It was desired that respondents opt in for participation. Retrospective checking of the data for self-selection biases indicated that they were a minor concern, as throughout sampling an even spread of demographic characteristics was aimed for through continual promotion of the survey to prospective respondents with differing characteristics. In this context however it should be understood that those completing any survey of this nature are likely to have an inherent interest in the subject matter, as such it is reasonable to believe the response indicate the upper boundaries of community attitudes and behaviour with respect to bushfire awareness and preparedness.

A total of 606 surveys were participated in and submitted by respondents, the results of which are presented in the following sections. It should be noted that as this survey was not forced-choice, respondents opted to not provide responses for some items. Sample sizes for items are therefore noted where required, as although some items were not answered for each participant, the responses that were provided were used in analyses. This is referred to as case-wise exclusion in analyses, as opposed to list-wise exclusion. As the 606 surveys were clicked through fully, there was no attrition (non-submission) observed for this sample, and no list-wise removal of cases. As there were many optional responses allowed in the survey, attrition rates are difficult to determine with certainty.

Copies of the full questionnaire and the full dataset and frequency charts have been provided to the SA CFS for additional analysis and future reference. The survey was designed from a quantitative

---

[24] See Appendix 1 in Skinner & Skinner Consultants. 2014. A Synthesis of Bushfire CRC Community Safety Research (2003-2013) Including Post-fire Contact Surveys. Melbourne, Victoria: Bushfire Cooperative Research Centre.

perspective; however, some questions did include 'other' fields, or sections for open-ended responses. Where necessary, these open responses have been referred to during analysis to provide context for interpreting study findings.

## RESPONDENT SAMPLING

Opt-in sampling[25] was selected for this larger survey, to obtain a broader picture of the general SA population than was possible with the targeted interview data. Accordingly, representativeness of sampling was checked by comparing the interview and online samples on the key variables of gender, age and CFS affiliation. Moreover, survey respondents were sampled blind to their experiences with the 2014 bushfires. As a result of, the level of direct impact of fire upon respondents' homes was expected to be lower than that of the targeted interviews.

The online sample had a close to even split of gender, with slightly more (9%) female respondents, comparable with the interview data. Visual inspection of the data showed that the online sample captured a slightly younger age-range than the interviews sample. There were also differences in CFS affiliation, with fewer participants being past affiliates and more being current affiliates in the statewide sample than in the community interview sample. Of those in the statewide sample currently affiliated with the CFS, 24% were volunteers rather than employed members.

## SAMPLING LOCATIONS

The link below connects to an interactive map with markers for the 536 respondents that provided a postcode; 70 chose not to provide this. As the map was generated based on post codes provided by the respondents themselves, markers should be interpreted as an estimated rather than objective record of residential location. The majority of respondents identified as being south of Quorn, South Australia, from Port Pirie and surrounding communities, Adelaide and its suburbs, particularly surrounding Belair National Park, though including north-eastern areas, as well as locations running South through to Mount Gambier.

**Click to access an interactive map of these locations and view estimated respondent location coverage.**

## RESULTS

This section presents the participant demographics then details the findings from the online survey based on the key research themes:

1.   Community and programs
2.   Local bushfire risk and preparedness
3.   Information, warnings and action

---

[25] This is a commonly used and ethically preferable technique in applied social research.

This section presents an aggregated overview of these topics across the full dataset. The following information should be interpreted in light of the fact that across different items, a number of respondents chose not to provide a response. The use of optional responding is common practice in research and, where required, the sample size for respondents and the use of valid percentages has been indicated.

### Online survey respondent demographics

The online statewide survey (*n* = 606) comprised 259 males and 312 females,[26] with the majority being in the age brackets 35 to 44 (26%), 45 to 54 (25%), and 55 to 64 (20%) years. Many households did not have children, with the following pattern of child presence observed: <2 years (6%), 2 to 5 years (13%), 6 to 12 years (23%), and 13 to 18 years (23%). Approximately 75 percent of respondents had pets or livestock on their property: dogs (54%), cats (35%), horses or similar (9%), non-poultry birds (11%), poultry (26%), fish (11%), cattle (6%), sheep (14%) and alpacas (4%). As indicated above, the sample was drawn from a wider population than for the community interviews, and had a range of exposures to the 2014 fires. A total of 17% of respondents indicated that they were directly impacted by these fires, and 49% considered the area they were in to have been impacted by fire (Table 6). Note, the reader should interpret this in light of the fact that a proportion of respondents opted not to complete this item (see Table 6).

**Table 6. Perceptions of fire threat and impact in respondents' area**

|  |  | Percentage of respondents |
|---|---|---|
| **Consider area was impacted by fire[a]** |  |  |
|  | Yes | 49% |
|  | No | 24% |
| **Property directly threatened or affected[b]** |  |  |
|  | Yes | 17% |
|  | No | 30% |
| **Perceived duration of fire threat** |  |  |
|  | A few hours | 11% |
|  | One day | 12% |
|  | Between one day and a week | 7% |
|  | Multiple fires threatened over days/weeks | 9% |
|  | One fire threatened at different times (days/weeks) | 7% |
|  | Not applicable/not affected | 10% |

Note: [a]27% of respondents did not answer this question. [b]52% did not respond. [c]41% did not respond.

---

[26]Thirty-five respondents (5.8%) did not indicate their gender.

Approximately 73% of respondents recalled a bushfire having affected their area at some point in the past, with 29% stating that their area had been affected by bushfire in the past 12 months (Figure 28). Although many indicated they had never personally experienced a bushfire (36%), most had experienced one (64%), with 32% having experienced one in the past 12 months (Figure 29).
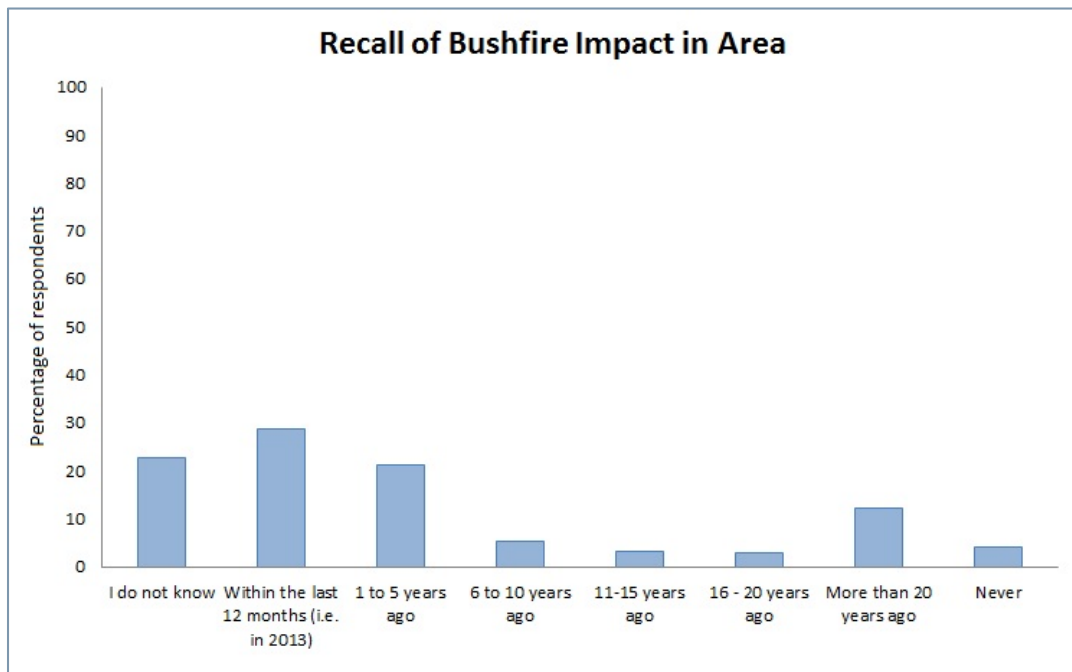


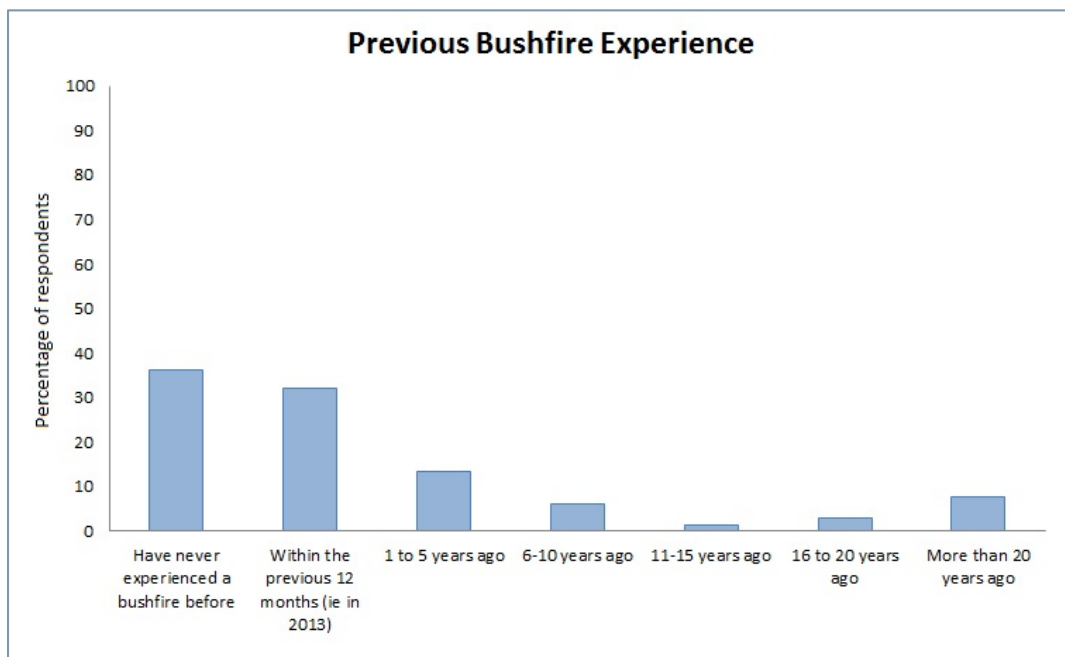Figure 28. Recall of last time the area experienced bushfire (*n* = 513).



Figure 29. Bushfire experience of the survey respondents (*n* = 500).

Respondents were asked about their level of insurance cover (Figure 30): the majority of respondents felt they were adequately insured for house (92%), contents (91%) and vehicles (84%). Importantly, a number of respondents did not know if they were insured for their farm structures and equipment (22%), for their livestock (30%), or for their business (35%). A small proportion of respondents also reported being partially insured for their property, and 10% reported having no insurance for their livestock.
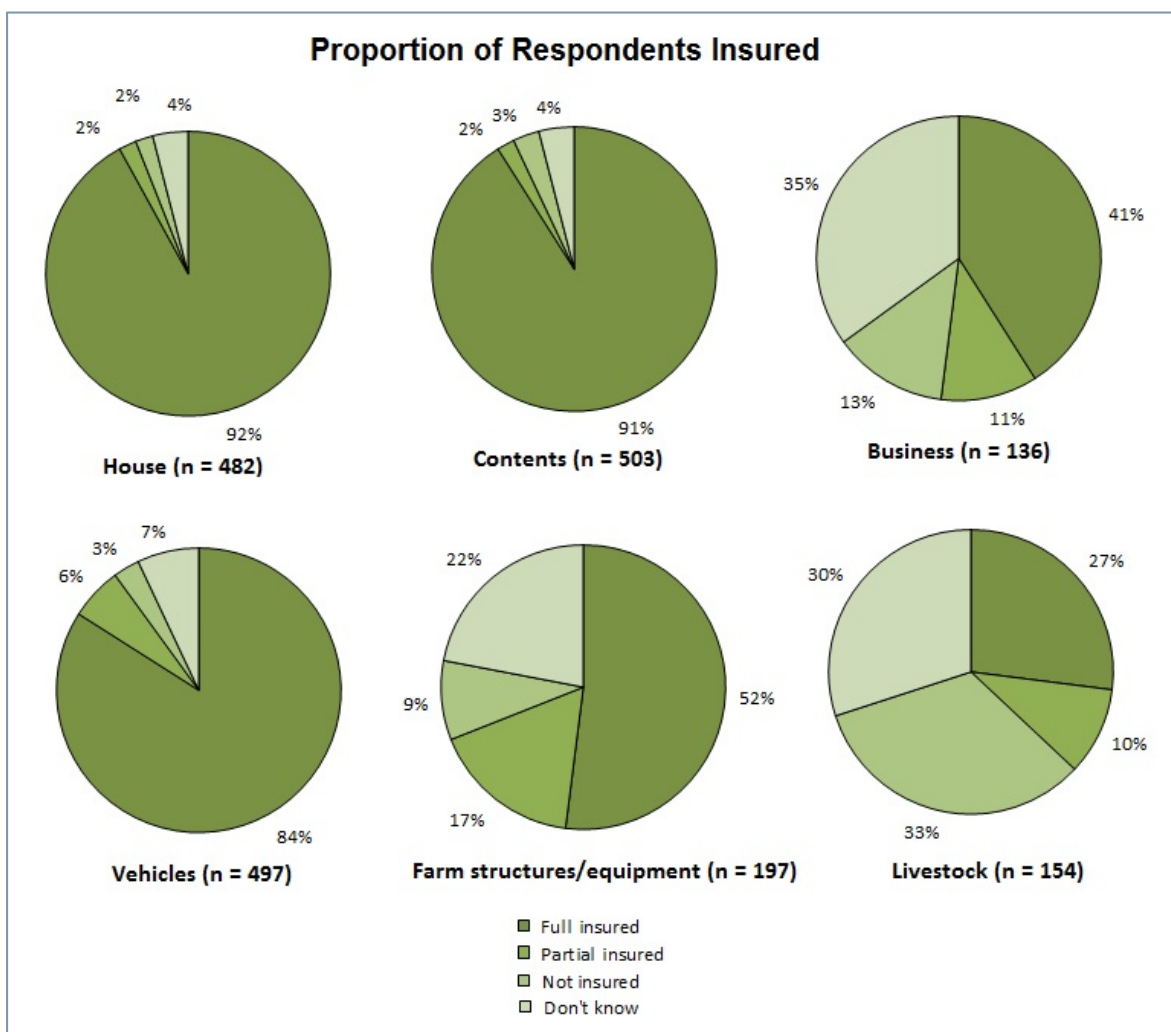


**Figure 30. Reported level of insurance cover by type of insurance.**
Note: Valid percentages shown.

## Community and programs

### Knowledge of Bushfire Information (Prior to January 2014)

Using a prompted list, survey participants were asked which of the following information (or places you received information) on preparing for bushfire do you recall getting or seeing in the 12 months before

the fires of January/February this year? Only 9 (2%) indicated they did not recall or had not seen any of the items listed.

