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**Edited by**  
**R.P. Thornton & L.J. Wright**

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## Welcome from Editors

It is our pleasure to bring to you the compiled papers from the Research Forum of the AFAC and Bushfire CRC Annual Conference, held in the Perth Exhibition and Convention Centre on the 28<sup>th</sup> of August 2012.

These papers were anonymously referred. We would like to express our gratitude to all the referees who agreed to take on this task diligently. We would also like to extend our gratitude to all those involved in the organising, and conducting of the Research Forum.

The range of papers spans many different disciplines, and really reflects the breadth of the work being undertaken, The Research Forum focuses on the delivery of research findings for emergency management personnel who need to use this knowledge for their daily work.

Not all papers presented are included in these proceedings as some authors opted to not supply full papers. However these proceedings cover the broad spectrum of work shared during this important event.

The full presentations from the Research Forum and the posters from the Bushfire CRC are available on the Bushfire CRC website [www.bushfirecrc.com](http://www.bushfirecrc.com).

**Richard Thornton and Lyndsey Wright**

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### **Disclaimer:**

The content of the papers are entirely the views of the authors and do not necessarily reflect the views of the Bushfire CRC or AFAC, their Boards or partners.

# 'Wait and See': The Elephant in the Community Bushfire Safety Room?

J. McLennan\* and G. Elliott

School of Psychological Science, La Trobe University, Bundoora, VIC 3086, Australia

\*Corresponding Author. Email [j.mclennan@latrobe.edu.au](mailto:j.mclennan@latrobe.edu.au)

## Abstract

Australian community bushfire safety policy identifies two safe courses of action for householders under bushfire threat: leave well in advance of possible fire impact, or stay and defend a suitably-prepared property. Findings from a survey of residents of at-risk communities in south-eastern Australia were that under (hypothetical) bushfire threat on a day of Extreme Fire Danger 30% intended to wait and see how a fire developed before committing to a bushfire survival action. Reported reasons for waiting to see included: perceptions that the risk associated with waiting is low; expectations that others will warn or protect in case of serious threat developing; efficacy beliefs about successfully defending against smaller fires; and reluctance to leave because of potential costs and dangers associated with leaving unnecessarily, and with driving during a bushfire. We conclude that householders who intend to wait and see: (a) understand that bushfires are dangerous; (b) believe that waiting and seeing what develops does not involve significant risk; and (c) view waiting and seeing as an appropriate response to an initial bushfire warning. We suggest some ways fire agencies could better address this reality--'wait and see' may not be considered a safe course of action by community safety policy makers and practitioners, but it is what many householders at risk of bushfire intend to do at present.

## Introduction

### *Background, outline and aim*

Investigations following multi-fatality bushfire disasters in 1967 and 1983 lead Australian fire authorities to conclude that householders (a) were most likely to be killed by radiant heat or vehicle accident while attempting to flee at the last moment; and (b) could successfully defend suitably-prepared houses against bushfires (Handmer and Tibbits 2005). These conclusions contributed to a general fire agency bushfire safety position that: "By extinguishing small initial ignitions, people of adequate mental, emotional, and physical fitness, equipped with appropriate skills, and basic resources, can save a building that would otherwise be lost in a fire...People should decide well in advance whether they will stay to defend or leave if a bushfire threatens" (Australasian Fire Authorities Council 2005, p. 6). This position came to be summarized as the 'prepare, stay and defend, or leave early' policy (Tibbits *et al.* 2008). Such a policy differs from that adopted in most North American fire jurisdictions, where evacuation of residents from threatened communities is generally the preferred strategy<sup>1</sup> (Paveglio *et al.* 2010).

Following disastrous bushfires in Victoria on 7 February 2009 (often described as the Black Saturday bushfires) the 'prepare, stay and defend or leave early' policy came under intense critical scrutiny (e. g., 2009 Victorian Bushfires Royal Commission, 2010). When the Australasian Fire and Emergency Services Authorities Council (AFAC) reviewed their community bushfire safety position following the 2009 bushfires, three issues identified in the aftermath of the fires appear to have been given considerable weight: (a) the generally low levels of householders' preparations for a bushfire; (b) the risks associated with failure to act decisively in the face of a bushfire threat warning; and (c) the dangers involved in defending a property under extreme fire danger weather conditions (Handmer *et al.* 2010; Whittaker *et al.* 2009; Whittaker *et al.* 2010). The revised AFAC (2010a) community bushfire safety position encapsulated these issues in a new safety summary statement *PREPARE. ACT. SURVIVE*:

