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## COMMUNITY PREPAREDNESS, WARNINGS AND RESPONSES: NSW FIRES 2017

### ABOUT THIS PROJECT

This research was conducted for the New South Wales Rural Fire Service to help to understand community preparedness and responses to bushfires in NSW in 2017.

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### SUMMARY

In January and February 2017, New South Wales faced some of the worst bushfire conditions ever forecast for the state, including Catastrophic fire danger ratings for many communities. During this time, a number of large and damaging fires occurred.

Following this period of activity, the New South Wales Rural Fire Service (NSW RFS) commissioned the Bushfire and Natural Hazards CRC to conduct research into community preparedness and responses by affected communities.

The research involved interviews with people affected by the Currandooley, Sir Ivan and Carwoola fires, and an online survey of residents in bushfire risk areas throughout NSW.

Key findings centre around warnings, the behaviour of those under threat and public expectations of fire and emergency



▲ Above: FIREFIGHTERS AND LANDHOLDERS RESPONDING TO THE SIR IVAN FIRE. PHOTO: NICK MOIR, FAIRFAX MEDIA.

service agencies. The study found that people greatly value the Fires Near Me smartphone application and NSW RFS website for warning information, believing the information to be easy to understand, useful and sufficiently localised. However, there is a need to more clearly communicate that destructive fires occur at all fire danger conditions, not just at the Catastrophic level, as well as the limitations of directly attacking a fire front when conditions are too dangerous.

The research also confirms the tendency for people to wait and observe the fire directly before getting ready to defend themselves or confirm the need to leave, even after receiving a warning.

Based on the research, the NSW RFS has put new processes in place to better liaise with communities during major fire events, and is looking to further strengthen its approach to public information through websites, smartphone applications and face-to-face communication.

### CONTEXT

This research looks at the experiences and insights of communities impacted by three bushfires in January and February 2017. It also investigates the perceptions of fire risk and experiences through an online survey, including responses to Catastrophic fire danger warnings during this period. The research builds on previous post-bushfire research undertaken since 2009 in NSW, Victoria, Tasmania, South Australia and Western Australia.

### BACKGROUND

Following an intense period of hot and dry weather, NSW faced a period of significantly elevated fire danger during January and February 2017, peaking with large areas of the state's north experiencing Catastrophic fire danger in mid-February.

During this time, a number of significant bushfires occurred which impacted on communities. Fortunately, no human lives were lost during the worst of the conditions.

This research focused on three of these fires. The Currandooley fire, approximately 40km north west of Canberra, began on 17 January and ignited when a bird made contact with high voltage powerlines and landed in dry grass. The fire, which burned under Severe fire danger conditions, burned 3,378 hectares of land and destroyed a house, sheds, two vehicles, fences, pasture and an estimated 200 sheep and cattle. The Sir Ivan fire began on 11 February from lightning strikes near Leadville, approximately 250km

## END-USER STATEMENT

In January and February 2017, NSW was faced with its most dangerous fire conditions ever forecast. During this period, there was a significant threat to the community, and a number of large and destructive fires which impacted on homes, farms and businesses.

Despite the very worst of conditions, no human lives were lost as a direct result of these fires.

The events provide the NSW RFS with an opportunity to objectively review the community's response to this period of increased danger and fire activity, and assess how we can continue to improve on the concept of a shared responsibility when it comes to fire safety.

Large emergencies like this also present the NSW RFS with an opportunity to learn and improve.

Already, the NSW RFS has put new processes in place to better liaise with communities during major fire events, and is looking to further strengthen our approach to public information through websites, smartphone applications and face-to-face communication.

The NSW RFS is also pleased to contribute to the growing national collection of post-fire research, which is providing valuable guidance to the further refinement of community safety programs across the country.