Approximately half of all respondents had accessed the SA CFS website prior to the 2014 fires. Following this, the most frequently recalled information sources were television advertisements, knowing someone affiliated with the SA CFS, television news pieces and radio advertisements (Figure 31).
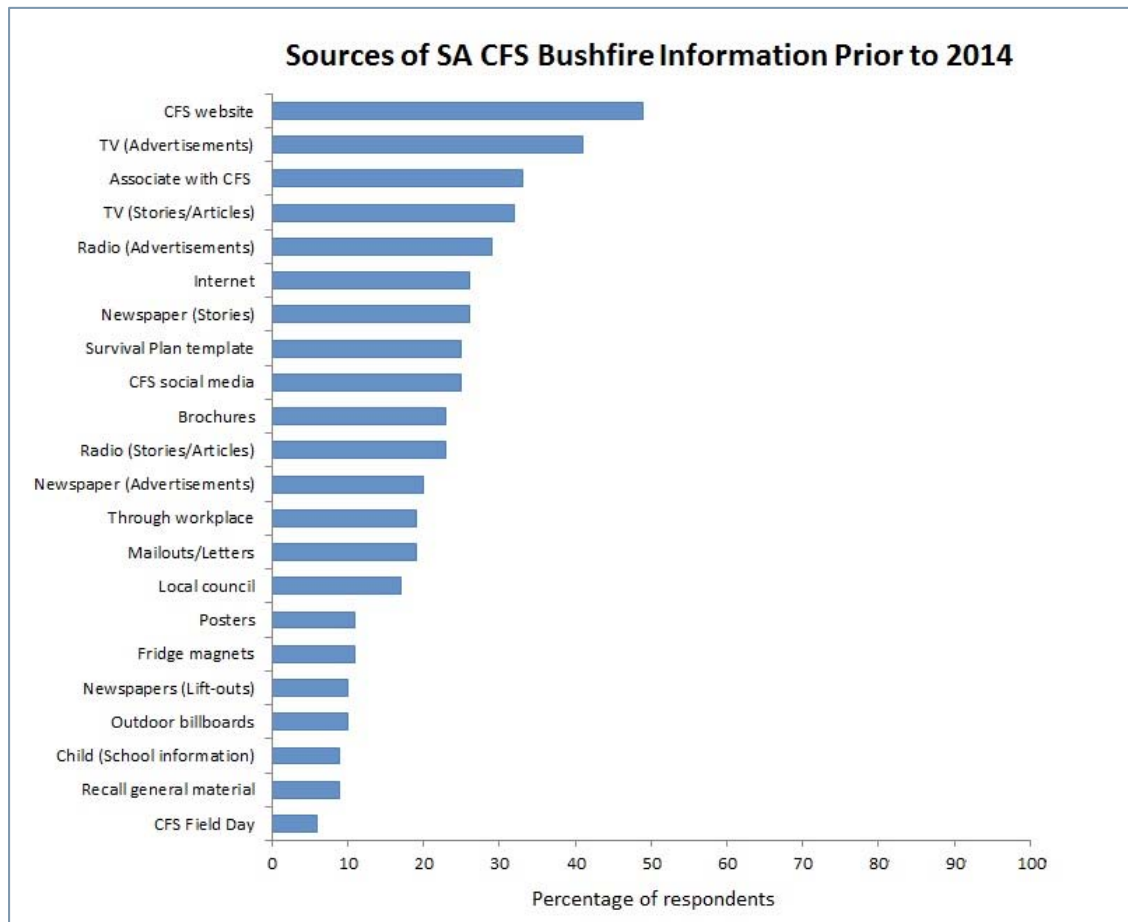
**Sources of SA CFS Bushfire Information Prior to 2014**

| Source | |
|---|---|
| CFS website | |
| TV (Advertisements) | |
| Associate with CFS | |
| TV (Stories/Articles) | |
| Radio (Advertisements) | |
| Internet | |
| Newspaper (Stories) | |
| Survival Plan template | |
| CFS social media | |
| Brochures | |
| Radio (Stories/Articles) | |
| Newspaper (Advertisements) | |
| Through workplace | |
| Mailouts/Letters | |
| Local council | |
| Posters | |
| Fridge magnets | |
| Newspapers (Lift-outs) | |
| Outdoor billboards | |
| Child (School information) | |
| Recall general material | |
| CFS Field Day | |

Percentage of respondents

**Figure 31. Sources of bushfire information encountered prior to 2014.**
Note. Overall percentage from *n* = 606 respondents reported; multiple responses could be selected

For the online statewide survey, respondents could see all options listed below, compared to interviews that provided unprompted examples of information sources. That is, the online survey served as an 'audit,' whereas the interview question served more as a test of recall.

Respondents were also asked whether they were familiar with a selection of bushfire messages, warning terms, and further general warning sources (Table 7). This shows that there is a relatively low familiarity with and recall of the term 'bushfire safer places', and low familiarity with the CFS Warnings and Incidents Map and materials regarding household preparatory actions, as well as the Bushfire Information Hotline and roadside danger signs.

**Table 7. Recall of bushfire warnings, messages and warning media**

|  | Percentage of responses |
|---|---|
| CFS Warnings and Incidents Map | 42% |
| Total Fire Bans | 67% |
| Bushfire Information Hotline | 36% |
| Fire Danger Ratings | 64% |
| Sirens on fire trucks | 59% |
| Bushfire Watch and Act message | 58% |
| Information for house preparation | 43% |
| Emergency warning message | 60% |
| Bushfire Survival Plan | 52% |
| Bushfire Advice message | 55% |
| Prepare. Act. Survive. | 54% |
| Bushfire Safer Places | 33% |
| Roadside danger signs | 36% |
| Apps like CFS FireApp | 45% |
| TV, radio, news and billboard ads | 46% |
| Radio news reports | 54% |
| None of the above | 1% |

Note: Multiple responses were permitted.

**Local bushfire risk and preparedness**

*Risk Perception*

Respondents were asked to rate their perceived level of bushfire threat (how they felt when they first moved into their area) across the domains shown in Figure 32. This shows that many perceived a low to medium level of threat to their family, property, local area and pets. Respondents were also asked about their level of concern about bushfire risk after they became aware a fire threatened their area.

Figure 33 shows that, when aware that a fire was in the area, most respondents were moderately to extremely concerned about the risk of bushfire threatening them, their family and their pets, and expressed a slightly increased degree of concern about others in their area.
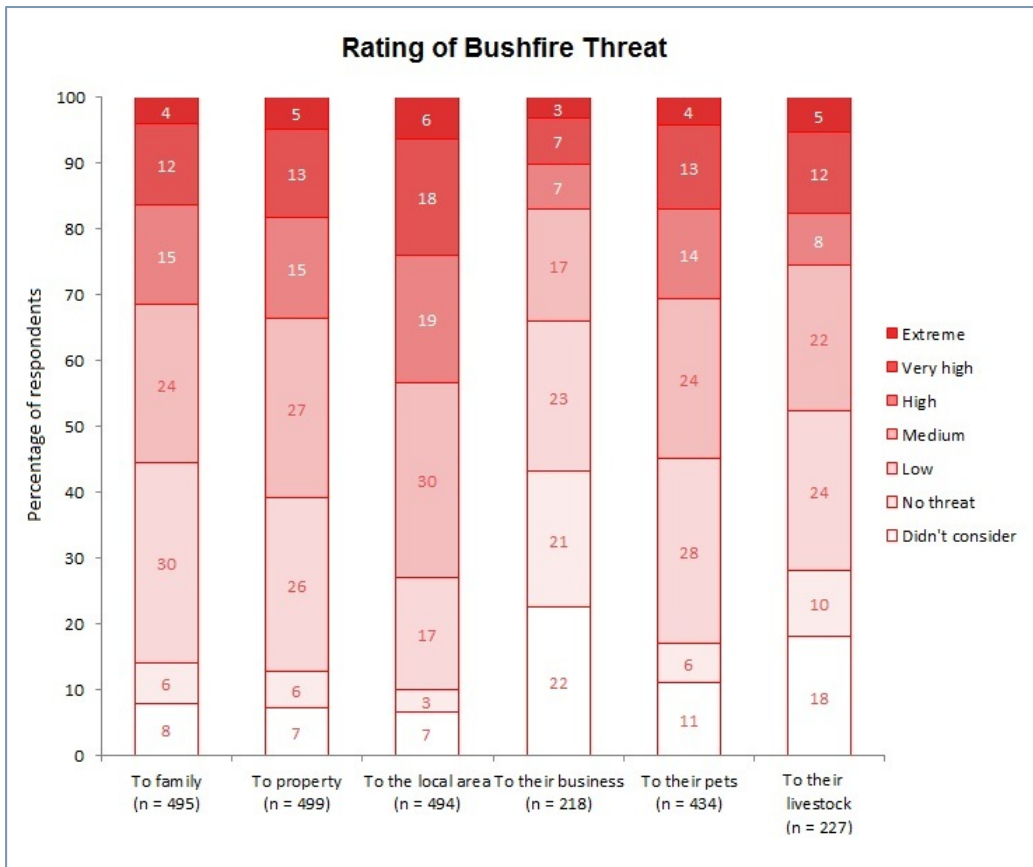
**Figure 32. Rating of bushfire threat upon moving to area.**
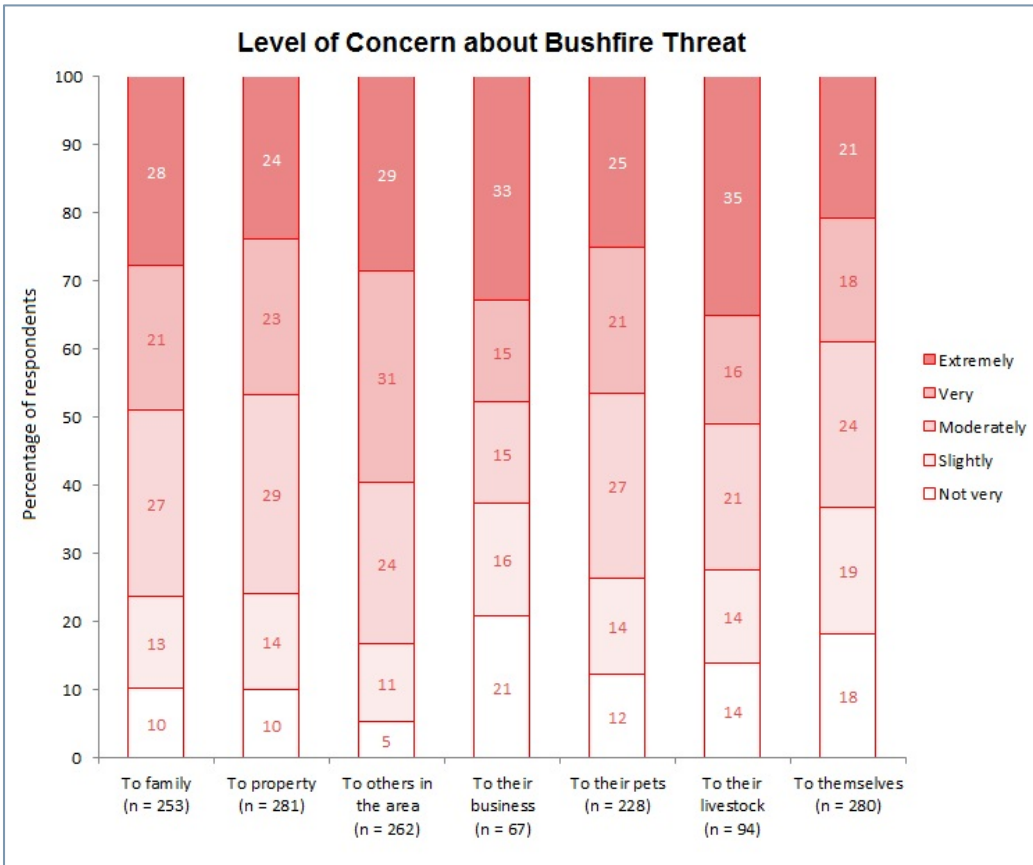


**Figure 33. Level of concern about bushfire threat.**

The following section summarises respondents' general level of awareness of bushfire information sources.

### *Bushfire Survival Plan*

Approximately 25% of respondents had accessed a *Bushfire Survival Plan* template prior to 2014; however, of those reporting the format of their plan (*n* = 499), only 19% indicated that they had a written plan. Most (71%) reported having a mental plan or one not written down. Some (11%) reported having no plan at all. The majority of respondents had prepared their plan during 2013 or earlier (85%), with the remainder preparing it early in 2014 (9%), or after the 2014 fires (6%).

Figures were slightly higher for females regarding the type of adult household member who initiated development of the plan: adult male (30%), adult female (37%) and no particular person (30%). Further, plan details had been discussed by many respondents (62%), though for many had not been practiced (32%) or did not include a backup plan (35%). Around half had identified a place of refuge (55%), and considered that a fire might start mid-week (59%) or at night-time (57%).

### *Preparedness for a Bushfire*

Respondents were asked about their thinking and planning for bushfire, regarding what actions they had completed and when, and which they intended to complete (Table 8). The key points from this table include that although some people intended to create and practice a written plan, a comparable number also felt that this was unnecessary. Moreover, over a quarter of respondents had not considered having a written Bushfire Survival Plan, with a similar proportion having not considered practicing their plan.

One-fifth had not considered attending CFS bushfire information sessions, with some feeling this to be unnecessary. Further, two-fifths had not considered becoming involved in a local Community Fire Safe Group, and one-quarter saw this as not applicable to them.

Over a quarter of respondents had not considered the potential need for bushfire sprinklers or independent power, and slightly less than a quarter had considered the need for protective clothing. Approximately one-fifth had not considered talking with their neighbours.

Later in the survey, respondents were asked to indicate the types of actions they had completed in the days *immediately* leading up to the 2014 bushfires to prepare for the possibility of being affected when a fire was in or near their area (Figure 34). Most respondents began to monitor official CFS information sources, collected valuables, remained at home owing to potential fire threat, and called their friends, family and neighbours to discuss bushfire risk or preparedness concerns.

**Table 8. Completed and intended actions in preparation for bushfire**

| | 2013 or earlier | Early in 2014 | Intend to do | Feel unnecessary | Not considered | Not applicable |
|---|---|---|---|---|---|---|
| **Have a plan in mind** (*n* = 469) | 76.1% | 9.0% | 6.8% | 1.7% | 1.3% | 5.1% |
| **Attended CFS info session** (*n* = 462) | 39.8% | 7.1% | 9.1% | 13.6% | 21.4% | 8.9% |
| **Have 'Your Guide to Bushfire Safety'** (*n* = 471) | 63.1% | 8.9% | 3.8% | 7.6% | 10.0% | 6.6% |
| **Have written plan** (*n* = 462) | 24.5% | 3.5% | 22.1% | 25.8% | 15.8% | 8.4% |
| **Have practiced plan** (*n* = 464) | 30.6% | 4.7% | 19.0% | 19.8% | 17.7% | 8.2% |
| **Talked with household** (*n* = 481) | 68.6% | 15.2% | 3.5% | 2.1% | 3.1% | 7.5% |
| **Talked with neighbours** (*n* = 473) | 49.3% | 12.1% | 4.2% | 8.5% | 19.7% | 6.3% |
| **Have CFS FireApp** (*n* = 461) | 48.2% | 13.2% | 7.6% | 5.6% | 13.4% | 11.9% |
| **Have bushfire sprinklers** (*n* = 452) | 15.7% | 1.5% | 15.5% | 21.0% | 30.5% | 15.7% |
| **Independent water** (*n* = 474) | 58.9% | 5.7% | 5.7% | 6.5% | 13.3% | 9.9% |
| **Independent power** (*n* = 456) | 27.2% | 3.1% | 12.9% | 14.9% | 27.9% | 14.0% |
| **Protective clothing** (*n* = 469) | 57.8% | 5.3% | 7.0% | 8.5% | 16.2% | 5.1% |
| **Cleared space around house** (*n* = 477) | 70.4% | 8.2% | 7.5% | 2.7% | 4.4% | 6.7% |
| **Cleared gutters** (*n* = 479) | 72.9% | 13.2% | 8.8% | 1.3% | 1.0% | 2.9% |
| **Mapped safe dest./route** (*n* = 471) | 66.0% | 8.7% | 7.6% | 5.9% | 5.5% | 6.2% |
| **Attended Community Fire Safe group** (*n* = 443) | 13.1% | 2.5% | 6.1% | 12.6% | 40.2% | 25.5% |
| **Have emergency kit** (*n* = 455) | 42.2% | 5.7% | 18.2% | 9.5% | 18.0% | 6.4% |

Note: Multiple responses were permitted; valid percentages used.
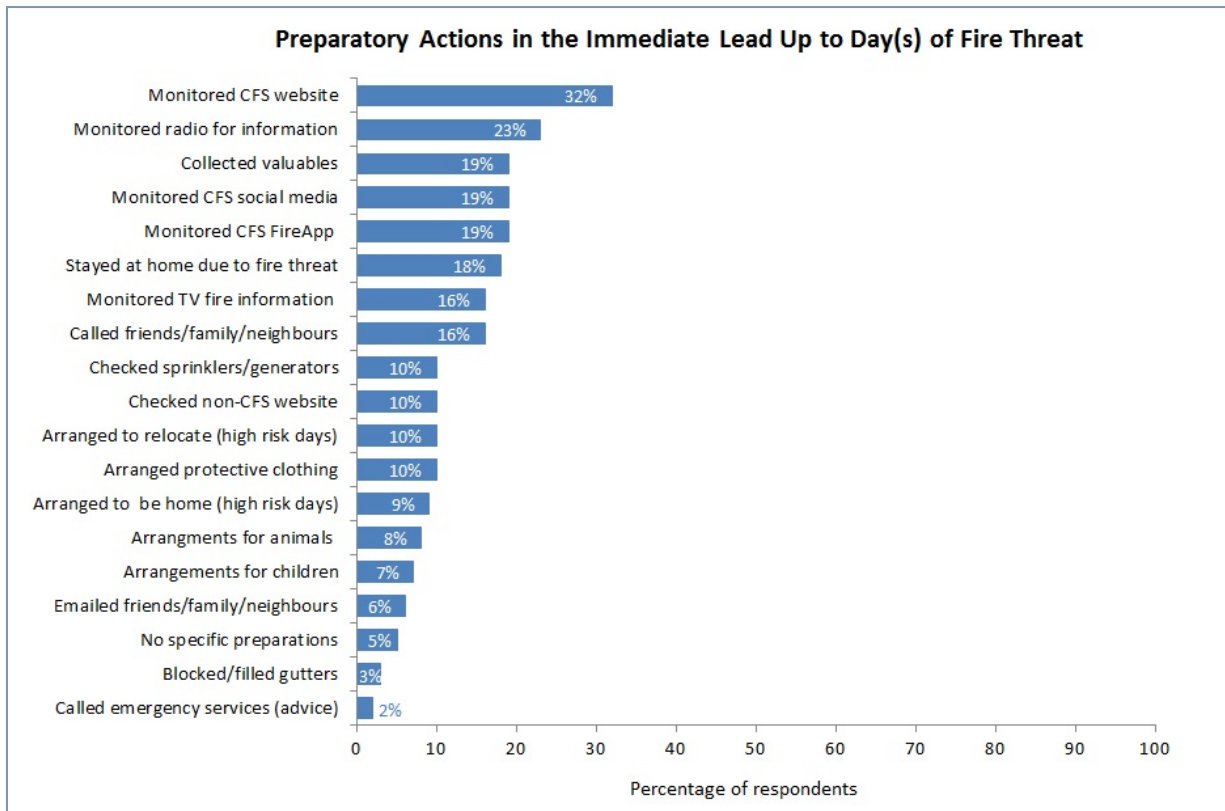
**Figure 34. Preparations for possible bushfire when aware of fire threat.**
Note: Multiple responses were permitted; categories abbreviated for presentation.