*PREPARE: ...If you are going to leave...what will you do, where will you shelter, and how will you get there?...Prepare your house and property to survive the fire front...*

*ACT: ...Act decisively the moment you know there is a danger. Do not wait for an official warning. Do not just "wait and see".*

*SURVIVE: The safest place to be is away from the fire... (AFAC, 2010b)*

In this paper we focus on what seems to have emerged as a core component of "ACT": 'do not wait and see' in the face of a bushfire threat warning. We note that the phrase 'wait and see' does not appear in the AFAC (2010a) position paper "*Bushfires and community safety*". However, all fire services in the south eastern States and the Australian Capital Territory incorporate an injunction to 'do not wait and see' in their community bushfire information material. We review past evidence that many residents plan to, and do, 'wait and see' what

develops following a bushfire threat warning, in Australia and in the United States. We then describe findings from a 2012 survey of householders in south-eastern Australian communities deemed by authorities to be at-risk of bushfire attack. We focus on the 30% of respondents who reported that they intended to wait and see what developed if they received warning of a bushfire threat. We describe the reasons they gave for adopting this approach, and discuss possible implications of an apparent rejection of fire agencies' urgings to 'do not wait and see' by many householders. Our aim is to encourage discussion of the 'wait and see' issue among community bushfire safety policy makers and practitioners. We note the measured tone of discussion in the AFAC (2010a) position paper:

Fire agencies need to take into account that relatively few people in bushfire-prone areas make decisions or effective plans before bushfires threaten. When bushfires do threaten, many people don't make timely decisions about what they will do. Rather, they wait until the fire is close before making decisions. Safe options available to people who linger when fires are burning under 'severe', 'extreme' or 'catastrophic' fire danger ratings are often severely limited. Being away from the fire under these conditions is often the only safe option, yet travel over even very short distances is likely to be hazardous if the decision is made late. (p. 13)

We suggest that translating this nuanced summary of complex issues into a brusque "do not wait and see" directive might be simplistic and ineffective.

#### *'Wait and see' in the community bushfire safety research literature*

The earliest research-based reference to 'wait and see' we located was a paper by Rhodes (2007) which reported findings from five surveys of householders affected by fires in NSW, South Australia and Victoria over the period 2002-2007: "A significant minority in all studies (11-23%) intended to wait until told what to do, and 17-32% intended to wait but leave if they felt threatened" (p. 71). Tibbits and Whittaker (2007) described findings from focus groups of residents who had been threatened by a bushfire which burned an extensive area in north-eastern Victoria in 2003. While only 3% reported that they planned to 'wait and see' Tibbits and Whittaker concluded that "Many of those who decide to stay and defend are consciously or unconsciously retaining late evacuation as a last minute option...People who decide to leave early but wait for a trigger and those who decide to stay and defend unless they feel threatened are essentially planning a late evacuation, the most dangerous strategy" (p. 289).

Following the 2009 Victorian bushfires (Black Saturday) a Bushfire CRC Task Force conducted interviews with a cross-section of those affected. McLennan *et al.* (2011b) analysed transcripts of those interviewed and concluded that 6% had planned to wait and see what developed following a bushfire threat warning, and their data (pp. 15 & 27) suggested that approximately one-third waited to see how events unfolded following indications of a bushfire threat before committing to a final course of action to leave or to stay and defend. A subsequent postal survey of residents in locations affected by the Black Saturday bushfires found that 9% of respondents had intended to wait and see what a bushfire was like before deciding to stay and defend or leave, and a further 2% had intended to wait for police, fire and emergency services to tell them what to do (Whittaker *et al.* 2010).

Handmer *et al.* (2010) examined the circumstances associated with each of the 172 civilian fatalities resulting from the Black Saturday bushfires and concluded "... that many of the fatalities were 'waiting and seeing' before deciding what to do. From the evidence, it appears at least 26% of fatalities fall into this category, waiting for a trigger -- although it is rarely clear what this trigger might be -- before making a decision and taking action" (p. 23).