**- Anthony Clark, Director Corporate Communications, NSW Rural Fire Service**

north west of Sydney. The fire, which burned under Catastrophic fire danger conditions, burned 55,372 hectares of land and destroyed 35 houses, 131 outbuildings, a church and a community hall. Agricultural assets including livestock, fences, pasture and machinery were also damaged and destroyed. The Carwoola fire began on 17 February from sparks caused by a metal cutting wheel, approximately 20km south east of Canberra. The fire, which burned under Severe fire danger conditions, burned 3,134 hectares of land and destroyed 11 houses and 45 outbuildings.

## BUSHFIRE AND NATURAL HAZARDS CRC RESEARCH

The research built on similar studies, including following fires in the Blue Mountains, Port Stephens, the Southern



▲ Above: RESEARCHERS AND NSW RFS PERSONNEL PREPARING FOR COMMUNITY INTERVIEWS AT CARWOOLA. PHOTO: NSW RFS.

Highlands, Coonabarabran, Yass and the Shoalhaven in 2013. It followed a qualitative and quantitative methodology and involved 113 interviews during June and July 2017 with people affected by the Currandooley (36 interviews), Sir Ivan (39) and Carwoola (38) fires. An online survey was also carried out in August and September 2017 of people (549 responses) threatened or affected by bushfires throughout NSW in 2017.

The interviews and surveys collected information about: the effectiveness of warnings; Catastrophic Fire Danger messages; information people sought out in relation to bushfires; the drivers and motivators for those who sought to enter fire grounds; perceptions of risk; how people value assets and prioritise their protection; the influences of previous fire history or experience on decisions and actions; public expectations of fire and emergency services; and opportunities for greater utilisation of local knowledge and participation.

This *Hazard Note* covers findings related to warnings, including understanding of Catastrophic Fire Danger, how information was accessed during the fires, perceptions of risk to homes and agricultural assets, motivations for entering fire grounds and public expectations of fire and emergency services. Full details of the research are available in the report *Community preparedness and responses to the 2017 NSW bushfires* (Whittaker J and Taylor M, 2018).

## RESEARCH FINDINGS

### Information and warnings

A majority of survey respondents found warnings easy to understand, up-to-date and

useful. Survey respondents and interview participants expressed a preference for highly localised information.

Survey respondents most often identified the Fires Near Me smartphone application and website as their most useful information source. Fires Near Me was seen as easy to understand (88%), useful (82%) and sufficiently localised (76%). Two-thirds (66%) felt the information was up-to-date. Interviewees commonly expressed strong support and a high degree of satisfaction with Fires Near Me.

Compared to SMS warnings, landline telephone warnings were more often seen as useful (78% versus 67%), up to date (72% versus 66%) and timely (68% versus 66%). Nevertheless, survey respondents most often identified SMS as their preferred mode for delivery of warnings. Most people expected to receive warnings from multiple sources.

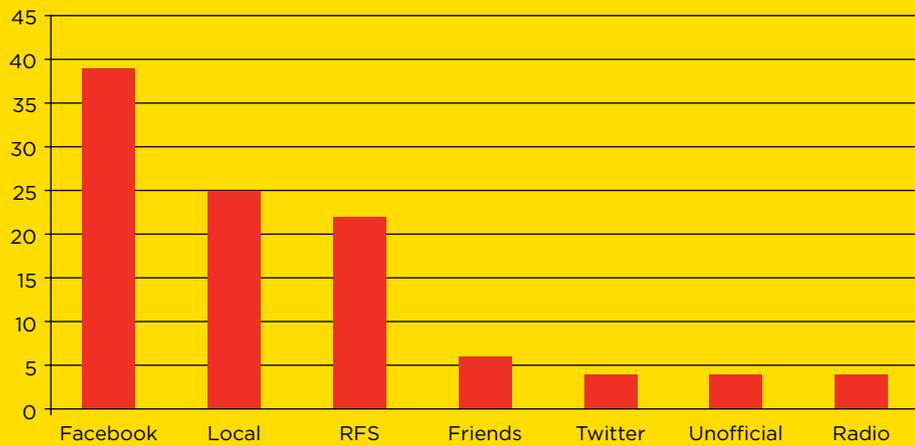
Limited mobile phone coverage, particularly in the Sir Ivan and Currandooley fires, meant that some people did not receive SMS warnings.