### Perception of Preparedness

Respondents were asked to rate their perceived level of preparedness for bushfire. For those responding, around half felt adequately prepared (52%), with the remainder feeling well prepared (19%), not very well prepared (21%), or not prepared at all (8%). These figures should be interpreted cautiously due to a low response rate for this particular item (*n* = 104).

### Information, warnings and triggers

### Warnings or cues of Fire Danger

For those who reported that the fires directly threatened or impacted on their property, many reported that hot weather and high winds (73%), Fire Danger Warnings (60%) and Total Fire Bans (60%) served as key indicators of fire danger. Less frequently reported indicators included having other fires in their area (39%), and SES extreme heat warnings (26%). Other cues (18%) included: burnt leaves falling, phone calls from family and awareness of lightning.

### Information Sources for Decision-Making

Respondents used a variety of information sources for their decision about what to do when they became aware that a fire was in their area (Figure 35). Approximately one-fifth of respondents stated

that the details of their original plan and common sense were their main sources. The next most frequently reported sources that played a key role in their decision were the CFS website and in-person advice from a member of the CFS.
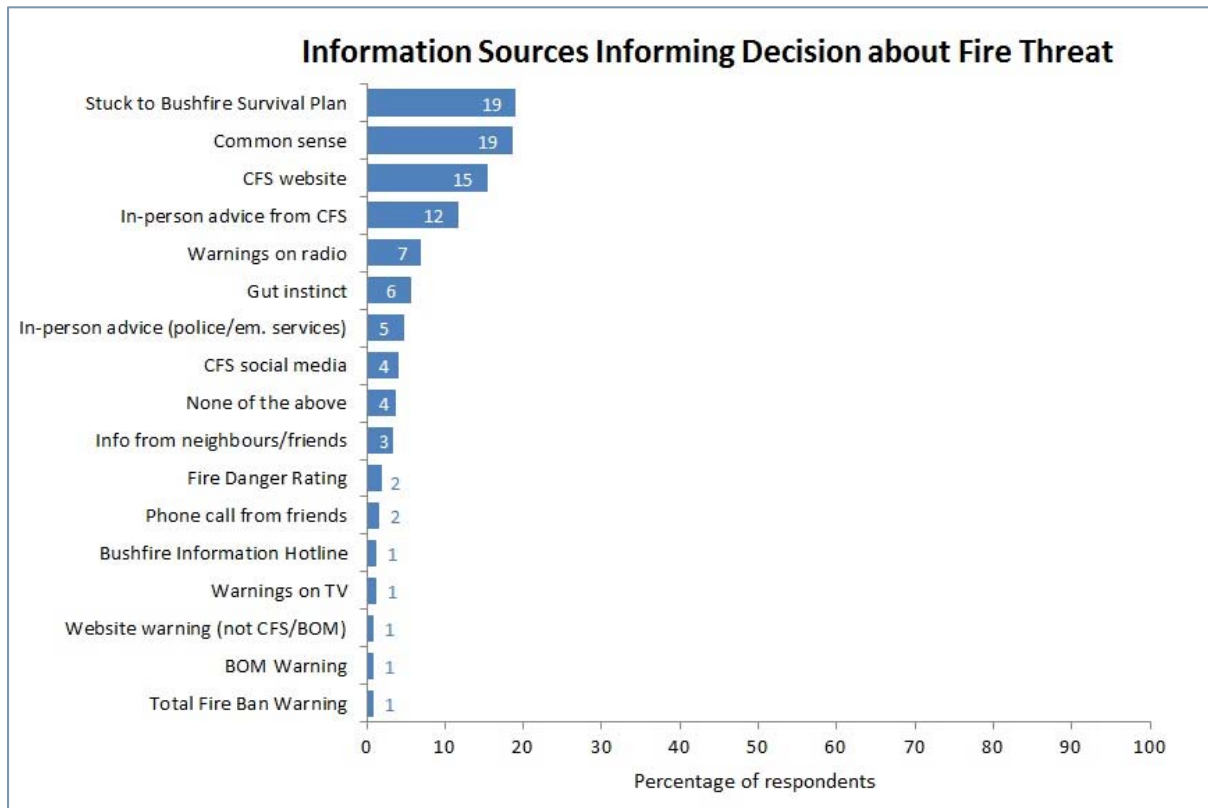


**Figure 35. Information sources used to make decision about fire in respondents' area (*n* = 275).**
Note: Multiple responses were permitted.

### Social Media and Keeping up to Date

Approximately 29% of respondents had used social media to keep up to date regarding the fires. Moreover, of those using social media as a means of staying up to date, 45% reported active engagement with social media feeds relating to the bushfires through uploading information and photographs or commenting during this period. Of those using Facebook for this purpose, 68% accessed the official CFS Facebook page and 18% those of family and friends. Local CFS brigade Facebook pages (2%), those of news services (2%) and other individuals (3%) were used less frequently. Of the few who used Twitter for this purpose, 85% followed the Official CFS feed.

### Perception of CFS Information Channels

Many respondents provided an indication of whether they were expecting a specific warning during the 2014 bushfire events (*n* = 407). Interestingly, approximately half reported expecting one (53%) and half not expecting one (47%). Perceived quality ratings for official CFS warnings were also obtained from respondents (Figure 36).
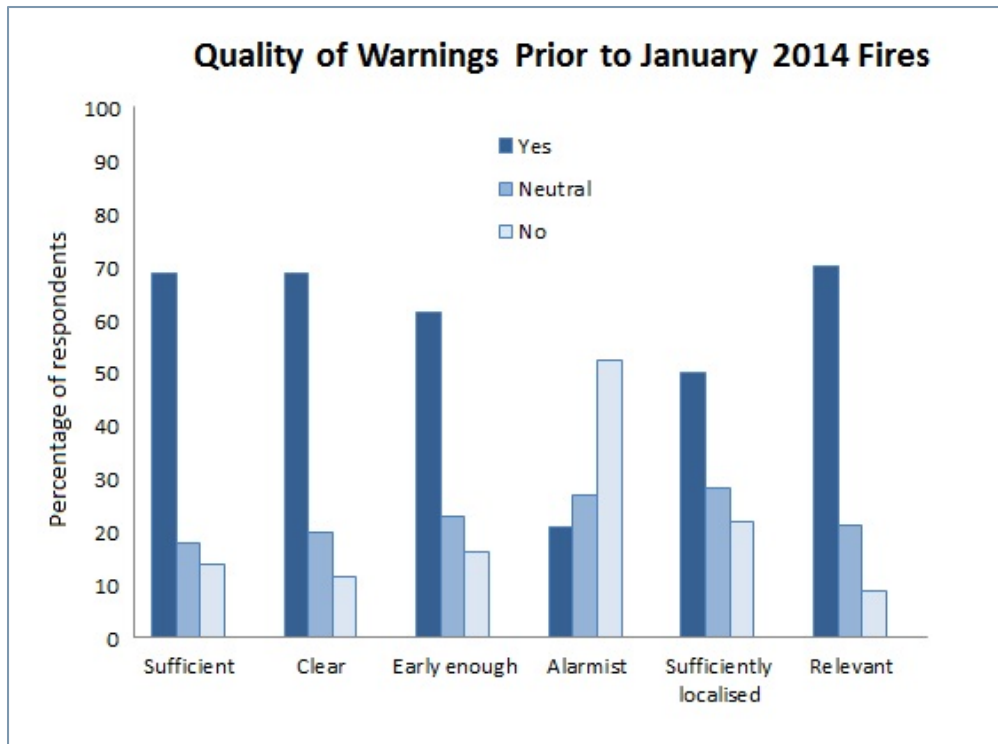
**Figure 36. Quality of warnings prior to the January 2014 fires.**
Note: Valid percentage used.

Many found the warning messages (e.g. text messages, website information, radio programs) to be sufficient, clear, received early enough, and relevant. However, approximately one-fifth felt that the messages were alarmist or not sufficiently localised.

Respondents were also asked to indicate which particular information channel (including CFS) they felt was the most reliable source of information. For those reporting this (*n* = 399), they were indicated in the following proportions: CFS website (40%), local radio (21%), local CFS volunteers (15%), Facebook (8%), family or friends (7%), national radio (3%), television (3%), the Bushfire Information Hotline (2%), and Twitter (1%).

Respondents were asked to rate the overall quality of a number of communication channels during the 2014 fires, including those of the CFS (Table 9). Quality ratings were Likert-rated from 1 (*not at all*) to 4 (*very*) for endorsement of quality characteristics. From this, we can see that advice heard on the radio was rated at a moderately high level of usefulness overall, slightly higher than Emergency Alert SMS and landline messages.

The CFS website was perceived as slightly more useful, up to date and local than the Bushfire Information Hotline. Note the caveat is made that only 42/600 respondents reported a rating for the Bushfire Information Hotline.

**Table 9. Quality ratings for information channels**

| Information channel | Rating *M* (*SD*) | | | |
|---|---|---|---|---|
| | *Useful* | *Timely* | *Right frequency* | *Sufficiently local* |
| **CFS SMS message** (*n* = 182) | 2.98 (0.98) | 2.99 (1.00) | 2.97 (0.94) | 2.96 (0.95) |
| **Radio** (*n* = 244) | 3.17 (0.78) | 3.12 (0.78) | 3.20 (0.74) | 3.06 (0.83) |
| **Landline message** (*n* = 92) | 2.83 (0.99) | 2.84 (1.03) | 3.00 (0.91) | 2.88 (0.91) |
| | *Useful* | *Up to date* | *–* | *Sufficiently local* |
| **CFS website** (*n* = 346) | 3.07 (0.79) | 2.88 (0.87) | – | 2.91 (0.88) |
| **Bushfire Information Hotline** (*n* = 42) | 2.67 (1.20) | 2.48 (1.17) | – | 2.63 (1.13) |

Note: Valid Figures shown for respondents who rated each channel. Upper section rated along four dimensions; lower section rated along three dimensions. All dimensions rated from 1 (*Not at all*) to 4 (*Very*).

# SUMMARY AND NATIONAL COMPARISIONS

### Online survey respondent demographics

Approximately one in two (49%) survey respondents considered their residential area to have been impacted by fire, and almost one in five (17%) indicated that they were directly impacted by the fires. Approximately one third of statewide survey respondents recalled a bushfire impacting their residential area within the last twelve months, and one fifth within the previous five years. Approximately a third each had never experienced a bushfire or had experienced one within the last twelve months (Figures 28, 29). Houses, contents, and vehicles were predominantly fully insured, though some respondents reported not knowing whether their farm structures/equipment, livestock, and businesses were insured (Figure 30).

### Community and programs

Prior to 2014, nearly half of respondents had been exposed to CFS website and televised bushfire preparedness information, with radio, newspaper, and social media being accessed by approximately a third (Figure 34). CFS field days, which were individually identified as standalone initiative in the survey had been accessed by only a small percentage (6%) of respondents. This suggests that although reasonable use is made of remote-access information sources, immediate and present engagement of community members may be an area requiring further attention or promotion. Further, only a quarter of respondents recalled exposure to a Bushfire Survival Plan Template, indicating that marketing and distribution of this package may also require further examination. Low familiarity with and recall of past use of the Fire Danger Maps, the Bushfire Information Hotline, roadside danger signs, and the term 'Bushfire Safer Places' was also recorded.

The BCRC and BNHCRC have previously conducted seven major post-bushfire studies involving interviews with residents threatened by serious bushfires. These previous studies have found that in communities characterised by lower overall levels of community member interconnectedness (as perceived by residents) there is less information sharing about bushfire safety and bushfire threat prior to, and during, a fire threat. These studies have also found that only a minority of householders make use of bushfire safety information made available by fire agencies: 14% to 35%, with an unweighted mean of 27%. Very few residents attended organised bushfire safety information meetings. The percentage of residents interviewed who had a written bushfire plan prior to the fire threat has ranged from 2% to 9%, the unweighted mean across the studies was 5%. The results of the interviews conducted in South Australia are broadly consistent with these findings, albeit with a high proportion of people with a written Bushfire Survival Plan.

### Local bushfire perception of risk and preparedness

A low to medium rating of bushfire threat was observed for family, property, pets, and local area, and this was lower still for businesses and livestock (Figure 32). Although a moderate level of concern about

perceived bushfire threat was observed for respondents themselves, family, pets, and property, **over half of respondents reported low concerned about bushfire threat to others in their area** (Figure 33). Furthermore, only **one quarter of respondents reported having a Bushfire Survival Plan**, with 19% adhering to a written plan (Figure 35) as tool in decision making in response to the fire theat.

Previous post-bushfire studies have found the percentage of those interviewed before the fire, did not perceive any bushfire risk ranged from 7% to 33%, with an unweighted mean of 14%. The percentages of residents interviewed who did not have a bushfire plan prior to the fire ranged from 8% to 32%, with an unweighted mean of 20%. Those intending to leave ranged from 24% to 65%, with an unweighted mean of 38%. The percentages intending to stay and defend ranged from 10% to 48%, with an unweighted mean of 27%. The percentages intending to wait and see ranged from 5% to 29%, with an unweighted mean of 15%. In relation to preparation for a bushfire, the percentages of those intending to leave who reported being adequately prepared (i.e. had chosen a destination and route and had a kit packed ready to go) ranged from 6% to 27%, with an unweighted mean of 16%. The percentages of those intending to stay and defend who reported being adequately prepared (i.e. had at least an independent water supply and a pump with a power source independent of mains electricity) ranged from 17% to 70%, with an unweighted mean of 35%.

### Warnings and triggers

Primary information sources that informed decisions about fire threats were predominantly sticking to one's Bushfire Survival Plan (19%), relying on 'common sense' (19%), and accessing the CFS website (15%). Few used CFS social media and the Bushfire Information Hotline as primary sources (Figure 35), indicating that barriers to use of social media (e.g. devices/familiarity) and accessing the hotline (e.g. cellular reception/land-line availability), along with alternatives to these need to be acknowledged within bushfire preparedness educational campaigns.

During the fires, 29% of respondents used social media to keep up to date about details of fire impacts, with nearly half (45%) reporting active engagement such as uploading and commenting during this period. Facebook is the primary form for this engagement, with well over half (68%) using the official SA CFS site, and one fifth (18%) connecting with family and friends via Facebook for this purpose. There was a low observed engagement with local CFS brigade Facebook pages. Many respondents indicated that warning messages prior to the 2014 fires were sufficiently relevant, though only half rated content as being sufficiently localised (Figure 36).

Previous post-bushfire studies have found that the most frequently reported initial source of information that there is a bushfire threat is environmental cues—sight of smoke, smell of smoke, sight of flames or embers, sounds of water-bombing aircraft; followed by phone calls from neighbours, family, and friends—many of whom, in turn, call to report smoke. Very few householders have reported leaving on the basis of fire danger predictions, before there is an actual bushfire threat: the percentages have ranged from zero to 10%, with an unweighted mean of 2%.