Whittaker and Handmer (2010) summarised findings from research conducted by CFA and the (Victorian) Office of the Emergency Services Commissioner following the 2009 Black Saturday bushfires and "...found that around one quarter of those who intend to leave would wait for advice from emergency services before leaving" (p. 10). McCaffrey and Winter (2011) reported that in a survey of residents of three United States communities threatened by a wildfire 16% had planned to evacuate but waited until they were told by authorities to leave; 30% waited to see what happened and stayed because the risk was not great; and 17% waited to see what happened but left when the danger felt too great (p. 92).

In 2011 two significant fire events occurred which destroyed homes in communities in the south-west of Western Australia: the Lake Clifton Fire (10 January 2011) and the Perth Hills fires (5 & 6 February 2011). Following each, field research teams interviewed members of affected households. McLennan *et al.* (2011a) reported findings from interviews with 40 Lake Clifton residents. While 5% said that their plan was to wait and see what developed, 58% left under imminent threat after waiting for some time to see if their homes were actually threatened. Heath *et al.* (2011) reported findings from interviews with residents of 372 households affected by the Kelmscott-Roleystone Fire and the Red Hill-Brigadoon Fire. Approximately 30% described their fire plan as "wait and see how bad it is, then decide" (p. 61) and approximately 25% reported that on learning of a possible bushfire threat they went back inside their house and waited to see what happened.

Taken together, these nine reports make clear that a significant percentage of residents of at-risk communities (a) plan to wait and see what happens on receipt of a bushfire threat warning, and (b) will wait and see what develops when such a threat warning is received (or perceived<sup>2</sup>). What remains unclear is why these residents plan and act in such a manner. The study described below was an attempt to address this question.

## Method

As part of a Bushfire CRC project<sup>3</sup> fire agency staff in the ACT, NSW, Tasmania and Victoria identified locations which they considered to be notably at-risk of bushfire in the immediate future. The locations identified included rural communities, communities around country towns, and bushland-urban interface suburbs<sup>4</sup>. A survey instrument was developed which could be completed either online (using the *Survey Manager* software tool) or as a paper questionnaire for return by reply-paid mail. Residents in the selected communities were invited to participate by news items in local newspapers and interviews on local radio, advertising posters in settings where residents congregated, and bulk mailouts of advertising leaflets to residential mail boxes. Householders were invited to complete the survey online

using a link, or to contact the researchers by phone or email to request a paper questionnaire and a replied-paid envelope.

A feature of the survey (in both formats) was presentation of the following bushfire threat scenario:

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 web site, or by email, or text, 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?

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

Responses of those who selected option c: "Wait and see what develops" were then analysed and the findings follow. (Responses of those who chose the other two options are not discussed here, but are described in McLennan and Elliott 2012, which also contains a copy of the survey questionnaire).

## Results

Of 554 respondents, 164 (30%) indicated that they would 'wait and see'. These householders comprised 84 (51%) men and 80 (49%) women. Their mean age was 57.4 years (SD = 13.2 years). Respondents were invited to describe in their own words why they had chosen the 'wait and see' option rather than to either leave as soon as possible or to stay and defend. Ninety-one householders provided a total of 99 reasons for choosing 'wait and see what develops'.

Category		Statement and # statement number
Perceived low level of risk: <b>52%</b>	Probability of fire impact low or uncertain	<i>Our home is in a relatively low-risk location surrounded by farmland and open country (#2)</i>
	Threat level low if fire impacted	<i>Although the bush is fairly close I think our house is unlikely to be affected (#3)</i>

	Safe last minute escape route	<i>Easy escape route to protected beach (#20)</i>
	Ample time for final decision	<i>The fire can only approach from the south and I have a clear view of this (#60a)</i>
'Others' responsible – will warn or protect: <b>19%</b>	Agencies	<i>Because I hope that the fire brigade is in my street and would keep me safe (#9)</i>
	Family/neighbours	<i>The neighbours will help fight the fire (#9)</i>
Self-reliant confidence of survival: <b>16%</b>	Self-efficacy	<i>I have had extensive experience in fighting bushfires (#33)</i>
	Preparation	<i>Feel prepared with generator, water tank and 10 years CFA experience (#22)</i>
Reluctance to leave because of potential costs and dangers: <b>13%</b>	Unnecessary house loss	<i>Most homes are destroyed because people departed (#57)</i>
	Danger in leaving	<i>There could be panic by others on roads (#81)</i>
	Concern about being unable to return	<i>Would need to attend livestock (#83)</i>