### Catastrophic Fire Danger warnings

After the 2009 Black Saturday fires in Victoria, the fire danger warnings were revised nationally and Catastrophic was introduced as the highest level of fire danger. These conditions do not occur regularly - this was only the second time large population centres in NSW had been subject to Catastrophic Fire Danger ratings since their introduction.

Survey respondents considered Catastrophic Fire Danger warnings to be easy to understand (88%), timely (83%) and

### Words and phrases used by respondents (%) when describing most useful social media source (n=143)



useful (78%). However, most people do not intend to leave before there is a fire on days of Catastrophic Fire Danger. Those who intend to leave will wait until there is a fire, and others intend to stay and defend. The research also shows that some people may underestimate the risks to life and property if the fire danger is not Catastrophic.

Receipt of an official warning about Catastrophic Fire Danger prompted survey respondents to discuss the threat with family, friends or neighbours (63%) and look for information about bushfires in their area (62%). Equal proportions began preparing to defend (39%) or leave (39%) and a smaller proportion (12%) left for a place of safety.

When asked what they would do next time they received a message about Catastrophic Fire Danger, 12% of survey respondents said they would leave before there is a fire and 24% said they would wait until a fire started, then leave. 27% reported that they would get ready to stay and defend, while 24% said they would wait for a fire before deciding what to do.

Analysis of interview data highlights that many people believe it is impractical to leave on days of Catastrophic Fire Danger before there is a fire. Many are also committed to defending, despite being aware of the increased risks to life on such days.

Interviews with people affected by the Carwoola and Currandooley fires suggests that some people underappreciate the risks to life and property on days that are not Catastrophic. In contrast, some interviewees affected by the Sir Ivan fire did not anticipate the size or severity of the fire, despite forewarning of the Catastrophic Fire Danger they would experience. Many felt that they were prepared to respond to smaller fires, which were more common in the area, but

believed there was little they could have done to prepare for a fire of the size and severity that was experienced.

#### How people accessed information

Half of all survey respondents accessed information via the internet (53%). They most commonly sought information about the location of the fire (91%), traffic and road blocks (64%) and weather conditions (60%). Around half looked for information about firefighting activities (54%) and the likely time of impact (43%). Websites most commonly used included Fires Near Me (in addition to the app), the NSW RFS, Bureau of Meteorology and various Facebook pages (including local RFS and community pages). Almost two-thirds (62%) of all survey respondents used social media during the fires.

Interviewees and survey respondents often sought information about the fire through direct observation. Consistent with findings from past research, many residents left their homes and properties to go and look at the fire. For some people, observing the fire appears to have helped ready themselves to defend and, for others, confirmed the need to leave.

#### Perception of risk to and value of agricultural assets versus homes

Perceptions of value and risk to agricultural and domestic assets are complex. Economic value is important in decisions about what to protect, but is balanced against utility and sentimental values.

Many farm properties were large, with a wide distribution of assets. Some landholders also had additional blocks that came under threat. They often did what they could to prepare, for example by ploughing fire breaks and moving livestock, then 'fell back'

### WHAT WAS SAID

*'The Fires Near Me app was very good actually because I could see exactly where the fire was going and the local area and all that sort of stuff. That was good because I could see that it got out of hand, and it had jumped the highway and that's when I knew it was gone.'*

- Cassilis

*'That day wasn't even really high on my radar in terms of fire danger. It was a hot day, and there was a bit of wind, but it wasn't Catastrophic. It wasn't like two or three weekends prior to that when it was 45 degrees and blowing a gale. It just proves that accidents can create a big fire.'*

- Carwoola

*'When we came out here we knew that we had a responsibility to manage our fire risk and we did what we could to reduce the fuel load and have a good plan in place to save ourselves ... We've sometimes found it a bit daunting about how we do all of that ... We did not expect that council or the RFS would come in and save us. We believed that it was our responsibility to be aware of the risk and manage it.'*

- Carwoola

to protect what was manageable, typically the house and nearby paddocks and sheds. This appears to have been based on an assessment of what was possible with available resources and not necessarily what was valued most.