The survey tool did not provide the capacity to determine with certainty the exact influences of community and programs, risk and preparedness, and warnings and triggers on preparation, intentions,

and actions. As noted in the literature, 'Currently, it is just not possible to know what is responsible for an individual's intentions or actions around bushfires'.[27]

---

[27] Skinner & Skinner Consultants. 2014. A Synthesis of Bushfire CRC Community Safety Research (2003-2013) Including Post-fire Contact Surveys. Melbourne, Victoria: Bushfire Cooperative Research Centre. P19.

# DISCUSSION: TRIANGULATING & BENCHMARKING DATA

This report has presented the findings of a mixed-methods study into community perceptions, attitudes and experiences of bushfires in South Australia. Interviews were conducted with 171 community members who were affected by the following three bushfires in South Australia in January 2014: Bangor, Eden Valley and Rockleigh. At the same time, 606 South Australians completed an online survey on the same topics covered in interviews.

## PARTICIPANTS: TRIANGULATING & BENCHMARKING INTERVIEW, SURVEY AND ABS DATA

Characteristics of the community interview samples differed from those of the online sample. Although a relatively even gender split was observed for both the interview sample and the statewide online survey sample, the ages of interviewees and respondents differed somewhat. The median ages of community interview samples were approximately 10 years higher for Rockleigh, Eden Valley, and Bangor when compared to their ABS community profiles. These were approximately 20 years older than ABS average age Figures for South Australians overall (see Table 5).

The majority of all samples were English-speaking households. Notably, the proportion of community interviewees who were retired was approximately 30% higher for Bangor and Rockleigh, than comparative ABS Figures for these regions. In all cases, the majority of properties were owned with or without a mortgage, though community interview Figures for those renting were less than half of corresponding ABS community profile Figures. For all three sites a sizable proportion of respondents were retired. Interviewee reports of levels of insurance for equipment, stock, businesses and pets, were comparable with figures within the statewide survey (Figures 7, 8, 30).

## RESEARCH AIMS: TRIANGULATING & BENCHMARKING INTERVIEW AND SURVEY DATA

### Community and programs

Although a high number of respondents in the online survey had participated in a CFS Community Program of some sort (e.g. CFS info session), this was not mirrored by the community interview sample. Interview-sampled residents showed a tendency toward relying on practical preparatory actions around the home and property (e.g. clearing gutters) rather than attending, for example, Community Fire Safe group sessions. Despite this, statewide survey respondents reported broadly similar engagement in these practical preparatory actions prior to the 2014 bushfires.

Notwithstanding differences in the level of community engagement activities being undertaken in the different areas, one potential reason for the low observed engagement in community meetings is the lower level of neighbourhood socialisation observed in interviews. Despite these respondents perceiving a high degree of community-connectedness along other dimensions (e.g. 'could get help from neighbours'), in practice approximately half of residents actually interacted with their neighbours.

### Local bushfire risk and preparedness

A higher level of previous experience of bushfire was observed within interviews than in the statewide survey sample (approximately one-third of respondents), particularly for Bangor and Rockleigh residents at approximately 80% of respondents (Figures 5, 29).

Given this, it is unsurprising that more than 60% of Bangor and Rockleigh respondents considered their home and family at potential risk of bushfire impact. Importantly, these residents also rated their concern about potential risk as moderate (Figures 13, 14). Conversely, many Eden Valley residents (60%) considered their home and family not to be at risk of this outcome. This perception of low risk-likelihood, and the aforementioned low degree of neighbourhood socialisation, was mirrored in the statewide survey where most respondents perceived a low to medium degree of potential bushfire threat, and a low level of concern about bushfire risk to others in their area (Figures 32, 33).

### Information, warnings and action

This research was able to identify which sources of information were most often used and seen as useful within bushfire preparedness and response contexts. Prior to 2014, nearly half of statewide survey respondents had been exposed to the CFS website, and televised CFS information, with approximately a third having accessed radio, newspaper, and social media information. Within interviews, fewer had accessed the CFS website (34%), viewed CFS televised information (<8%), and accessed the CFS Facebook page (<10%).

Within the statewide sample only a quarter recalled being exposed to a Bushfire Survival Plan Template (Figure 31), and this was mirrored overall within interviews (Figure 17). Importantly, the highest use of CFS materials was seen in Rockleigh residents at 44 percent, whereas this was halved (around 18 to 25%) for the other sites. Within the statewide sample, there was a high representation of 'mental bushfire plans,' that is, plans that are committed to memory and discussed within households (85%). This was reflected across the three field sites as well (62%). Importantly, for community interview samples the next most frequently chosen option was to have no plan at all, with the minority of respondents having an actual written plan at approximately 10% (Figure 15). Within the statewide sample this was slightly higher at 28% of respondents.

During the fires, many of the statewide survey respondents accessed Facebook to keep up to date about changing details of fire events. However this Figure reduced by more than half in the community Interview sample when it came to Facebook use as a source of fire-threat awareness, an action taken after becoming aware of fire threat, and an ongoing source of information (Figures 19, 20, 23). Although approximately one-third of community interview respondents were aware of CFS social media initiatives, it was perceived as moderately-highly useful by those accessing (Figures 21, 22). One explanation for this is a general rural/urban divide characterised by poor network coverage and lower use or literacy in electronic devices with internet capabilities.

Primary sources of information that informed decisions about bushfire threats relied on this tacit knowledge for the statewide sample, particularly existing Bushfire Survival Plans and common sense,

closely followed by the CFS website (Figure 35). Interviewees reported accessing ABC radio broadcasts commonly, as well as communicating with neighbours for this specific purpose, and accessing the CFS website (Figure 19). Low overall use of CFS social media and the Bushfire Information hotline for this purpose was observed across both the community samples and the statewide sample. Education campaigns in these information channels, and concerning devices used to access them would potentially increase familiarity with, uptake of, and frequency of use of these remote information channels. Notably, there was a low awareness level of social media channels in the community samples (28% of respondents), though these were perceived as more highly useful than the CFS FireApp (Figures 21, 22).

## FINAL REFLECTIONS ON RESEARCH PROTOCOL

As part of a process of continual improvement, the research team has considered the mixed methods protocol used in this project against the research aims. Below is a list of things that we think worked well, as well as things that would be reconsidered for future deployments.

### Things that worked well

- Use of experienced researchers. Not only were they able to prompt expertly, they contributed to initial analyses through their professional observations.
- Use of same researchers over multiple sites. This provided internal consistency, initial observations about inter-site differences and made more field time available for research rather than training.
- Promotion of research in flyers and newspaper articles in the preceding weeks.
- Whole of team training, familiarizing the teams with the methodology and each another.
- Use of interviewer pairs – university researcher and agency co-researcher. It afforded:
  o Improved researcher safety
  o Expedited entrée and rapport building
  o Reassurance to householders
  o Opportunity for CFS to talk to householders who wouldn't otherwise attend events
  o Mutual understanding between agencies and researchers
  o Immediate summarization of the in-depth interviews as the co-researcher completed the summary checklist in vivo
  o A person with whom to debrief

### Things that were not considered ideal

- Back to back data collection did not allow a lot of time for reflection, but was necessary due to need to talk to people soon after the event and coordinating around school holidays and public holidays (e.g., Anzac Day) when householders were more likely to be traveling or to decline spending time with researchers (rather than family).

- The large number of interviews required time consuming qualitative data analysis. There is a depth/breadth threshold to any form of data collection. Achieving the full depth of a large number of interviews may be compromised by a large number of interviews, research aims, research questions or forms of triangulation within a given period of time.
- Concurrent forms of data collection limited the extent to which findings from one form could inform the development of another.

**Potential protocol variations**

When data collection can start relatively soon after a fire event, or when an agency has broad and/or many research aims, it may be useful to conduct mixed methods research in stages. This could comprise an online survey in the first stage, followed by interviews in the second stage to discuss, clarify or contextualize the findings of most interest or relevance to the agency in greater detail. Alternatively, interviews or focus groups could be held in the first stage of a research project, to be followed by an online survey in a second stage that is designed to gain a broader understanding of issues raised. Finally, when issues are already well understood in depth, a deductive survey only could be used to gain breadth. When issues are already well understood in breadth, inductive interviews and focus groups only could be used to afford depth of understanding.

# Appendix A

**Post-Bushfire Interview Guide for SA January 2014 Bushfires**

## Section 1: Demographics

First we want to ask a few questions about you, your household, and this property

1.     For the record, what is the address of this property?

2.     First, have you taken part in any other research about the January 2014 bushfires?

3.     What is your occupational status?

4.     Who else usually lives here? For each person explore:

- Age or year born, if OK?
- Elderly or frail/chronically unwell household members?
- Disabled members of the household?
- Speak a language other than English at home?

5.     And who was actually here on the day/s the fires most threatened the property?

6.     Are you a current or previous member of a fire brigade? Any other household members?

7.     Is this your main residence?

8.     Do you own, rent or manage this residence?

9.     Do you have fire insurance?

- For: House?
- Contents?
- Vehicles?
- Other? (i.e. Pet/livestock insurance)

## Section 2: Local community

We now want to ask a few questions about the community you live in

10.     How long have you lived at this address? Have you lived in the same area previously?

11.     What sort of a community would you say you live in? prompt with

- Do you think most of your neighbours know you?
- Do neighbours cooperate if there are issues or problems in the area – say with bush or grass building up?
- Do you feel any sense of personal connection with your neighbours?
- Do neighbours socialise with each other?

- If you needed help, say with transport, could get this easily from your neighbours?

Now thinking about bushfire, and in particular, your longer term preparedness for bushfire in the area

12.    Have you had any previous experience of bushfire?

13.    <u>Over the last few years,</u> how concerned have you been about the possibility of a bushfire threatening your home?
- Did you think your home and your family would be at risk from bushfire?
- Why or why not?

---

**CFS PERSON:** Do you have any particular local concerns about bushfire? Have you been involved in any local community safety bushfire initiatives?

---

14.    What general bushfire safety information do you recall receiving in the 12 months prior to the January 2014 fire? (i.e. not related specifically to that fire) – *Which the interviewer may ask in conjunction with the CFS person*


Follow up -- where did that information come from?

| | | |
|---|---|---|
| • Media | • Past Fires | • Community meetings |
| • CFS Website | • Neighbours | -- Community Fire Safe |
| • CFS Facebook page | • Other sources | -- Bushfire Ready/Bushfire Blitz |
| • CFS Fire App | • Bushfire Info Hotline | -- Firey Women |


**15.    Before the January fire/s**, did you have a bushfire plan? **IF YES**:

- Was it written down?
- What made you decide that you should make a bushfire plan?
- What were your main concerns/considerations in developing the plan?
- How did you put it together? What was it based on?

---

**CFS PERSON:** Did you use any material from the CFS in making your plan?

---

- Was your plan discussed among the occupants/family?
- Had you rehearsed or practiced your plan? Did you have a back-up plan?
- Were you responsible for dependents (e.g. kids or parents) or pets or livestock?
- If yes, was provision made for them in the bushfire plan? If yes, what? How involved were dependents (e.g. kids or parents) in putting together the plan, did they influence your decisions? How? (directly or indirectly (may already be covered above)

Thank you for this background information.

Now we are going to talk in more detail about the January Fires – from the days leading up to the fire to the day of the fire.

… are you happy to continue with the interview?

Thinking now specifically in the days leading up to this fire/these particular fires

16.     Before the January bushfire, what <u>actions</u>, if any, had you taken to protect your home and your family from bushfires?

> INTERVIEWER: *First ask the question unprompted, and then hand a laminated list to the interviewee. The **CFS person** will record these on the tick n flick.*

17.     <u>In the 2 or 3 days before the fire</u>, (where applicable at the time the fires were a major threat )

- How concerned were you about the possibility of a bushfire actually threatening your home?
- When you heard about the possible fire threat did you try to get more info? From where?
- Did you talk to neighbours about this?

Now, thinking about the time or times that the fire most threatened your home or property

18.     Can you think back to the day before the fire threatened?

- What fire danger weather predictions or warnings do you recall about the day or the day the fire threatened?
- Did you do anything in particular to prepare for a possible bushfire in the next day or so?

## Section 5: The day/night of the fire

Now, thinking about the day of the fire

19.     Can you please walk me though what happened on the day of the fire and the things you did and why?

INTERVIEWER: *use the following probes as needed to make sure you get a comprehensive narrative of this householder's experiences during the course of the day of the fire:*

- When and how did you first find out that there was a bushfire threat?
- Where were you when you first found out about the fire? (IF NOT AT HOME: Did you try to return? What happened?)

> **CFS PERSON:** about warning messages emergency alerts? Phone trees? Social media? Bushfire Information Hotline? *This may be at any appropriate point in this story*

- How useful did you find any messages from CFS
- Did you try to find out more information about the fire? How?
- What did you decide to do about the fire **initially**?
- Main reasons for your initial decision?
- What did you <u>ultimately</u> end up doing?
- Why did you decide to do that? If the plan changed, why?

20.    IF the interviewee left, what was the TRIGGER TO LEAVE?

- How did it all work out?

- CHECK: Impact of the fire: Loss/damage to property or possessions? Loss of pets, livestock?

Repeat for multiple fire events (esp. Bangor). Include flood event if relevant to interviewee.

Thank you for sharing those experiences with us.

We just have a few more questions to finish up.

## Section 6: Looking back

21.    If experienced a fire before this one, how did that one impact what you did this time?

22.    Knowing what you know now about the fire, what if anything would you have wanted to do differently?

23.    Have you changed your bushfire plan since the January fires? If so, how?

24.    Is there any information you wish you had had before this last fire?

- What would you have liked it to look like?

- Where would you have liked it to be/to get it from?

> INTERVIEWER: *Check with CFS person if there any questions that still need covering.*

## Section 7: Researcher to finalise interview

In home:

- Thank resident

- leave behind:

  - Information Sheet (Statement)
  - Sources of help sheet.

Back in vehicle

- Check the Tick'n'flick again

- Add relevant Meta-comments.

# Appendix B

**Participant Information Statement**

SA Bushfires January 2014: Capturing Community Experiences

**Invitation**

You are invited to participate in research being conducted by CQUniversity for the Bushfire and Natural Hazards Cooperative Research Centre (CRC) and the SA Country Fire Service (CFS), provided you are aged 18 years or more. This joint project is being undertaken so as to improve future bushfire safety for SA communities.

**What is the purpose of this study?** (You may also ask the researcher for a verbal summary)

Bushfires are an unfortunate part of life in rural SA and in many other parts of Australia. When they do occur it is important to learn as much as possible about the fires and people's experience of them. This project is being undertaken so that the SA Country Fire Service can develop a better understanding of how to improve community safety for the future by learning as much as possible about what happened before and during the fires. The research will focus on issues relating to community bushfire safety, including:

- What do people understand about bushfire danger, property preparation, warnings, and leaving early on days when bad fire weather is forecast?
- What were the experiences of people affected by the recent bushfire, and what did people do before and during the fire?
- Were the bushfire alerts and warnings adequate, how did the residents seek information and where did they look?
- What would have helped the residents manage better?

**Why have I been invited to participate?**

Members of SA communities affected by the bushfires which started in January 2014 are being approached and asked to describe their experiences of the fires. We want to interview people who experienced the recent bushfires. People aged 18 years or more are being contacted in two ways:

Residents will be approached personally by interviewers who are visiting homes in areas affected by the fire and invited to take part by being interviewed.

Some people will be contacted directly by mail or phone because their property address lies within an area affected by the bushfires.

**What will I be asked to do?**

You would be participating in an interview. With your permission, the interview would be recorded and later transcribed. The interview can take place when it suits you. Interviews can take from 30 minutes to an hour.

*The interviewer will ask things like:*

- Prior to the bushfire, what had you done to prepare your property?
- Did you have a bushfire survival plan?
- Did you think there was going to be a day of bad fire weather?
- When and how did you first find out that you were threatened by a bushfire?
- What do you think you and others could have done differently to improve your safety before and during this bushfire?

Prior to the interview, you will be assigned a code number. In the recording and any subsequent transcripts of the interview you will only be identified by this code number. Any data linking your identity to this code number will be destroyed after the interview transcription has been checked for accuracy (31 May 2014).

The interview recording and transcript will only be available to university researchers and the Bushfire and Natural Hazards CRC. It is important that you understand that your involvement is this study is voluntary. While we would be pleased to have you participate, we respect your right to decline. If you decide to discontinue participation at any time, you may do so without providing an explanation.

**Are there any possible benefits from participation in this study?**

There may not be any direct benefit to you. However, your account of experiences and the information you provide may help with improving bushfire safety, and to reduce the impact of future bushfires on your community and others around the country.

