

# FIRE NOTE

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## RESIDENTS INTENTIONS AND REASONS IN THE FACE OF BUSHFIRE



▲ This research investigated why residents choose to stay and defend, leave or wait and see when threatened by a bushfire. Photo: NSW Rural Fire Service

### SUMMARY

Relatively little research has been published about what drives residents' initial decisions to leave, to stay, or to wait and see how a bushfire threat develops. Findings from the present study indicate that safety (family and individual) is the main driver for those who leave. Residents who stay and defend their property do so to protect their valued assets. Residents who wait and see do so because they fear making the wrong decision. Very few residents who stated they would either leave or wait and see indicated that they would leave early based on the predicted fire danger. Different psychological processes of individuals are responsible for these choices.

### ABOUT THIS PROJECT

This *Fire Note* summarises the final research outcomes from the *Human behaviour under stress – 2* project, within the Bushfire CRC *Communicating risk* program.

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### CONTEXT

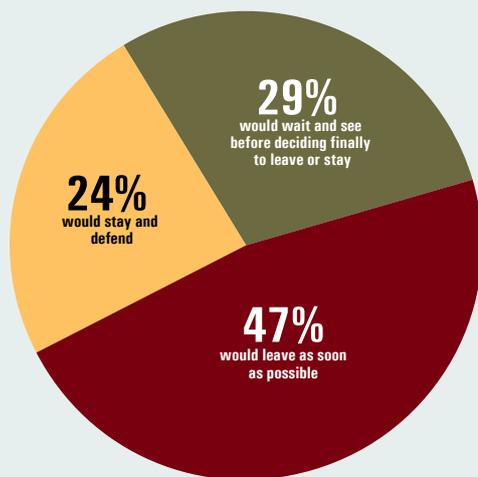
This project aimed to enhance the understanding of the reasons why residents might choose to leave, to stay and defend, or to wait and see what develops upon receiving a warning of a bushfire threat.

The research was intended to inform agency policies and practices on evacuating, sheltering, and defending in the face of bushfires and other hazards – both natural and human-related.

### BACKGROUND

Evidence presented to the 2009 Victorian Bushfires Royal Commission suggested that a significant number of casualties may have been averted if residents had made (and acted upon) decisions more appropriate to their situation. McLennan *et al.* (2011, 2012) found

## THE THREE CHOICES: LEAVE, STAY AND DEFEND, OR WAIT AND SEE



Participants in this study outlined what action they would take and why.

- Those who choose the 'leave' option indicated they were motivated mostly by anxiety about safety.
- Those who choose the 'stay and defend' option specified they were motivated by a desire to protect their home and other assets.
- Those who chose the 'wait and see' option said they were motivated by a concern not to make the wrong decision. They did not want to leave unnecessarily, but also did not want to face danger from a serious bushfire threat.

that a principal driver of residents' actions under threat of a fire was what they intended to do beforehand.

While considerable research has investigated community members' (a) intentions concerning mitigation of future bushfire threat (e.g., Paton *et al.* 2006); and (b) intentions and actions in the face of actual bushfire threat (e.g., McLennan *et al.* 2011, 2012), to date little research has focused on the reasons why residents form their intentions about what they will do in the face of an imminent bushfire threat: why they intend to either leave, stay and defend or wait and see.

### BUSHFIRE CRC RESEARCH

Beatson and McLennan (2010) proposed using social science-based theories to guide community bushfire safety research. The study used Theory of Planned Behaviour and Protection Motivation Theory to guide construction of a survey questionnaire about likely determinants of residents' bushfire survival intentions should a bushfire threaten them.