**Table 1: Reasons (n = 99) given by householders for choosing the 'wait and see' option in response to the bushfire warning threat scenario: categories and examples**

The 99 reasons were analysed and sorted into categories on the basis of content. Four categories were evident (Table 1): (a) Perception of low-risk involved in waiting (52%); (b) Belief that others would warn or protect them if danger threatened (19%); (c) Self-reliant confidence of ability to survive (16%); and (d) Reluctance to leave because of associated potential costs and risks (9%). Overall, the main driver of choosing to wait and see thus appeared to be belief that this is a safe choice in response to the initial warning information.

Respondents were invited to state in their own words why they had not chosen the 'stay and defend' option. Ninety-five householders provided a reason for not intending to stay and

defend their home. The reasons were analysed for content and were found to fall into one of five categories (Table 2): (a) Potential danger to self or others associated with staying and defending (58%); (b) Successful defence would depend on the actual severity of the fire threat (21%); (c) Age, infirmity, or disability of the respondent or other household members (12%); (d) Reliance on agencies for information about the danger posed by the fire (7%); (e) The house was rented (2%). The reasons indicate that most respondents understood bushfires to be very dangerous hazards, suggesting that choosing the 'wait and see' option was not due simply to lack of awareness of the potential threat posed by a bushfire.

Categories	Examples (# statement number)
Danger to self and others: <b>58%</b>	<i>A property can be rebuilt, a human life can't (#2)</i>  <i>Children are my priority (#17)</i>
Staying and defending depends on the severity of the bushfire threat: <b>21%</b>	<i>If it was a really big fast fire I would not be confident that I could defend against it (#58)</i>
Age, Infirmity, or disability: <b>12%</b>	<i>Physically not up to it (#76)</i>
Reliance on agencies for advice about the threat posed by the fire: <b>7%</b>	<i>I would not stay if authorities told me I should leave (#49)</i>
The house is rented: <b>2%</b>	<i>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 (#63)</i>

**Table 2: Reasons (n = 95) given for not committing to stay and defend: categories and examples**

Respondents were invited to describe their reasons for not intending to leave as soon as possible; and 136 respondents provided 150 reasons. These were analysed for content and categorised (Table 3). The content categories which emerged from the analysis process were almost the same as those resulting from the earlier analysis of reasons given for choosing the 'wait and see' option in response to the hypothetical bushfire threat scenario (Table 1). However, compared with Table 1, a higher percentage of householders reported reluctance to leave because of potential costs and dangers associated with leaving (34%) as

the reason they did not choose the 'leave as soon as possible' option. There were no indications of concerns about being unable to return as a reason for not leaving. There were, however, several references to the inconveniences involved in packing and leaving unnecessarily. (Several respondents commented that they had experienced this in the past).

Category		Examples (# statement number)
Perceived low level of risk: <b>45%</b>	Probability of fire impact low or uncertain	<i>Because I do not feel our home will ever be under threat (#16)</i>
	Threat level low if fire impacted	<i>Feel our property if defensible (#35)</i>
	Safe last-minute escape route	<i>There are numerous safe routes available (86b)</i>
	Ample time for a final decision	<i>Unless it is windy the fire will be far enough away to see (#123)</i>
Reluctance to leave because of potential costs and dangers: <b>34%</b>	Unnecessary house loss	<i>I would hate my house to be destroyed by a small fire I could have put out easily (#54)</i>
	Danger in leaving	<i>Potential for roads to be cut or involved with fire (#93)</i>
	Inconvenience	<i>Because packing and unpacking is time consuming and potentially damaging to my goods(#20)</i>
Self-reliant confidence of survival: <b>12%</b>	Self-efficacy	<i>As a trained firefighter I believe I have the skills and ability to defend my property (#8)</i>
	Preparation	<i>The property is well-equipped for firefighting (#107)</i>
'Others' responsible – will warn or protect: <b>7%</b>	Agencies	<i>Instructed to stay until given the order to evacuate by authorities (#63)</i>

	Family/neighbours	<i>Street is well trained and equipped through the (Community fireguard Unit) system (#98)</i>
Depend on others for transport: <b>2%</b>		<i>No transport, too much stuff to carry on my own (#82)</i>