**Are there any possible risks from participation in this study?**

The interview may result in some distress as you would be recalling your experience of the bushfire. You are free to end the interview at any time. If you subsequently wanted to talk to someone helpful about your bushfire experiences *Lifeline* provides a 24 hour telephone counselling service on 13 11 14. The Australian Psychological Society's web site has information about managing the aftermath of bushfires and other natural disasters at: http://www.psychology.org.au/publications/tip_sheets/trauma/.

**What if I change my mind during or after the study?**

It is important that you understand that your involvement in this study is voluntary. If you decide to discontinue participation at any time, you may do so without providing an explanation. If after the study you wish to subsequently withdraw your interview from the research please contact the Chief Investigator Dr Kirrilly Thompson on (08) 8378 4512 before 31 May 2014 (after this date all identifying information will have been removed from the interview transcripts and it will not be possible to withdraw the de-identified material).

**What will happen to the information when this study is over?**

All information will be treated in a confidential manner, and your name will not be used in any reports or other publications arising out of the research. All of the research will be kept either in a locked cabinet (for paper documents) or in a password protected computer in the Appleton Institute at CQUniversity.

Data will be kept for a period of 5 years and destroyed after this period (either by deletion of computer based files or shredding of paper based documents).

**How will the results of the study be used?**

A report about the fire and recommendations for improving community bushfire safety will be written for the SA Country Fire Service. Findings from the research may be reported at scientific conferences and in research journals. No identifiable material will be included in any reports. A copy of the main report will be available through either the Bushfire and Natural Hazards CRC website (http://www.bnhcrc.com.au) or the South Australia CFS website (http://www.cfs.sa.gov.au/) later in the year.

As identities of participants will be kept confidential to all except the research team, you will not be identifiable in the publications. Results and findings of the study will be accessible to you via the CRC website. If you wish to discuss and ask questions about the findings of the study you are encouraged to contact Dr Kirrilly Thompson via email or phone.

**What if I have questions about this study?**

If you have any further questions about the study you are welcome to contact Dr Kirrilly Thompson (CQUniversity; email: kirrilly.thompson@cqu.edu.au; phone 08 8378 4512); or Ms Lyndsey Wright (Bushfire CRC; email: lyndsey.wright@bushfirecrc.com; phone 03 9412 9600).

This study has been approved by the CQUniversity Human Research Ethics Committee. If you have questions which Dr Kirrilly Thompson or Ms Lyndsey Wright have been unable to answer to your satisfaction, or if you have concerns or complaints about the conduct of this study, you may contact Sue Evans, Ethics Officer, CQUniversity Human Research Ethics Committee, Office of Research Services, CQUniversity, North Rockhampton, Queensland, 4701, (ph.: 07 4923 2603, e-mail: ethics@cqu.edu.au)." Please quote the application reference number CQUHREC H14/03-037

**Thank you for taking the time to consider your participation in our research.**

This information statement is for you to keep as a part of your records and understanding of the research. If you wish to participate, please complete the Consent Form.

# Appendix C

**Consent Form**

**Title of Project**: *Eden Valley, Bangor and Rockleigh Fires January 2014: Capturing community experiences*

1. I have read and understood the 'Participant Information Statement' for this project.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study involves a 30 – 60 minute individual, confidential, recorded semi-structured interview exploring my experience of the 2014 bushfire.
4. I consent to having my interview recorded          Yes   /   No
5. I understand that all research data will be securely stored on CQUniversity premises for five years, and will then be destroyed.
6. Any questions that I have asked have been answered to my satisfaction.
7. I agree that research data gathered from me for the study may be published provided that I cannot be identified as a participant.
8. I understand that the researchers will ensure my identity remains confidential and that any information I supply to the researcher(s) will be used only for the purposes of this research.
9. I agree to participate in this investigation and understand that I may withdraw at any time without any effect, and if I so wish may request that any data I have supplied to date be withdrawn from the research provided I request this before 31 May 2014.

Name (or initials) of participant:

_____

Signature:                                    Date:

_____


**Statement by Investigator**

☐ I have explained the project & the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation

If the Investigator has not had an opportunity to talk to participants prior to them participating, the following must be ticked.

☐ The participant has received the Information Sheet where my details have been provided so participants have the opportunity to contact me prior to consenting to participate in this project.

Name of Interviewer:

_____

Interviewer signature: _____     Date: _____

# Appendix D

**Sources of Help**

Resources for Psychological Preparedness and Recovery

**About**

Thank you for participating in the Bushfire CRC community bushfire safety follow-up research. This handout is intended to provide you with a list of some resources concerning bushfire preparedness and recovery that you may wish to refer to. If you found that the questions asked of you elicited any unpleasant memories or feelings about the recent bushfire you may find these resources useful.

**Please Note**

If you are feeling highly distressed and could benefit from immediate assistance please refer to your local GP or hospital service. Feelings of distress should not be ignored and there are many professionals available to assist you in your recovery.

**Translations**

***Translating and Interpreting Service***

Call: 13 14 50

**Online Resources**

*The Australian Psychological Society*
Search for a psychologist in your area. Access over 2,300 psychologists Australia-wide who are in private practice and provide services for a fee: visitwww.findapsychologist.org.au

*Bushfire information package for women*
Women's Health Victoria
This women's health information package, and other included resources, is designed to assist in the initial and ongoing stages of recovery for those affected by the bushfires and other disaster situations. Although Victorian-focused, this information may also be useful to women from other states.
*Visit:* http://whv.org.au/publications-resources/clearinghouse-connectors/chc-victorian-bushfires-disaster-situations

*Resources for children*
Australian Red Cross
This website provides information for assisting children and young people in the time following a disaster event, including the below.

***Helping Children and Young People Cope with Crisis***, visit:
http://www.redcross.org.au/files/Helping_Children_and_Young_People_Cope.pdf

*After the Emergency: A Book to Help Kids Cope with Emergencies*, visit:

http://www.redcross.org.au/files/Emergency_services_after_the_emergency_kids_booklet_20110609.pdf

*Recovering from the impact of natural disasters*

Australian Psychological Society

This website contains resources to help residents affected by natural disasters like bushfires. Visit:

https://www.psychology.org.au/topics/disasters/bushfires

*Getting immediate support*

Beyond Blue

For people concerned about feelings of depression and anxiety

Visit: http://www.beyondblue.org.au/get-support/get-immediate-support

**Telephone Help-Line Services**

If you feel you would like to talk to someone please find below a list of useful resources for you to contact.

*Getting immediate support*

Beyond Blue

For people concerned about feelings of depression and anxiety

Call: 1300 22 4636

The Samaritans

Call: (08) 9381 5555 or 1800 198 313 (Free call)

Lifeline

Call: 13 11 14

*Mental Health Emergency Response Line (SA)*

SA Health

For assistance in a mental health emergency

Call: 13 14 65 (24 hours)

*Child Wellbeing*

Families SA - Department for Education and Child Development

Call: (08) 8124 4185 (After hours crisis call 131611)

**Kids Help Line**

**Call:** 1800 55 1800

# Appendix E

## South Australia Bushfire 2014 Research Task Force: Interview Summary Checklist

*Interview number for current day_____*

*Please complete shaded area prior or by observation (Items 1-14)*

**Recorder Number:** ...............   **Folder Letter:** ............**File#** ................   **Date of Interview**
......../…………../2014

| | |
|---|---|
| **Name of Researcher:** ............................................... | **Name of CFS** <br> **assistant** .................................................... |
| **Name (or initials) of** <br> **Interviewee/s** ................................................................................................ <br><br> **Gender of Interviewee/s   (If more than one give number)**           **Male** .............. <br>          **Female** ............. | |

| |
|---|
| **Street Address of** <br> **Property**............................................................................................................... |

| | | |
|---|---|---|
| **Is the property in the fire scar** *(please circle)*        Yes | **No (near edge)** | **No (300m + away)** |

| | | |
|---|---|---|
| **Was it destroyed?** *(please circle)* | Yes | No |
| **Any evidence of damage** *(please circle)* | Yes | No |

**Which of the following best describes the house/property**

☐House on a standard sized residential block

☐House on a large 'lifestyle' type block

☐ Farm or other agribusiness including winery
(specify)_____

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

**About how far from the house is the nearest significant bushland***?_____metres*

| (i.e. areas with trees , shrubs, and other natural vegetation, and is minimally cultivated) |
|---|

### *Please circle, tick or provide details as appropriate*

15. Previously interviewed about the January bushfire? ☐YES ☐NO

Yes (details) _____

16. Occupational status of the **main interviewee** (can be multiple)

☐Full Time Paid Employment

☐Self employed                              ☐Not able to work

☐Part Time /Casual Employment            ☐Other_____

☐Full time domestic duties

☐Full time Student

☐Unemployed

☐Retired

☐Part-time volunteer

Usual **Household**/Household composition on day of fire *(Indicate number of each as applicable)*

*(Please write a number)*

|  | 17. **Usual Household** | 18. **Day/s of fire** |
|---|---|---|
| Adult over 65 |  |  |
| Adults 19-65 |  |  |
| Teenagers (13-18) |  |  |
| Children 5- 12 |  |  |
| Children under 5 |  |  |
| People frail/chronic illness |  |  |
| People with a disability |  |  |
| Pets? Poultry? Livestock? |  |  |

19.
Comments/notes_____
—

Language

20. Non English speaking          ☐YES ☐NO

If yes, language:_____

21. Year of birth (or age) of interviewee/s

Interviewee 1...................       Interviewee 2...............................

22. Does the household have pets/livestock?

☐Yes                    ☐No

23.  If yes, what:

Pets      (type and number) _____

Livestock (type and number) _____

Other     (type and number) _____

24. Any of the household previously, or currently, a member of a Fire Brigade?

☐ Yes Current          ☐ Yes Previous              ☐No

25. Property Status?

☐Principle residence☐Holiday/Weekend residence☐Other, please specify

_____

26. Ownership of the property

☐Householder owns house with or without a mortgage

☐Householder rents the house

☐Householder manages property for absentee owner (house included in package)

27. Fire Insurance

| House: | ☐ Fully Insured | ☐ Underinsured | ☐ Have no insurance |
|---|---|---|---|
| Contents: | ☐ Fully Insured | ☐ Underinsured | ☐ Have no insurance |

Machinery/equipment: ☐ Fully Insured ☐ Underinsured ☐ Have no insurance

Livestock, pets, animals: ☐ Fully Insured ☐ Underinsured ☐ Have no insurance

28. Other relevant insurance/issues?

_____

_____

_____

29. How long has the main interviewee lived at this address? _____Years

30. What sort of community do they think it is?

Your neighbours know you? ☐ Yes ☐ No

Neighbours cooperate if there are issues in the area ☐ Yes ☐ No

Sense of personal connection with neighbours ☐ Yes ☐ No

Neighbours socialise much with each other? ☐ Yes ☐ No

Could get help easily from your neighbours if necessary? ☐ Yes ☐ No

31. Participated in community bushfire safety activities? ☐ Yes ☐ No

If YES, which? _____

32. Past experience with bushfire? ☐ Yes ☐ No

33. If Yes, ☐ Actively defended? ☐ Only observed?

If Yes, when and where_____

Level of concern about bushfire in the past?

34. Thought home/family at risk ☐ Yes ☐ No

35. Level of concern *(ask then circle)*

Not at all $\longrightarrow$ Extremely
| 1 | 2 | 3 | 4 | 5 |

Notes/Comment

_____

_____

_____

36. Sources of bushfire safety information in the 12 months BEFORE the January bushfire?

☐ CFS Website

☐ CFS Your Guide to Bushfire Safety

☐ CFS information session (e.g. school, rotary etc.)

☐ Local CFS brigade members

☐ Bushfire Information Hotline

☐ CFS Face book Page

☐ CFS FireApp

☐ Friends/ Family/ Neighbours

☐ Experience of other fires

☐ Participated in Community Fire Safe Group

☐ Participated in a Firey Women Workshop

☐ Attended a Bushfire Ready / Blitz meeting

☐ Article in journal, magazine or newspaper

☐ Other

37. Comments on local concerns and local initiatives

_____

_____

_____

_____

_____

_____

## Bushfire Plan

38. Before the January bushfire: did they have a bushfire plan for what they would do if threatened by a fire?

☐ Yes    (Written Plan)        ☐ Yes   (Mental Plan)            ☐ No

39. What was the plan?

☐ All stay and defend (unambiguous)

☐ Wait and see how bad it is then decide

☐ Some people leave early, others stay and defend

☐ Whole household leaves

☐ No concrete plan

Main reason for this plan:

| |
| --- |
| |
| |
| |

40. Was/did the plan

Discussed                              ☐ Yes ☐ No

Practiced                              ☐ Yes ☐ No

Include pets                           ☐ Yes ☐ No

Include a backup plan                  ☐ Yes ☐ No

41. Was CFS material used to prepare the plan?        ☐ Yes    ☐ No

What CFS material was used (if any)?

☐ Bushfire Survival Plan template

☐ Your Guide to Bushfire Safety

☐ CFS Website

☐ CFS Fire Ready App (Household BF self-assessment tool)

_____

_____

_____

_____

42. Specific Bushfire Preparations (well before the 12 January fire) mentioned
*(See page over also)*

| Preparations | Please tick: UNPROMPTED |
|---|---|
| I have a plan in mind - just knowing what I am going to do | |
| I have attended a CFS bushfire information session | |
| I have a copy of 'Your Guide to Bushfire Safety' from the CFS | |
| I have written a household Bushfire Survival Plan | |
| I have practiced our household Bushfire Survival Plan | |
| I have a plan to relocate my children/ parent / dependent with a disability | |
| I have talked about bushfire risk with family or others in the house | |
| I have talked about bush fire risk with my neighbours | |
| I have the CFS FireApp on my phone or tablet | |
| I have a bushfire sprinkler system | |
| I have a water supply independent of the mains | |
| I have a power supply independent of the mains | |
| I have protective clothing | |
| I have a clear space around the house | |
| I have clear gutters | |
| I have an identified safe destination and evacuation route mapped out | |

| | |
|---|---|
| I have an identified safe destination and evacuation route mapped out for my pets and livestock | |
| I am involved in a Community Fire Safe Group in the street/area | |
| I have emergency kit ready | |
| I have supplies ready for my pets and livestock (e.g. food, water) | |

## January 2014 Bushfires

43. Thinking back to that time did they recall any specific cues or warning about the fire risk

☐ None                                    ☐ Hot weather/high winds

☐ Total Fire Ban                          ☐ SES Extreme heat warnings

☐ Fire Danger Ratings (Warnings)          ☐ Other fires in the area

44. When they first became aware that fire was in the area how concerned were they about fire actually threatening their home *(ask then circle)*

| Not at all | a little bit | somewhat | very | Extremely |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

45. Did they do anything particular to prepare for the possibility of a bushfire?

☐ Turned on radio for information          ☐ Relocated pets/livestock

☐ Turned on television for information      ☐ Looked on the CFS website

☐ Telephoned friends/neighbours/family     ☐ Went on Facebook or Twitter

☐ Collected valuables to take to safety     ☐ Blocked gutters and filled with water

☐ Turned on sprinklers + generators         ☐ Looked on another website

☐ Arrange for safety of pets/livestock       ☐ Organised protective clothing

☐ Emailed friends/neighbours/family

☐ Call emergency authorities (fire/police)

☐ Just waited and see what would happen

☐ Return to home (if away from home at the time of the fire)

☐ Travelled somewhere to be better able to see where the fire was

☐ Rang Bushfire Information Hotline

☐ Took no specific action because of the fire threat

46. How /where did they find out of the bushfire threat

☐ Saw smoke

☐ Saw flames

☐ Emergency Alert received on mobile phone

☐ Emergency Alert received on landline

☐ Warning message on Radio,

which one?_____

☐ Television

☐ CFS Website

☐ Call from neighbours/friend

☐ CFS FireApp

☐ CFS Twitter feed

☐ CFS Facebook

☐ Other social media which one …..