The study involved inviting residents of at risk locations identified by fire agency

### SURVEY LOCATIONS

**ACT:** Bonython, Duffy, Fisher, Hackett, Holder, Tharwa, Weston.

**NSW:** Captains Flat, Diggers Camp, Hornsby Heights, Kandos, Leura, Nelson Bay, Walla Walla.

**Tasmania:** Bothwell, Deloraine, Dover, Mount Nelson, New Norfolk, Ouse, Port Sorell/Shearwater.

**Victoria:** Beechworth, Delatite, Warrandyte, West Wodonga, Wonga Park, Yackandandah.

staff in the ACT, New South Wales, Tasmania and Victoria to participate in the research. Participants had the option of completing either an online survey or a paper questionnaire. Participants were asked to provide demographic information (including house location) and describe any previous training or experience with bushfires. They were then presented with the following scenario and asked to choose their likely response:

Now imagine that during the fire season you and all those who normally reside with you are at home. It has been declared a day of 'Extreme Fire Danger', and there is a Total Fire Ban for your region of the State/Territory. At about 3pm you become aware of a warning (on the radio, or a website, or by email, text message or telephone) that there is a large bushfire burning out of control and that it will probably hit your location in 1–2 hours. You look outside and see a large plume of smoke being blown toward your property.

What do you think you would most likely decide to do?

- Leave as soon as you can.
- Stay to defend the home.
- Wait and see what develops, before finally deciding whether or not to leave, or to stay and defend.

Of the 584 respondents:

- 47% said they would leave as soon as possible.
- 24% said they would stay and defend.
- 29% said they would wait and see before deciding finally to leave or stay.

## END USER STATEMENT

For many years, fire agencies have been encouraging people in bushfire prone areas to prepare for bushfire and decide if they will stay and defend their home when fire threatens, or leave early for a safe place. This simple, and simplistic, 'stay or go' contrast was easy for people to understand, and seemingly easy to make a decision about.

The reality, only recently understood, is not so simple. Many will wait and see what unfolds before making their decision. Deciding what to do is complicated, among other things, by people's perception about their risk (which can vary considerably depending on the fire danger rating), their capacity, the time available to implement a plan once they are aware of the fire, and their attachment to their home and surroundings.

Understanding these complications, and thanks to this research, the key reasons why people respond differently in the face of danger and therefore how they can be influenced, will enable fire agencies to develop more targeted, meaningful and effective messages than in the past.

Applying this knowledge should mean ultimately that fewer people threatened by a bushfire are likely to make decisions that will put them in danger. This research will help save lives.

– Damien Killalea, Director Community Fire Safety, Tasmania Fire Service.

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Respondents then answered questions related to their commitment to their stated intention, and indicated their reasons for having made this decision. Each of the reason-statements described a component of Theory of Planned Behaviour or Protection Motivation Theory. Respondents were asked to indicate their degree of agreement or disagreement with the statement. They were also invited to write their reasons for rejecting other alternatives. They were asked to indicate the extent of their planning and preparation to respond to a

## REASONS (N = 157) GIVEN BY HOUSEHOLDERS INTENDING TO ‘WAIT AND SEE’ RATHER THAN CHOOSING THE ‘LEAVE AS SOON AS POSSIBLE’ OPTION

REASON CATEGORY	%	REASON EXAMPLE
(a) Perceived low level of risk in waiting	45%	<ul style="list-style-type: none"> <li>• Because I do not feel our home will ever be under threat.</li> <li>• Feel our property is defensible.</li> <li>• There are numerous safe routes available.</li> <li>• Unless it is windy, the fire will be far enough away to see.</li> </ul>
(b) Reluctance to leave because of potential costs and dangers	34%	<ul style="list-style-type: none"> <li>• I would hate my house to be destroyed by a small fire I could have put out easily.</li> <li>• Potential for roads to be cut or involved with fire.</li> <li>• Because packing and unpacking is time-consuming and potentially damaging to my goods.</li> </ul>
(c) Self-reliant confidence of survival	12%	<ul style="list-style-type: none"> <li>• As a trained firefighter, I believe I have the skills and ability to defend my property.</li> <li>• The property is well equipped for firefighting.</li> </ul>
(d) ‘Others’ responsible will warn or protect	7%	<ul style="list-style-type: none"> <li>• Instructed to stay until given the order to evacuate by authorities.</li> <li>• Street is well trained and equipped through the (Community Fireguard) system.</li> </ul>
(e) Depend on others for transport	2%	<ul style="list-style-type: none"> <li>• No transport, too much stuff to carry on my own.</li> </ul>