**Table 3: Reasons (n = 150) given by householders for not choosing the 'leave as soon as possible' option in response to the bushfire warning threat scenario: categories and examples**

## Discussion

Before discussing possible implications of the findings it is important to note that the sample is unlikely to be truly representative of residents in the communities. Overall, the respondents are almost certainly more engaged with issues of bushfire threat and safety than many of their neighbours. This is because of the methodology employed in which, unlike a telephone or individually-addressed postal questionnaire survey, participating required motivation to actively 'opt-in' to the study by typing or pasting a link into an internet search engine, or telephoning or emailing the researchers to request a questionnaire.

Our reliance on householders' stated intentions may be criticised. We have no impregnable defence against an assertion that there is no reason to believe that householders will, in fact, do as they said they intended under actual bushfire threat. Whittaker and Handmer (2010), for example, argued that the gap between what residents say they will do on a day of extreme fire danger in relation to leaving early, and what they actually do represents a serious challenge to agencies. However, in our study we did not simply ask residents if they intended to leave early on a day of extreme fire danger. We presented a hypothetical bushfire threat scenario and asked which of three options (leave, stay and defend, or wait and see) the householder believed he or she would most likely choose to do under such circumstances. It is interesting that 30% chose the 'Wait and see' option given that community bushfire safety information provided to households by fire agencies tells residents bluntly **not** to wait and see. If these householders were merely reporting intentions that they believed were socially acceptable it seems unlikely that so many would confess such a roundly-condemned intention. There is evidence from the social psychology research literature that stated intentions are good predictors of behaviour provided that there are no situational incentives or social pressures to endorse a particular intention (e.g., Sheeran, 2003). In short, we suggest that while there will always be some uncertainty about the strength of the link between a given stated intention and a specific future action there is no reason to assume that there will be no link. Interviews with householders impacted by the 2009 Victorian bushfires indicated that the most important determinant of what a householder did under threat was his or her prior intentions or plans in the event of a bushfire (McLennan *et al.* 2011b).

Bearing in mind the above considerations, in summary, the present findings are consistent with those of previous studies which showed that significant percentages of residents of communities at-risk of bushfires plan to wait and see how events unfold in the event of a

bushfire warning, and will wait and see what develops following an actual bushfire threat warning. While the factors determining what a given individual plans and does following a bushfire warning are likely to be complex, our findings suggest that in broad terms most householders who plan to wait and see what develops following a bushfire warning:

- (a) understand bushfires to be dangerous hazards which can pose a threat to life (although most probably under estimate the danger, *cf* Handmer *et al*. 2010) and do not intend to stay and defend their home if they think a fire will pose a serious threat;
- (b) believe that waiting and seeing what happens does not involve a significant level of risk to their life; and,
- (c) thus view their intention to wait and see what develops following a potential bushfire threat warning as appropriate for their circumstances.

If (a) – (c) above is an accurate summary of a general situation in at-risk communities, then a fire agency injunction simply to 'do not wait and see' is unlikely to be very effective<sup>5</sup>.

We suggest looking afresh at 'wait and see' in relation to bushfire warnings from the vantage point of three years after the 2009 Victorian Black Saturday bushfires disaster. It is now known, with some confidence, that following a bushfire threat warning on all but a day of Code Red, or Catastrophic, fire danger: (i) a small percentage of residents in the threatened location will leave as soon as they can, because they perceive their personal risk from the fire to be high; (ii) a (probably) somewhat larger percentage will initiate final preparations to defend their property because this is what they have planned and prepared to do; while (iii) the majority will 'wait and see' what new information becomes available before committing to either leaving, or to staying and possibly defending their home--each option having its own perceived potential costs and risks. The question can surely be asked: is 'waiting and seeing' a poor choice? We suggest in answer: "not necessarily". To expect people to commit to an action involving potential life or death outcomes without knowing as much as they can about the situation is surely a 'big ask'!<sup>6</sup> From a common-sense perspective, waiting and seeing under many bushfire warning situations is probably prudent—the relevant issues are *what* is the householder waiting to 'see' and what does he or she intend to *do* once 'it' is 'seen'? To think in this way would allow 'wait and see' to be moved from its current status of being condemned by authorities but widely practiced by the public into the mainstream of bushfire household survival *planning*.