☐ Other_____

47/48. Were people aware of the following CFS initiatives during the fire? And if so, how USEFUL were these to them? *(Circle 1 – 5 based on interviewee general comments – only ask/rate if already aware of them)*

**Website:**

☐ Aware        ☐ Unaware    ☐ Not mentioned

*Not at all useful* ————————————————→ *Extremely useful*
**1**                    **2**                    **3**                    **4**                    **5**

**Radio** (Warning messages & CFS interviews on Radio):

☐ Aware     ☐ Unaware     ☐ Not mentioned

*Not at all useful* ——————————————————————→ *Extremely useful*

**1**        **2**        **3**        **4**        **5**

---

**TV** (Warning messages & CFS interviews on TV

☐ Aware     ☐ Unaware     ☐ Not mentioned

*Not at all useful* ——————————————————————→ *Extremely useful*

**1**        **2**        **3**        **4**        **5**

---

**Bushfire Information Hotline**

☐ Aware     ☐ Unaware     ☐ Not mentioned

*Not at all useful* ——————————————————————→ *Extremely useful*

**1**        **2**        **3**        **4**        **5**

---

**Fire App**

☐ Aware     ☐ Unaware     ☐ Not mentioned

*Not at all useful* ——————————————————————→ *Extremely useful*

**1**        **2**        **3**        **4**        **5**

---

**Social Media**

☐ Aware     ☐ Unaware     ☐ Not mentioned

*Not at all useful* ——————————————————————→ *Extremely useful*

**1**        **2**        **3**        **4**        **5**

---

**SMS Alerts**

☐ Aware     ☐ Unaware     ☐ Not mentioned

*Not at all useful* ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯➤ *Extremely useful*

**1**　　　　　**2**　　　　　**3**　　　　　**4**　　　　　**5**

---

**Land Line Messages**

☐Aware　　　☐Unaware　☐Not mentioned

*Not at all useful* ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯➤ *Extremely useful*

**1**　　　　　**2**　　　　　**3**　　　　　**4**　　　　　**5**

---

**Phone Trees** (branching contact numbers)

☐Aware　　　☐Unaware　☐Not mentioned

*Not at all useful* ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯➤ *Extremely useful*

**1**　　　　　**2**　　　　　**3**　　　　　**4**　　　　　**5**

---

49. Comments about CFS messages and warnings

_____

_____

_____

_____

50. Was the main interviewee at home when he/she first became aware of the bushfire threat?

☐Yes　　　　　　　　☐No

If person NOT at home, what did they do?:

_____

_____

_____

_____

51. When they heard about the fires did they look for more information?  ☐ Yes  ☐ No

52. If yes where did they look?

☐ Television

☐ Social Media

☐ Bureau of Met web site

☐ CFS Website

☐ CFS FireApp

☐ Radio

☐ Bushfire Information Hotline

☐ Family or friends

☐ Didn't look for information

☐ Other _____

53. What did they decide to do INITIALLY?

☐ All stay and defend (unambiguous)

☐ Wait and see how bad it is then decide

☐ Some people leave early, others stay and defend

☐ Whole household leaves

☐ No concrete plan

Main reason for this

|  |
|  |
|  |

54. What did they decide to do ULTIMATELY?

☐ All stay and defend (unambiguous)

☐ Wait and see how bad it is then decide

☐ Some people leave early, others stay and defend

☐ Whole household leaves

☐ No concrete plan

Main reason/s for this :

_____

_____

_____

55. If the plan changed, why was this the case?

_____

_____

_____

56. If they LEFT, what were the triggers to decide to leave?

☐ Saw smoke

☐ Saw flames

☐ Emergency Alert message

☐ Advice from police/firefighters/SES

☐ Phone information from
  family/friends/neighbours

☐ Ordered to evacuate by police

☐ Media information/warnings

☐ Face-to-face advice/information from
  neighbours

☐ House prepared, nothing more to do

☐ Fire impacted on property

☐ Heard/saw aircraft (incl. helicopters)

☐ Other_____

57. How did it workout

_____

_____

_____

58. Check: Any damage/loss? – This is the householder's assessment

☐ No damage: fire never really threatened the property

☐ Fire threatened but no damage

☐ Minor damage

☐ Major damage

☐ House was destroyed

59. Anything else damaged/destroyed?  (e.g. shed, water tank, caravan or vehicle) ☐ Yes  ☐ No

If Yes, what? _____

60. Did the bushfires injure or kill any pets or livestock   ☐ Yes   ☐ No

If yes, Details:

_____

_____

61. If they'd experienced fire before, did that impact behaviour/decisions this time? ☐ Yes
☐ No

If yes, how?

_____

_____

_____

62. As a result of the fire have you changed your plan? ☐ Yes    ☐ No

63. Done something different within the original plan? ☐ Yes    ☐ No

If yes, what?

_____

_____

_____

64. Was there additional information they wished they had:    ☐ Yes    ☐ No

If yes, what/when?

_____

_____

_____

_____

> **CFS PERSON:** Please ensure you thank the interviewee and mention how useful such interviews are to the CFS. Interview team please ensure you complete over page after the interview.

## After the interview! PLEASE COMPLETE THIS PART TOGETHER IN THE VEHICLE:

65. To help the data analysts, please write a brief 'abstract' or summary of this householder's account, noting anything of special interest:

_____

_____

_____

_____

66. This interview was an excellent example/s of:

_____

_____

_____

67. This interview is unique in that it:

_____

_____

_____

68. This interview reinforces other interviews in that it:

_____

_____

69. Three key words for this interview would be:

1. _____
2. _____
3. _____

# Appendix F

## Participation in this Research and Consent

### INFORMATION STATEMENT

**Invitation**

You are invited to participate in research being conducted by CQUniversity for the Bushfire and Natural Hazards Cooperative Research Centre and the SA Country Fire Service. This joint project is being undertaken with the objective of improving community bushfire safety.
*This survey takes approximately 25 minutes to complete, and most questions are optional. You can download a detailed version of the information presented below HERE*

**What is the purpose of this study?**

Bushfires are a part of life in rural SA and in many other parts of Australia. When they do occur it is important to learn as much as possible about the fires and people's experience of them. This project is being undertaken so that the CFS can develop a better understanding of how to improve community safety for the future by learning as much as possible about what happened before and during the fires. The research will focus on issues relating to community bushfire safety, including:

- What do people understand about bushfire danger, property preparation, warnings, and leaving early on days when bad fire weather is forecast?
- What were the experiences of people affected by the recent bushfire, and what did people do before and during the fire?
- Were the bushfire alerts and warnings adequate, how did residents seek information, where did they look?
- What would have helped residents manage better?

**Why have I been invited to participate, and what does it involve?**

Members of communities affected by SA bushfires in January/February 2014 are being asked to describe their experiences of recent bushfires. People aged 18 years or more are invited to participate in this online survey, which covers things like:

- Prior to the bushfire, what did you do to prepare your property?
- Did you have a bushfire survival plan?
- Did you think there was going to be a day of bad fire weather?
- When and how did you first find out that you were threatened by a bushfire?
- What do you think you and others could have done differently to improve your safety before and during this bushfire?

**Are there any possible benefits or risks from participation in this study?**

Your account of experiences and the information you provide will help with improving bushfire safety, and to reduce the impact of future bushfires on your community and others around the country. If you experience some distress when recalling bushfire experiences, you may end the survey, call Lifeline 24-hour counselling (131114), or access Australian Psychological Society disaster help resources.

# South Australia 2014 Fires Survey

## Participation in this Research and Consent

**What if I change my mind during or after the study?**

Your involvement in this study is voluntary, and we respect your right to discontinue participation in this survey, which you may do without providing an explanation. Your anonymous data will not be retrievable after submission, if you wish to discuss this please contact the Chief Investigator Dr Kirrilly Thompson on 0413 616 650 before 31 May 2014.

**What will happen to the information when this study is over?**

All information will be treated in a confidential manner, and your name will not be used in any publication arising out of the research. All of the research will be kept either in a locked cabinet (for paper documents) or in a password protected computer in the Central Queensland University's Appleton Institute in Adelaide. Data will be kept for a minimum period of 5 years and destroyed after this period (either by deletion of computer based files or shredding of paper based documents).

**How will the results of the study be published?**

A report about the fire and recommendations for improving community bushfire safety will be written for the SA CFS. Findings from the research may be reported at scientific conferences and in research journals. No identifiable material will be included in any reports. A copy of the main report will be available on either the Bushfire CRC website or the Bushfire and Natural Hazards CRC website later in the year. Results and findings of the study will be accessible to you via the Bushfire CRC website. If you wish to discuss and ask questions about the findings of the study you are encouraged to contact Dr Kirrilly Thompson via email or phone (details below).

**What if I have questions about this study?**

If you have any further questions about the study you are welcome to contact Dr KirrillyThomson (CQUni Appleton Institute; email: kirrilly.thompson@cqu.edu.au or phone 0413 616 650); or Ms Lyndsey Wright (Bushfire CRC; email: lyndsey.wright@bushfirecrc.com; phone 03 9412 9600).This study has been approved by the Central Queensland University Human Ethics Committee (Reference: CQUHREC H14/03-037). If you have questions which Dr Kirrilly Thompson or Ms Lyndsey Wright have been unable to answer to your satisfaction, or if you have concerns or complaints about the conduct of this study, you may contact CQUni's Ethics Officer Mrs Sue Evans Telephone: (07) 4923 2603 Fax: (07) 4923 2600 or Email: ethics@cqu.edu.au

Thank you for taking the time to consider your participation in our research.
After giving an answer please click **Next** at the bottom of each page to progress
If you wish to participate please indicate your consent below.

# *1. By ticking yes to the following question you indicate that:

## - you are 18 years of age or older; and
## - have read and understood the information provided above; and
## - you agree to participate in this study; and
## - you consent to the date being used as described in the introductory note.

○ Yes I wish to participate in this survey

○ No I do not wish to proceed

## About yourself and your household

First we would like to know a little about you and the people who share the house you live in

### 2. Are you ?

○ Male

○ Female

○ Prefer not to answer

### 3. What is your age group ?

○ 18 to 24

○ 25 to 34

○ 35 to 44

○ 45 to 54

○ 55 to 64

○ 65 to 74

○ 75 or older

○ Prefer not to say

### 4. Which of the following describes your employment status ?
### (you may indicate more than one answer)

☐ Full time paid employment

☐ Self employed

☐ Part time/casual employment

☐ Full time domestic duties

☐ Full time student

☐ Unemployed

☐ Retired

☐ Part-time volunteer

☐ Not able to work

☐ Prefer not to say

## 5. Which of the following best describes the people who usually live in your home or on your property ?

- ○ Sole resident
- ○ Couple
- ○ Couple with dependent children
- ○ Couple with adult children
- ○ Single parent with dependent children
- ○ Single parent with adult children
- ○ Multiple families with dependent children
- ○ Multiple families with adult children
- ○ Couple sharing property with older parents
- ○ Family sharing property with older parents
- ○ Other shared adult household
- ○ Other

## 6. What is the usual number of people that live in your house in each of the following categories ?

Adults (older than 65 years)

Adults (19 to 65 years)

Teenagers (13 to 18)

Children (6 to 12 years)

Children (2 to 5 years)

Children (less than 2 years old)

## 7. Do any members of your household match the following descriptions ? (you can select more than one)

☐ A person who cares for someone with a physical disability living on this property

☐ A person who cares for someone with a mental or learning disability living on this property

☐ A person who cares for someone with a physical and mental or learning disability living on this property

☐ A person who cares for someone aged over 60 years living on this property

☐ A person who cares for a child aged under 4 years living on this property

☐ None of the above

Provide additonal infomation for clarification if required

[                                        ]

## 8. Do you speak a language other than English at home ?

○ Yes

○ No

If Yes (what language is this)

[                                        ]

## Understanding where you live

We know want to ask a few questions about the property, the area that you live in and how you think about it.

### 9. What is your postcode ?

Postcode [          ]

### 10. What is the name of your suburb or of the nearest town ?

[                                        ]

### 11. How long have you lived in this area ?

○ Less than one year

○ 1 to 5 years

○ 5 to 10 years

○ 11 to 20 years

○ More than 20 years

### 12. Is this a multi-generational property - that is one which held by your family over a number of generations ?

○ Yes

○ No

If yes - how many years has it been in the family

[                                        ]

### 13. What type of residence is this for you ?

○ Main residence (family home)

○ Secondary residence

○ Holiday home or similar

Other (please specify)

[                                        ]

## 14. Do you own, rent or manage this property ?

○ Own (with or without a morgage)

○ Rent

○ Manage

Other (please specify)

[                                    ]

## 15. Which of the following best describes the property ?

○ House on a residential block

○ House on a small acreage (<10ha /20 acres)

○ House on a large acreage (> 10ha /20 acres)

Other (please specify)

[                                    ]

## *16. Do you have pets, poultry or livestock on your property ?

○ Yes

○ No

**17. If you had pets or livestock how many of each of the following did you have before the fire? (or in December 2013)**

| | |
|---|---|
| Dogs | |
| Cats | |
| Fish | |
| Horses/Donkeys/Ponies | |
| Birds (other than chickens) | |
| Chickens | |
| Ducks | |
| Cattle | |
| Sheep | |
| Alpacas | |
| Deer | |
| Other (specify number only) | |

**18. If you had types of pet or livestock not listed in the previous question, in a few words, please list them below**

**19. Of the pets listed above, regarding the one pet you consider yourself closest to, please indicate the degree to which you:**

| | Not at all | A little | Somewhat | Very much so | N/A |
|---|---|---|---|---|---|
| Feel they are a member of the family | ○ | ○ | ○ | ○ | ○ |
| Feel that they are 'person-like' | ○ | ○ | ○ | ○ | ○ |
| Would keep them close-by when you are distressed | ○ | ○ | ○ | ○ | ○ |
| Would be distressed if separated from them | ○ | ○ | ○ | ○ | ○ |
| Would risk your safety to protect them from harm | ○ | ○ | ○ | ○ | ○ |

## 20. How close is the house to the nearest bush land (mostly tall trees), scrub land (shrubs/low trees), and grass land (grasses/ground covers) ?

| | Next door | 1 House block | Across road/other break | 1 House block plus road/other break | Approx. 100m away | 100-300m away | 300-600m away | 600-1000m away | More than 1km away |
|---|---|---|---|---|---|---|---|---|---|
| Bush land | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Scrub land | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Grass land | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

## 21. How would you describe your local area ?
## Please tick all that are applicable

☐ Predominately rural

☐ Country town

☐ Area with a rural history adjacent to an urban area

☐ Urban area surrounded by bush/scrub/grassland

☐ Urban or suburban

☐ Farming or grazing or other agricultural

☐ Industrial

☐ Commercial

☐ Smallholder or hobby farm

☐ Tourist Area

☐ Lifestyle/recreational properties

☐ An area of high natural/conservation value

☐ Winery region

Other (please specify)

[                              ]

## 22. Which of the following best describes the local community ?

○ People in the area regularly socialize and are close friends

○ People in the area generally get along and talk to each other

○ People in the area generally know but don't talk to each other

○ There is not a lot of interaction between people

### 23. When you first moved to the area, how did you rate the threat of bushfire ?

| | Didn't consider | No threat | Low | Medium | High | Very high | Extreme | N/A |
|---|---|---|---|---|---|---|---|---|
| To your family | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| To your property | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| To the local area | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| To your business | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| To your pets | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| To your livestock | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

### 24. What insurance cover do you have for fire?

| | Fully insured | Partially insured | Not insured | Not applicable | Don't know |
|---|---|---|---|---|---|
| House | ○ | ○ | ○ | ○ | ○ |
| Contents | ○ | ○ | ○ | ○ | ○ |
| Vehicles | ○ | ○ | ○ | ○ | ○ |
| Farm (structures, equipment) | ○ | ○ | ○ | ○ | ○ |
| Livestock | ○ | ○ | ○ | ○ | ○ |
| Business | ○ | ○ | ○ | ○ | ○ |

### 25. Prior to January 2014, do you recall the last time the local area experienced a bushfire ?

○ I do not know

○ Within the last 12 months (i.e. in 2013)

○ 1 to 5 years ago

○ 6 to 10 years ago

○ 11-15 years ago

○ 16 - 20 years ago

○ More than 20 years ago

○ Never

# South Australia 2014 Fires Survey

## Understanding past experience with bushfire

We now want to ask a few questions about your experiences with bushfire before January/February 2014

### 26. Are you a current or past employee or member of the SA CFS ?

☐ Current Employee

☐ Current Volunteer

☐ Past Employee

☐ Past Volunteer

☐ No

### 27. Prior to January/February 2014 when did you personally last experience a bushfire ?
### If yes please provide details

○ Have never experienced a bushfire before

○ Within the previous 12 months (ie in 2013)