#### Drivers and motivators for returning

The majority of survey respondents were at home when they found out about the bushfire (60%). Of those who were not at home, 71% indicated that they tried to return to their house or property.

The drivers for returning to fire-affected areas are many, but most often revolve around the desire to protect houses and property, rescue or assist vulnerable people, and protect animals.

While some interviewees complied with roadblocks, others described passing through or circumventing roadblocks in order to return. Some interviewees used backroads or gates through private property to return, sometimes on foot or in vehicles that were unsuitable for the roads, tracks

and paddocks that were used. There was a perception that some people were exposed to more danger than if they had passed through the roadblock.

### Public expectations of fire services

It is generally well understood that there are resource constraints during major fires (e.g. “there are not enough fire trucks for every property”). However, there is less appreciation of the operational constraints of large and dangerous fires, and that often it can be too dangerous for firefighters to directly attack the fire front.

Most interviewees affected by the Currandooley and Carwoola fires praised the efforts of firefighters and did not expect to receive personal firefighting support. Residents in Carwoola were particularly cognisant of the limits of support from fire agencies, a message that had been clearly communicated by the local brigade over time.

Some interviewees affected by the Sir Ivan fire were more critical of the firefighting response. Criticisms were varied but centred on the perceived lack of firefighting in the agricultural lands between Leadville and Cassilis. Some saw the fire service as overly bureaucratic and risk averse. These criticisms reflect a mismatch in expectations and should be viewed in the context of a large, destructive bushfire that burnt under Catastrophic conditions, where there was limited operational capacity or opportunity to deal with such fires due to dangerous conditions.

## CONCLUSION

The research confirms the tendency for people to wait and observe the fire directly before getting ready to defend themselves or confirm the need to leave. This behaviour presents opportunities for emergency service personnel to meet people at a time when they are seeking and receptive to information and advice.

While there is strong appreciation for the danger of fires under Catastrophic conditions, there is a need to more clearly communicate the risks posed by fires burning under non-



▲ Above: BURNT LAND SURROUNDS A HOUSE THAT SURVIVED A NSW FIRE. PHOTO: NSW RFS

## FURTHER READING

McLennan J, Mackie B, Wright L (2013), How three communities reacted to bushfire, Bushfire CRC *Fire Note* 119.

McLennan J (2014), Study captures insights on bushfire risk and response, Bushfire CRC *Fire Note* 131.

McLennan J (2015), Capturing community bushfire readiness: Post-bushfire interview studies 2009-2014, Bushfire and Natural Hazards CRC *Hazard Note* 4.

Whittaker J and Taylor M (2018), Community preparedness and responses to the 2017 NSW bushfires, Bushfire and Natural Hazards CRC.

Catastrophic conditions. Such messages could be incorporated into community education and engagement resources, as well as emergency warnings and information. There is potential to develop additional resources to assist agricultural landholders to plan and prepare for bushfire. Resources are needed to help businesses more systematically identify assets and values, prioritise, and plan for their protection. These materials could include best practice case studies and information about insurance.

There is a need to more clearly communicate the limits to response capacity. In addition to limitations due to resource constraints, which are generally well-understood by the public, there is potential for enhanced communication about the dangers large and fast-moving fires pose to firefighters and that it can be too dangerous for direct attack on the fire front. Findings suggest that local brigades could be effective in communicating these messages; however, this may require considerable engagement and training.

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*Hazard Notes* are prepared from available research at the time of publication to encourage discussion and debate. The contents of *Hazard Notes* do not necessarily represent the views, policies, practises or positions of any of the individual agencies or organisations who are stakeholders of the Bushfire and Natural Hazards CRC.

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