- **We propose that agency bushfire safety injunctions to 'do not wait and see' be replaced by 'do not wait and just hope for the best'.**

The available research shows that most householders who leave do so in response to a specific trigger event such as credible information that their property is very likely to come under attack, or the sight of smoke, embers or flames. This suggests that householders could be encouraged and assisted to identify trigger events appropriate to their bushfire risk circumstances and incorporate these explicitly into their household bushfire survival plans<sup>7</sup>.

Our findings suggest some additional approaches which fire agencies might consider as ways to address what we propose as the 'real' problem: householders delaying leaving until

such time as they feel forced to either (a) flee at the last minute into a hazardous bushfire environment, or (b) shelter (passively or actively) in house which is ill-prepared to survive bushfire attack. There is nothing new in what we suggest, we simply revisit ideas in the context of the preceding discussion of 'wait and see':

1. Continue to improve the accuracy, comprehensiveness, timeliness, and *location-specificity* of bushfire warnings to residents in threatened locations so as to (i) reduce householder uncertainty about their threat situation and (ii) encourage early survival decisions and actions. Future developments in communications technology can obviously contribute<sup>8</sup>.
2. Increase householders' knowledge and understanding of the risks involved in last-minute flight or last-ditch defence of an unprepared property. Instead of a cryptic 'do not wait and see' message, elaborate: "a plan to wait until you see how bad things are is a plan to either flee at the last moment and maybe die on the road, or to die in an unprepared house".
3. Reduce householders' reluctance to leave (a): assist them with advice about preparation to leave which is minimally inconvenient but sufficient to survive. Perhaps encourage planning for staged moves to successively safer locations during the course of a bushfire warning event as their known threat level increases.
4. Reduce householders' reluctance to leave (b): de-couple preparing their house to survive bushfire attack from necessarily having to be present to actively defend it: "The safest place to be during a bushfire is somewhere else, and here are things to do so that your house is more likely be standing when you return".
5. Reduce householders' reluctance to leave (c): following on from 4(b) above, concentrate on advising householders about low-cost, low-effort actions they can take to reduce house vulnerability to bushfire rather than high-end, costly measures.
6. Continue working to convince more householders that while they should be alert for bushfire warnings from authorities, they should not expect personalised advice that they are in danger and now is the time leave but instead decide on their own triggers to leave safely.

There is a tried and true human factors principle which practitioners in that field ignore at their peril: *It is better to put in place systems which match what people actually do, rather than put in place systems which rely on them doing as we wish they would* (Vicente 2003). This is no doubt true in relation to community bushfire safety.

## Notes

<sup>1</sup> While 'sheltering place' (SIP) is discussed as an option in some North American literature (e.g., Cova *et al.* 2009; Paveglio *et al.* 2010) it is not endorsed currently by Australasian fire agencies.

<sup>2</sup> Householders may become aware of bushfire threat in one or more of several ways: official agency warnings; news broadcasts; unofficial warnings or information from friends, family neighbours; or cues from the environment—smoke, embers, sounds, flames.

<sup>3</sup> Communicating Risk: Decision Making Under Stress (2). School of Psychological Science, La Trobe University. Research Leader: Jim McLennan. End-User Leader: Damien Killalea.

[http://www.bushfirecrc.com/sites/default/files/1009\\_researchlist\\_lowres.pdf](http://www.bushfirecrc.com/sites/default/files/1009_researchlist_lowres.pdf)

<sup>4</sup> The selected locations were:

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.

(Responses also came from other, adjacent, locations).

<sup>5</sup> However, we do not know if the directive has influenced householders to commit to a plan to leave early or stay and defend a suitably prepared property, rather than waiting and seeing.

<sup>6</sup> Recently, a best-selling author has argued persuasively, and on the basis of impressive science, that under many different real-life circumstances the wisest course of action is to 'wait and see', rather than act precipitately! See Partnoy F (2012) *Wait: the useful art of procrastination* (Profile Books: London).

<sup>7</sup> This in no way implies that agencies should retreat from their fundamental position that leaving early, before there is any possibility of danger from a bushfire, is always the safest option.

<sup>8</sup> Despite optimistic predictions (e.g., Palen, 2008) social media like *Twitter* and *Facebook* remain largely untested as crisis communications tools in the Australian bushfire context.

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