○ 1 to 5 years ago

○ 6-10 years ago

○ 11-15 years ago

○ 16 to 20 years ago

○ More than 20 years ago

Experience with bushfire

# South Australia 2014 Fires Survey

## Your Planning for Bushfire

This section asks your thinking about and planning for bushfire

### 28. What have you done or intend to do to prepare the property for bushfire ?

| | Done in 2013 or before | Done earlier in 2014 | Intend to do | Feel Unnecessary | Not considered | Not applicable |
|---|---|---|---|---|---|---|
| I have a plan in mind - just knowing what I am going to do | ○ | ○ | ○ | ○ | ○ | ○ |
| I have attended a CFS bushfire information session | ○ | ○ | ○ | ○ | ○ | ○ |
| I have a copy of 'Your Guide to Bushfire Safety' from the CFS | ○ | ○ | ○ | ○ | ○ | ○ |
| I have written a household Bushfire Survival Plan | ○ | ○ | ○ | ○ | ○ | ○ |
| I have practiced our household Bushfire Survival Plan | ○ | ○ | ○ | ○ | ○ | ○ |
| I have talked about bushfire risk with family or others in the house | ○ | ○ | ○ | ○ | ○ | ○ |
| I have talked about bush fire risk with my neighbours | ○ | ○ | ○ | ○ | ○ | ○ |
| I have the CFS Fire App on my phone or tablet | ○ | ○ | ○ | ○ | ○ | ○ |
| I have a bushfire sprinkler system | ○ | ○ | ○ | ○ | ○ | ○ |
| I have a water supply independent of the mains | ○ | ○ | ○ | ○ | ○ | ○ |
| I have a power supply independent of the mains | ○ | ○ | ○ | ○ | ○ | ○ |
| I have protective clothing | ○ | ○ | ○ | ○ | ○ | ○ |
| I have a clear space around the house | ○ | ○ | ○ | ○ | ○ | ○ |
| I have clear gutters | ○ | ○ | ○ | ○ | ○ | ○ |
| I have an identified safe destination and evacuation route mapped out | ○ | ○ | ○ | ○ | ○ | ○ |
| I have an identified safe destination and evacuation route mapped out for my pets and livestock | ○ | ○ | ○ | ○ | ○ | ○ |
| I am involved in a Community Fire Safe Group in the street/area | ○ | ○ | ○ | ○ | ○ | ○ |
| I have emergency kit ready | ○ | ○ | ○ | ○ | ○ | ○ |
| I have supplies ready for my pets and livestock (e.g., food, water) | ○ | ○ | ○ | ○ | ○ | ○ |

Other (please specify)

|  |
|---|

**✱29. Do you have a plan as to what you and your household will do in the event of a bushfire ?**

○ Yes - I/We have a written plan

○ Yes - I/We have a plan in mind but it is not written down

○ No - I/We don't have a plan

**30. When do you recall that plan being written or prepared?**

    ⚪   In 2013 or before

    ⚪   Early in 2014

    ⚪   Since the fires of 2014

## Your Bushfire Plan

We would now like you to tell us a bit more about that plan and how you came to make it.

### 31. What best describes your household's plan in the event of a bushfire ?

○ Stay and defend

○ Some household members leave early, other stay and defend

○ Wait and see how bad it is and then decide

○ Shelter in place (passively)

○ Whole family (household) leaves early

### 32. Which of the following concerns and sources of information informed your decision to make a bushfire plan? (Please tick all that apply)

☐ Concern about bushfire risk

☐ Concern about survival of pets/livestock

☐ Ads on television

☐ Advice or concern of family

☐ Advice or concern of friends

☐ Advice from a CFS information session

☐ Advice from CFS website

☐ Advice from CFS volunteers

☐ Response to a school activity/project

☐ Experiences of 2014

☐ Experiences of fires prior to 2014

☐ Other (please specify)

**33. How important were each of the below to your decision to make a bushfire plan?**
**(Please rank all options in order of importance [1 = highest])**

| | | |
|---|---|---|
| [ ▼ ] | Concern about bushfire risk | ☐ N/A |
| [ ▼ ] | Concern about survival of pets/livestock | ☐ N/A |
| [ ▼ ] | Ads on television | ☐ N/A |
| [ ▼ ] | Advice or concern of family | ☐ N/A |
| [ ▼ ] | Advice or concern of friends | ☐ N/A |
| [ ▼ ] | Advice from a CFS information session | ☐ N/A |
| [ ▼ ] | Advice from CFS website | ☐ N/A |
| [ ▼ ] | Advice from CFS volunteers | ☐ N/A |
| [ ▼ ] | Response to a school activity/project | ☐ N/A |
| [ ▼ ] | Experiences of 2014 | ☐ N/A |
| [ ▼ ] | Experiences of fires prior to 2014 | ☐ N/A |

## 34. Who initiated the development of the plan ?

○ No one in particular (household in general)

○ Adult male

○ Adult female

○ Child

○ Someone outside of household

○ Can't recall

## 35. What were your main concerns/considerations in developing the plan ? Please tick all that apply

☐ Protecting myself and members of the family

☐ Protecting pets

☐ Had to care for frail or elderly in the home

☐ Had to care for children in the home

☐ Had an asthmatic in the home

☐ Had to care for a physically or mentally impaired person in the home

☐ Protecting property

☐ Our home was not well prepared for bushfire

☐ We would lose stock

☐ The road would be cut off

☐ The road would be blocked by traffic

Other (please specify)

[                                        ]

## 36. Please indicate whether the plan .... ?

| | Yes | No | Not Applicable |
|---|---|---|---|
| Has been discussed by the household | ○ | ○ | ○ |
| Has been practiced | ○ | ○ | ○ |
| Includes a back up plan | ○ | ○ | ○ |
| Differs between household members | ○ | ○ | ○ |
| Includes an identified place of refuge | ○ | ○ | ○ |
| Makes provision for children on the property | ○ | ○ | ○ |
| Makes provision for frail/elderly on the property | ○ | ○ | ○ |
| Makes provision for pets | ○ | ○ | ○ |
| Makes provision for other animals/live stock | ○ | ○ | ○ |
| Considers that a bushfire might start mid-week | ○ | ○ | ○ |
| Considers that a bushfire might start at night-time | ○ | ○ | ○ |

# South Australia 2014 Fires Survey

## Information about bushfires

We are interested in knowing the sorts of information that you have seen or received about bushfire and the messages that you recall.

### 37. Which of the following information (or places you received information) on preparing for bushfire do you recall getting or seeing in the 12 months before the fires of January/February this year ?

- [ ] Children bought messages/information home from school
- [ ] Through work
- [ ] CFS Website
- [ ] Posters
- [ ] Outdoor billboards
- [ ] CFS meeting or seminar or open day
- [ ] Mail/letters in the post
- [ ] Newspaper advertisements
- [ ] Newspaper lift outs
- [ ] Brochures
- [ ] Newspaper stories
- [ ] Have seen material (cannot recall specifically where it was from)

- [ ] Bushfire Survival Plan template
- [ ] CFS Facebook/Twitter or other social media
- [ ] Fridge magnet
- [ ] Television advertisements
- [ ] CFS field day
- [ ] Radio stories or articles
- [ ] I am a member or I know someone who is a member of CFS
- [ ] Local council
- [ ] Internet
- [ ] Radio advertisements
- [ ] Television stories or articles
- [ ] None of the above

Other (please specify)

[                                                                    ]

### 38. What general sources bushfire messages/terms/information sources are you familiar with? Please tick as many as you recall

- [ ] Bushfire Safer Places
- [ ] Total Fire Bans
- [ ] Prepare.Act.Survive
- [ ] Fire Danger Ratings
- [ ] Roadside danger signs
- [ ] Sirens on firetrucks
- [ ] Radio news reports
- [ ] Bushfire Information Hotline
- [ ] Bushfire Watch and Act message

- [ ] Bushfire Survival Plan
- [ ] CFS Fire Danger Map
- [ ] Bushfire Advice message
- [ ] Apps like 'CFS Fire App'
- [ ] Emergency warning message
- [ ] Advertising on TV, radio, newspapers, billboards
- [ ] Information about what to do around the home
- [ ] None of the above

Other (please specify)

[                                                                    ]

## 39. What was your main source of information for preparing your household pets for bushfire? (please indicate, or select n/a)

- ○ Bushfire Information Hotline
- ○ CFS website
- ○ CFS Facebook/Twitter or other social media
- ○ CFS meeting or seminar or open day
- ○ CFS field day
- ○ Newspaper stories
- ○ Radio advertisements
- ○ Radio news reports

- ○ Advertising on TV, radio, newspapers, billboards
- ○ Veterinary clinic center (website or phone)
- ○ Smaller animal welfare group (website or phone)
- ○ RSPCA (website or phone)
- ○ Department of Primary Industries and Regions
- ○ None of the above
- ○ Not applicable

Other (please specify)

[                                      ]

## 40. What was your main source of information for preparing your livestock for bushfire? (please indicate, or select n/a)

- ○ Bushfire Information Hotline
- ○ CFS website
- ○ CFS Facebook/Twitter or other social media
- ○ CFS meeting or seminar or open day
- ○ CFS field day
- ○ Newspaper stories
- ○ Radio advertisements
- ○ Radio news reports

- ○ Advertising on TV, radio, newspapers, billboards
- ○ Veterinary clinic center (website or phone)
- ○ Smaller animal welfare group (website or phone)
- ○ RSPCA (website or phone)
- ○ Department of Primary Industries and Regions
- ○ None of the above
- ○ Not applicable

Other (please specify)

[                                      ]

*41. Do you know /recall the terms "Bushfire Safer Precinct", "Last Resort Refuge", or "Bushfire Safer Settlement" ?

○ Yes

○ No

**42. Do you have a "Bushfire Safer Precinct", "Last Resort Refuge" or "Bushfire Safer Settlement", locally ?**

○ Yes

○ No

○ Unsure

If yes can you please say where it is

# South Australia 2014 Fires Survey

## Bushfire in January/February 2014

Bushfire affected various parts of South Australia in different ways during early 2014. We know want to understand how you responded to the fire threat in your area in this period.

### *43. Did bushfires affect the areas in which you live in January/February 2014 ?

○ Yes

○ No

○ I dont know

### 44. If yes: how long was the area threatened for?
### Please tick the most appropriate response

○ A few hours only

○ About a day

○ Between a day and a week

○ A number of different fires threatened the area over days/weeks

○ One fire but threatened at different times over days/weeks

○ Not applicable/not affected

○ Other (please specify)

**45. In the days immediately leading up to the day fire threatened the area or your home what preparations did you make for a possible bushfire ?**
**(Please select all that apply)**

☐ Made special arrangements for elderly/frail/unwell members of the household

☐ Emailed family/neighbours/friends (regarding bushfire risk or preparedness)

☐ Checked/turned on sprinklers/generators

☐ Watched/monitored CFS social media (Facebook/Twitter) for fire information

☐ Arranged to be elsewhere on day/days of high fire risk

☐ Checked on other website

☐ Arranged to stay home from work on day/days of high fire danger

☐ Stayed at or close to home because of fire threat

☐ Organized protective clothing

☐ Blocked gutters and filled with water

☐ Made special arrangements for pets/livestock

☐ Collected valuables ready to take to safety if I/we had to leave

☐ Watched/monitored CFS website for fire information

☐ Made special arrangements for children

☐ Watched/monitored television for fire information

☐ Watched monitored CFS Fire App for fire information

☐ Telephoned friends/neighbours/family (regarding bushfire risk or preparedness)

☐ Called emergency services (eg CFS/police) for advice

☐ Watched/monitored radio for fire information

☐ Did nothing special because of the fire threat

Other (please specify)

[                                                        ]

## 46. When you first became aware that bushfire threatened your area, how concerned were you about the risk ?

|  | Not very | Slightly | Moderately | Very | Extremely | N/A |
|---|---|---|---|---|---|---|
| To yourself | ○ | ○ | ○ | ○ | ○ | ○ |
| To your family | ○ | ○ | ○ | ○ | ○ | ○ |
| To your pets | ○ | ○ | ○ | ○ | ○ | ○ |
| To your livestock | ○ | ○ | ○ | ○ | ○ | ○ |
| To your house or property | ○ | ○ | ○ | ○ | ○ | ○ |
| To your your business | ○ | ○ | ○ | ○ | ○ | ○ |
| To others in the area | ○ | ○ | ○ | ○ | ○ | ○ |

## 47. How did you first find out about fires in your area? (Please select the main options that apply)

- ☐ Saw smoke
- ☐ Smelt smoke
- ☐ Heard fire sirens
- ☐ Saw flames
- ☐ Saw it on the CFS Fire App
- ☐ Saw it on the CFS website
- ☐ Through CFS email subscription
- ☐ Contact from friends/neigbours/family
- ☐ CFS Facebook site
- ☐ Offical warning on the television
- ☐ CFS Twitter feed
- ☐ Offical warning on the radio
- ☐ Offical warning on a web page
- ☐ Warned directly by police/SES/firefighters
- ☐ Offical warning via email, SMS or home phone
- ☐ On the CFS brigades radio
- ☐ Bushfire Information Hotline

## 48. Once you found out about the fire in your area what did you decide to do ?

○ All members of the household to stay and some or all to defend the house/property if necessary

○ Wait and see how bad it is then decide

○ Some members of the household to leave and others to stay and defend the house/property

○ Whole household to leave

○ Collect the children from school/daycare and return home

○ Collect children from school/daycare and go elsewhere

○ Was away from property and decided to stay away

○ Had no concrete plan

Other (please specify)

[                    ]

## 49. What information did you use to make that decision?

○ Fire Danger Rating

○ Phone Call from friends

○ CFS Website

○ Warnings on the radio

○ Social media (Not CFS)

○ Warnings on a website (other than CFS or BOM website)

○ Bushfire Information Hotline

○ Was what I had decided when making my Bushfire Survival Plan

○ Warnings or stories in the newspaper

○ Information from neighbours or friends

○ Total Fire Ban Warning

○ Gut instinct

○ Warnings on television

○ In person advice from police or emergency serivices

○ CFS Social media

○ In person advice/information from local CFS

○ Bureau of Meterology Warning

○ Common sense

○ None of the above

Other (please specify)

[                    ]

**50. Did you lose any of the following essential or other services during the period the fire threatened the area ?**

| | For an extended period and/or more than once | Yes for a short period only once | No | Don't know | Not avail./don't have |
|---|---|---|---|---|---|
| Gas | ○ | ○ | ○ | ○ | ○ |
| Electricity | ○ | ○ | ○ | ○ | ○ |
| Phone (Land-line) | ○ | ○ | ○ | ○ | ○ |
| Phone (Mobile) | ○ | ○ | ○ | ○ | ○ |
| Water | ○ | ○ | ○ | ○ | ○ |
| Internet access | ○ | ○ | ○ | ○ | ○ |
| Radio signal (national radio stations) | ○ | ○ | ○ | ○ | ○ |
| Radio signal (short-wave) | ○ | ○ | ○ | ○ | ○ |

We now want to ask a few questions about the time or times the fires in Janaury/February 2014 directly threathened your home or property

## 51. Did bushfires directly affect/threaten your property in January/February 2014 ?

○ Yes          ○ No

## 52. If yes : please describe for how long the property was threatened ?

○  A few hours only

○  About a day

○  Between a day and a week

○  A number of different fires threatened the area over days/weeks

○  One fire but threatened at different times over days/week

○  Other (please specify)

[                                        ]

## 53. How close did the fire get to your home or property?
## Select more than one if appropriate

☐  Damaged or destroyed the house

☐  Damaged or destroyed other buildings

☐  Reached the house but did not cause any damage to it

☐  Reached other building but did not cause any damage to them

☐  Burnt within the property but did not reach the house or other buildings

☐  Stopped at the boundary

☐  Burnt nearby

Other (please specify)

[                                        ]

**54. When you think back to the days immediately before the fire threatened your home how did you rate the threat of bushfire ?**

| | Didn't consider | No threat | Low | Medium | High | Very high | Extreme | N/A |
|---|---|---|---|---|---|---|---|---|
| To your family | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| To your property | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| To the local area | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| To your business | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| To your pets | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| To your livestock | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

**55. When you think back to the day/s that the fire threatened your property, what warnings or clues of fire danger do you remember?**

☐ None        ☐ Hot weather/high winds

☐ Total Fire Ban        ☐ SES Extreme heat warnings

☐ Fire Danger Warnings        ☐ Other fires in the area

☐ Other (please specify)

[                                                  ]

**56. What actions did you take to protect your home/family on the day/days the fire threatened ?**

**Tick all that apply**

☐ Turned on sprinklers + generators

☐ Turned on radio for information

☐ Rang Bushfire Information Hotline

☐ Relocated pets/livestock

☐ Looked on another website

☐ Turned on television for information

☐ Looked on the CFS website

☐ Collected valuables to take to safety

☐ Organised protective clothing

☐ Just waited and see what would happen

☐ Went on Facebook or Twitter

☐ Telephoned friends/neighbours/family

☐ Blocked gutters and filled with water

☐ Arrange for safety of pets/livestock

☐ Traveled somewhere to be better able to see where the fire was

☐ Return to home (if away from home at the time of the fire)