## REASONS (N = 99) GIVEN BY HOUSEHOLDERS INTENDING TO ‘WAIT AND SEE’ RATHER THAN CHOOSING THE ‘STAY AND DEFEND’ OPTION

REASON CATEGORY	%	REASON EXAMPLE
(a) Potential danger to self or others	58%	A property can be rebuilt, a human life can't.
(b) Staying and defending successfully depends on the severity of the fire threat	21%	If it was a really big fast fire, I would not be confident I could defend against it.
(c) Age, infirmity, disability	12%	Physically not up to it.
(d) Reliance on agencies for advice about the danger posed by the fire	7%	I would not stay if authorities told me I should leave.
(e) The house is rented	2%	It's a rental property and it is not worth me risking harm to myself for someone else's property, and my possessions are not worth much.

bushfire by completing a checklist of bushfire survival preparation actions. The checklist is described in McLennan and Elliott (2011).

### RESEARCH OUTCOMES

Findings indicated that different psychological processes apparently determined the strength of each intention. For residents intending to leave as soon as possible, the predictors of strength of intention were associated with safety. For householders intending to stay and defend, the predictors were associated with the perceived likelihood of achieving a successful defence. For those residents intending to wait and see, the predictors were associated with making the best choice between two unpleasant alternatives – what social scientists call ‘avoidance-avoidance’ conflict.

Reasons given by residents for rejecting alternative choices were consistent with the above interpretations of the analyses of predictors of strengths of intentions. Most of those who intended to leave when threatened saw this as the safest option: staying and defending was seen as being too risky. Most of those who intended to stay and defend did not want to leave because they were committed to saving their property. Most of those who intended to wait and see did not perceive the risks associated with this choice to be great. They did not want to leave unnecessarily and risk losing the house when they could have saved it had they stayed, or on the other hand be exposed to unnecessary danger when leaving.

A little more than a third (38%) of all residents reported having prepared a

household plan for what to do if threatened by a bushfire. For those intending to leave, the figure was 39%; for those intending to stay and defend, 56%; and for those intending to wait and see, 24%. Very few (2%) residents who stated they would either leave or wait and see indicated that they would leave early based on the predicted fire danger.

Residents intending to stay and defend reported higher overall levels of preparing their property for a bushfire. Those intending to leave had, on average, undertaken no more preparation actions to leave safely than those intending to stay and defend or to wait and see.

More detailed findings from this research are described in McLennan *et al.* (2013), available on the [Bushfire CRC website](#).



▲ Different psychological processes of individuals are responsible for the choices residents make when threatened by fire.

Photo: CFA Strategic Communications

## HOW COULD THIS RESEARCH BE USED?

Most residents who intend to leave probably do not need general fear-arousing messages about how dangerous bushfires are. Given the apparent importance for many of anxiety about losing the house and about danger when leaving, messages that: (a) emphasise low-cost (money, time, effort, inconvenience) actions that mitigate the probability of their house being destroyed in their absence, plus messages that (b) emphasise how to plan and prepare for a safe evacuation may be more effective.

It seems unlikely that general messages that focus on bushfire survival will greatly influence residents' intent on staying and protecting their assets. What is probably needed is more effective ways of influencing these residents to undertake realistic risk assessments of their likelihood of success

under different fire danger conditions, and to engage in worst-case thinking in relation to their house, family and individual situation. This may allow identification of vulnerabilities in the house-householder-defence system.

Most residents intending to 'wait and see' do so primarily because they perceive their risk to be low. They view both leaving unnecessarily and staying in a dangerous situation as unacceptable. Continually receiving messages that say 'don't wait and see when a bushfire threatens' is unlikely to be effective in these situations. Perhaps a more achievable aim is to seek to convert them into 'intending to leave' based on certain conditions being met – e.g. 'Don't plan to wait and just hope for the best – decide what is your trigger to leave safely and prepare for this' (see McLennan and Elliott, 2013).

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