☐ Emailed friends/neighbours/family

☐ Call emergency authorities (fire/police)

☐ Took no specific action because of the fire threat

Other (please specify)

[                    ]

## 57. What did you do on the day/s the fire directly threatend your home or property ?

| | First time fire threatend | Second time fire threatend | Subsequent time fire threatend |
|---|:---:|:---:|:---:|
| Not at home by chance | ☐ | ☐ | ☐ |
| Not at home due to the predicted fire danger rating | ☐ | ☐ | ☐ |
| Left well before the fire arrived | ☐ | ☐ | ☐ |
| Left just before the fire impacted | ☐ | ☐ | ☐ |
| Attempted to protect our home/property but was unsuccessful | ☐ | ☐ | ☐ |
| Successfully protected our home/property | ☐ | ☐ | ☐ |
| Waited to see what happened and then had to take shelter | ☐ | ☐ | ☐ |
| At home and NOT directly impacted | ☐ | ☐ | ☐ |

## 58. What were the reasons for these actions ?

☐ Protecting my own life

☐ Protecting the lives of my family

☐ Protecting pets

☐ Protecting livestock

☐ Protecting home/property

☐ Knew the road would be cut off

☐ Knew the road would be blocked by traffic

☐ Did not have my home prepared

☐ Had to care for eldery /frail family members in my home

☐ Had to care for elderly/frail family members away from my home

☐ Had other people's children in my care

☐ Had an asthmatic in the household

☐ Directive from police or emergency services

Other (please specify)

| |
|---|

## 59. On the day/s the fire most directly theatened your home/property, what information sources did you use to make decisions?

| | Major Source | Supplementary Source |
|---|:---:|:---:|
| Fire Danger Rating in newspaper | ☐ | ☐ |
| Television | ☐ | ☐ |
| Social Media | ☐ | ☐ |
| Bureau of Meteorology website | ☐ | ☐ |
| Radio | ☐ | ☐ |
| Bushfire Information Hotline | ☐ | ☐ |
| CFS Website | ☐ | ☐ |
| Didn't look for information | ☐ | ☐ |

Other (please specify)

[                                    ]

## 60. How long before the fire arrived did you take decisive action?

○ The day before

○ The night before

○ On the morning

○ Before you saw smoke

○ Before the fire got within 5km of home

○ Before the fire got within 1km of home

○ Before the fire got within 500m of home

○ Before the fire got within 10m of home

○ Before the roads got too busy

Other (please specify)

[                                    ]

**61. How prepared do you think you were for the recent bushfire?**

○ Well prepared

○ Adequately prepared

○ Not very well prepared

○ Not prepared at all

## 62. Were you at home when you first heard about a fire or fires directly threatening your home / property ?

○ Yes each occasion

○ It varied

○ No I wasn't at home on any of these occasions

○ Can't recall

## 63. If you were not at home when you first heard about fires threatening your home did you try to get home at that time?

|  | The first time | The second time | On subsequent times |
|---|---|---|---|
| Yes | ○ | ○ | ○ |
| No | ○ | ○ | ○ |

## 64. How long did it take?

○ Less than 15 minutes

○ 15 - 30 minutes

○ 30 - 60 minutes

○ 1 -2 hours

○ More than 2 hours

○ Was unable to get home

**65. Did any member of the household decide to leave because the bushfire threatened your home / property ?**

○ Yes - the first (or only) time fire threatened

○ Yes - once but not the first time fire threatened

○ Yes - more than once when the fire threatened

○ Yes - many times due to prolonged fire threat

○ It varied

○ No

## 66. What were the triggers for you or the other members of your household to leave? Please tick all that apply

☐ Heard/saw helicopters/aircraft

☐ Could see/smell smoke

☐ Could see flames close by

☐ We had done all we could

☐ Could see flames in the distance

☐ Recommendation to relocate suggested by police/emergency services

☐ Advice from neighbours

☐ Evacuated or removed from property by police or emergency services

☐ Advice from family or friends

☐ Received an Emergency Warning Alert

☐ Information from Bushfire Information Hotline

☐ An official warning about the fire (other than an Emergency Alert)

Other (please specify)

[                    ]

## 67. How did you/they leave?

○ Walked

○ Family car/s

○ Neighbours' or friends car/s

○ Tranported by emegency services

○ Lift provided by stangers

Other (please specify)

[                    ]

### 68. Was travel along the route dangerous ?

☐ No

☐ Yes - lots of traffic and emergency service vehciles

☐ Yes - poor visibility due to smoke

☐ Yes - road close to the fire

☐ Yes - fallen/falling trees and branches

☐ Yes - seemed more dangerous than staying at home

Other (please specify)

[                                        ]

### 69. For how long did you (or they) leave because of the fire threat?

○ For a few hours

○ Overnight

○ 1-2 days

○ More than 2 days but less than a week

○ More than a week

Other (please specify)

[                                        ]

### 70. Where did you/they go? (you can select more than one option)

☐ Family, friends or neighbours house

☐ Community place (e.g. a shopping centre) well away from bushland

☐ Emergency Relief Centre

☐ Bushfire Safer Place (CFS designated)

☐ Other (please specify)

[                                        ]

## 71. Looking back, what do you feel about members of the family/household leaving during the fire ?

   ○  Leaving was unnecessary and if there's a next time they won't

   ○  Leaving was unnecessary but if there's a next time they would do it again

   ○  Leaving was the right thing to do

   ○  Leaving was necessary but if there's a next time they won't do it because it was so inconvenient

   ○  Leaving was necessary (although inconvenient) and if there's a next time they would do it again

   ○  Leaving was not a problem and they'd do it again

Other (please specify)

## Stayed and Defended

### 72. Did any member or the household stay at those times that fire threatened the home/property?

| | All of household | Some of household |
|---|---|---|
| Yes - the first (or only) time fire threatened | ○ | ○ |
| Yes - once but not the first time fire threatened | ○ | ○ |
| Yes - more than once when the fire threatened | ○ | ○ |
| Yes - many times due to prolonged fire threat | ○ | ○ |
| It varied | ○ | ○ |
| No | ○ | ○ |

### 73. Why did you/they decide to stay ?

| | First Time | Second Time | Subsequent Times |
|---|---|---|---|
| Decided it was safer | ○ | ○ | ○ |
| Left it too late and could not leave | ○ | ○ | ○ |
| Had no transport | ○ | ○ | ○ |
| Had left before (during this fire) and didnt want to do so again | ○ | ○ | ○ |

Other (please specify)

[                    ]

### 74. Did some of those who stayed actively try to protect the house /property?

○ Yes

○ No

○ Dont Know/Unsure

## 75. If yes how long did you/they actively try to protect the property ?

○ Less than an hour

○ A few hours

○ All or part of a day

○ More than a day

Other (please specify)

[                                                                          ]

## 76. What did you/they do to protect the house/property?

☐ Preventive wetting down of objects

☐ Moving flammable material

☐ Putting out spot fires in vegetation around the home

☐ Putting out embers igniting the house

☐ Putting out embers igniting other buildings

☐ Protecting the house from direct flames or radiant heat

☐ Protecting the other buildings from direct flames or radiant heat

Other (please specify)

[                                        ]

## 77. What equipment did you/they use/wear?

☐ Garden sprinkler

☐ Mops and buckets

☐ Water from pool/spa/dam/tank

☐ Mobile water supply eg tank on trailer or ute

☐ Firefighing hose/nozzle/tank

☐ Tractor (to clear ground)

☐ Garden hose

☐ Firefighting water pump

☐ Bushfire Sprinkler system

☐ Ladders

☐ Garden tools (such as rakes and shovels)

☐ Protective clothing

☐ Goggles

☐ Helmet

☐ Boots

☐ Dust mask

☐ Long sleeved shirt and pant from low combustible material

☐ Woollen blanket

Other (please specify)

[                                        ]

**78. Did any member of the household who stayed seek shelter in the house or other place on the property when the fire directly threatened your home/property?**

○ Yes

○ No

○ Dont Know

## 79. Where did you/they seek shelter?

☐ Living room

☐ Bedroom

☐ Kitchen

☐ Laundry

☐ Study

☐ Bathroom

☐ Hallway

☐ Garage

☐ Bushfire bunker

☐ Vehicle

☐ Shed

☐ In an open area

☐ Pool

☐ Water tank

Other (please specify)

# South Australia 2014 Fires Survey

## Property Loss or Damage

We know want to ask a few more questions about damage to your home /property which was a result of the January/February bushfires

### 80. Was there any damage to your home or property and/or did you lose and pets or livestock as a result of the January/February bushfires ?

○ Yes

○ No

### 81. Was there any damage to the following ?

|  | No damage | Minor damage | Moderate damage | Major damage | Destroyed | Not Applicable |
|---|---|---|---|---|---|---|
| House | ○ | ○ | ○ | ○ | ○ | ○ |
| Vehicle | ○ | ○ | ○ | ○ | ○ | ○ |
| Caravan/Motor-home | ○ | ○ | ○ | ○ | ○ | ○ |
| Water Tank | ○ | ○ | ○ | ○ | ○ | ○ |
| Pipes or hoses for fire fighting | ○ | ○ | ○ | ○ | ○ | ○ |
| Shed | ○ | ○ | ○ | ○ | ○ | ○ |
| Garage | ○ | ○ | ○ | ○ | ○ | ○ |
| Granny Flat | ○ | ○ | ○ | ○ | ○ | ○ |
| Other outbuildings | ○ | ○ | ○ | ○ | ○ | ○ |
| Fencing | ○ | ○ | ○ | ○ | ○ | ○ |
| Hothouse | ○ | ○ | ○ | ○ | ○ | ○ |

### 82. Please indicate if any pets or livestock you owned were injured or killed as a result of the January/February bushfires?

☐ Pets injured

☐ Pets killed

☐ Livestock injured

☐ Livestock killed

☐ Not applicable

## 83. Please indicate how many of each of the following types of pet were killed as a result of the January/February bushfires?

Dogs

Cats

Fish

Horses/Donkeys/Ponies

Birds (other than chickens)

Chickens

Ducks

Cattle

Sheep

Alpacas

Deer

Other

## 84. Please indicate how many of each of the following types of livestock were killed as a result of the January/February bushfires (this includes breeding animals)

Dogs

Cats

Fish

Horses/Donkeys/Ponies

Birds (other than chickens)

Chickens

Ducks

Cattle

Sheep

Alpacas

Deer

Other

## 85. Did you get help in actively protecting your home/property?

○ No

○ Family or friends (not from the household) came to assist

○ Fire fighters or other emergency services assisted

○ Local community assisted

○ Strangers assisted

○ Don't Know

# South Australia 2014 Fires Survey

## Warning and Information During the Fire

We now want to ask about the warnings and information that you recieved duing the fire events of January and February 2014. This will help the CFS improve their warnings and messages in the future.

### 86. Were you expecting a specific warning during these fire events?

○ Yes

○ No

If Yes, what sort of warning?

[                                                                    ]

### 87. Thinking about the official CFS warnings (e.g.text messages, information on websites, radio etc.) during this period?
### Do you think this information and the warnings were ....

|  | Yes | Neutral | No |
|---|---|---|---|
| Sufficient | ○ | ○ | ○ |
| Clear | ○ | ○ | ○ |
| Early enough | ○ | ○ | ○ |
| Alarmist | ○ | ○ | ○ |
| Sufficiently localised | ○ | ○ | ○ |
| Relevant | ○ | ○ | ○ |

**88. Did you ring the Bushfire Information Hotline (1300 362 661) with respect to the fires in your area?**

○ Yes

○ No

○ Cant recall

## 89. If yes : was the information provided by the Bushfire Information Hotline ...

|  | Not at all | A bit | Generally | Very |
|---|---|---|---|---|
| Useful | ○ | ○ | ○ | ○ |
| Up to date | ○ | ○ | ○ | ○ |
| Sufficiently local | ○ | ○ | ○ | ○ |

Other (please specify)

## 90. If yes : did you speak with a person (operator) or did you listen to prerecorded messages?

○ Person (Operator)

○ Recorded Messages

○ Combination (operator and recordings)

Other (please specify)

**91. Did you look for warnings or information though the CFS website?**

○ Yes                    ○ No                    ○ Cant Recall

## 92. If yes : was the information on the website

|  | Not at all | A bit | Generally | Very |
|---|---|---|---|---|
| Useful | ○ | ○ | ○ | ○ |
| Up to date | ○ | ○ | ○ | ○ |
| Sufficently local | ○ | ○ | ○ | ○ |

Other (please specify)

## 93. Did you look for information or warnings on other websites ?

○ Yes

○ No

○ Can't recall

If yes which ones were these

**94. Did you receive and official warnings on the land line telephone such as a recorded message from CFS as to what action to take with respect to fires in your area ?**

○ Yes                    ○ No                    ○ Cant Recall

## 95. If yes : was the information on the telephone message

|  | Not at all | A bit | Generally | Very |
|---|---|---|---|---|
| Useful | ○ | ○ | ○ | ○ |
| Timely | ○ | ○ | ○ | ○ |
| Provided at the right frequency | ○ | ○ | ○ | ○ |
| Sufficiently local | ○ | ○ | ○ | ○ |

Other (please specify)

**96. Did you recieve advice from the CFS via an SMS (text message) as to what action to take with respect to fires in your area?**

○ Yes                ○ No                ○ Cant Recall

## 97. If yes : was the warning on the on the SMS (text message)

|  | Not at all | A bit | Generally | Very |
|---|:---:|:---:|:---:|:---:|
| Useful | ○ | ○ | ○ | ○ |
| Timely | ○ | ○ | ○ | ○ |
| Provided at the right frequency | ○ | ○ | ○ | ○ |
| Sufficently local | ○ | ○ | ○ | ○ |

Other (please specify)

**98. Did you hear any advice on the radio as to what action to take with respect to fires in your area?**

○ Yes                    ○ No                    ○ Cant Recall

## 99. If yes : were the warnings or advice on the on the radio

|  | Not at all | A bit | Generally | Very |
|---|:---:|:---:|:---:|:---:|
| Useful | ○ | ○ | ○ | ○ |
| Timely | ○ | ○ | ○ | ○ |
| At the right frequency | ○ | ○ | ○ | ○ |
| Sufficiently local | ○ | ○ | ○ | ○ |

Other (please specify)

## 100. Which radio stations were you listening to for this advice?

☐ Local ABC

☐ Statewide ABC

☐ Other Local Radio

☐ Commercial Radio Stations

Please provide details

**101. Did you you use/follow social media (Facebook/Twitter) to stay up to date about the fires ?**

○ Yes                    ○ No                    ○ Cant Recall

**102. Did you upload information, comments or photographs relating to the fire/s up to social media during this period ?**

○ Yes                    ○ No                    ○ Cant Recall

**103. Which was the most reliable source of information about the fires on the social media?**

|  | Offical CFS | Local CFS Brigade | News Service | Family or Friends | Other Individuals |
|---|---|---|---|---|---|
| Facebook | ○ | ○ | ○ | ○ | ○ |
| Twitter | ○ | ○ | ○ | ○ | ○ |
| Other Social Media | ○ | ○ | ○ | ○ | ○ |

**104. Throughout the fires, which of the following do you feel provided the most reliable source of information for you ?**

○ Facebook

○ Twitter

○ Family or Friends

○ CFS Website

○ Local Radio

○ National Radio

○ Television

○ Local CFS Volunteers

○ Bushfire Information Hotline

Other (please specify)

[                                    ]

### 105. Did you attend any of the community meetings held in association with the Janaury/February Fire events

○ Yes

○ No - None in my area

○ No - Found out too late to attend

○ No - Did not know of any meetings

### 106. How did you find out about these meetings ?

☐ Facebook

☐ Twitter

☐ CFS Website

☐ Radio

☐ Television

☐ Word of Mouth

☐ Bushfire Information Hotline

☐ Did not know about meetings

Other (please specify)

[ ]

### 107. If you attended a meeting, did you think

|  | Not at all | A bit | Generally | Very much so |
|---|---|---|---|---|
| Holding the meeting was important | ○ | ○ | ○ | ○ |
| The information was useful | ○ | ○ | ○ | ○ |
| The information helped you to decide what to do | ○ | ○ | ○ | ○ |
| You were easily able to see and hear the speakers | ○ | ○ | ○ | ○ |

Do you have any other comments about the meetings

[ ]

**108. Please now add any other comments you wish to pass onto the CFS about the fires in January /February 2014**