

# The effectiveness of current community/household bushfire safety programs in Victoria and the importance of maintaining funding for these programs

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Terms of reference being addressed in this submission:

1. The preparation and planning by government, emergency services agencies and the community ahead of the fire season, including management of public and private land and roadsides.
3. Funding, equipment and appliances for the Country Fire Authority (CFA), Fire Rescue Victoria and Forest Fire Management Victoria, and recruitment and retention of CFA volunteers.

# 1 INTRODUCTION

## 1.1 Author Details

1.1.1 Academic qualifications: BA (Hons, Psychology) University of Sydney 1971; MA (Psychology) ANU 1975; PhD (Applied cognitive psychology) Monash University 1990. Current appointment 2017–: Adjunct Professor, School of Psychology and Public Health, Latrobe University.

Previously: Senior Research Fellow, School of Psychological Science, La Trobe University 2004-2016.

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1.1.2 I write as one of Australia’s leading researchers in community and householder bushfire safety. I began work in this area immediately following the 2009 Victorian Black Saturday Bushfires as a member of the AFAC<sup>1</sup>/Bushfire CRC<sup>2</sup> Black Saturday Taskforce. I spent four weeks conducting interviews with survivors in those areas worst affected by the Kilmore East Fire (St Andrews, Strathewan, Kinglake, Kinglake West). In total, the Kilmore East fire resulted in 120 deaths and more than 1200 homes destroyed. The interview format was semi-structured and inquired about: bushfire risk perceptions and experiences prior to the Black Saturday fires, whether there was a household bushfire safety plan, what if any preparations had been made to protect/defend the property or to evacuate, what prior warnings of bushfire threat they were aware of, how did they become away of their fire danger on the day, what initial and subsequent actions they took in response to the threat, and how it all worked out. I was a member of the interview analysis team which prepared that part of the Bushfire CRC Final Report to the 2009 Victorian Bushfires Royal Commission about the overall findings from the interviews<sup>3</sup> and an author of the final report of findings from the Taskforce interviews to the Bushfire CRC<sup>4</sup>.

1.1.3 I subsequently conducted similar field interviews with householder survivors following 10 further disaster level bushfires 2011-2015 in NSW, SA, Tasmania, and WA, in the roles of Chief Investigator or Adviser, and was an author of the associated reports to the relevant fire agencies. These studies were commissioned by state fire agencies and conducted under the auspices of the Bushfire CRC and its successor the Bushfire and Natural Hazards CRC.

1.1.4 Over the period 2010-2022 I also carried out or supervised several studies focussing on particular aspects of community bushfire safety including: experiences of those taking last-resort bushfire survival shelter, determinants of householder intended actions in response to

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<sup>1</sup> Australasian Fire & Emergency Services Authorities Council.

<sup>2</sup> Cooperative Research Centre

<sup>3</sup> Bushfire CRC (2009) Victorian 2009 bushfires research response Final Report October 2009. [https://www.naturalhazards.com.au/crc-collection/downloads/victorian-2009-bushfire-research-response-report\\_-\\_overview.pdf](https://www.naturalhazards.com.au/crc-collection/downloads/victorian-2009-bushfire-research-response-report_-_overview.pdf)

<sup>4</sup> McLennan, J, Elliott, G, Omodei, M (2011). *Issues in community bushfire safety: analyses of interviews conducted by the 2009 Victorian bushfires research task force*. Bushfire Cooperative Research Centre and School of Psychological Science La Trobe University, Melbourne.

bushfire threat, denial of bushfire risk, determinants of householder bushfire safety preparatory actions, and householder bushfire risk perceptions and preparedness.

## 1.2 Bushfires as disasters

1.2.1 A disaster is a serious disruption of the functioning of a community or a society due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and adverse impacts<sup>5</sup>. Traditionally, disasters are categorised as being either technological (mostly human caused) or environmental/natural in origin. In turn, environmental disasters are classified as being either primarily geophysical (earthquakes/tsunamis, landslides, volcanic eruptions) or weather-related (cyclones, floods, bushfires<sup>6</sup>). A bushfire is an uncontrolled vegetation fire burning outside a primarily urban area. The destructive capacity of a bushfire results from the enormous amounts of heat energy released during the combustion process. The overwhelming majority of civilian deaths during bushfires result from one of two fatal injury processes, either (i) hypoxia (suffocation—lack of oxygen) due to destruction of airways tissue by inhalation of super-heated air, or (ii) hyperthermia (heat stroke) when core body temperature rises well above the normal ~37 degrees C to more than ~43 degrees C due to the impact of radiant heat on the person's body through clothing so that bodily functions essential for life (heart, breathing) cease. Death is typically rapid in both cases. A key feature of these two deadly processes is that they occur at a distance—actual flame contact is not necessary. A third cause of deaths during bushfires is traumatic injury resulting from motor vehicle accidents during late evacuation when visibility may be reduced due to smoke.

1.2.2 The amount and nature of loss/destruction/damage resulting from a bushfire depends primarily on three factors which operate jointly (i) the geographical location of the fire in relation to human settlement, (ii) the nature of the terrain and vegetation, and (iii) the prevailing weather conditions prior to and during the fire event. The intensity and thus the destructive capacity of the fire, in turn, is dependent on (a) the vegetation (fuel) amount and its moisture level, (b) the air temperature and relative humidity, and (c) the wind direction and (especially) speed. Most house losses due to bushfire result from wind driven embers igniting flammable material in, on, or immediately adjacent to the house structure.

## 1.3 Getting to January 2026

1.3.1 The current, or modern, era of bushfire *management* in Victoria began following the disastrous bushfire season of 1943/4 during which over one million hectares burned, more than 700 homes were destroyed, and 51 people lost their lives. In the aftermath the Victorian government of the day established the Country Fire Authority (CFA). This action made bushfire management a state responsibility rather than being merely a local responsibility as had been the case previously. There were disastrous fatal Victorian bushfires in 1952 (10 deaths), 1962 (33 deaths), 1965 (7 deaths), 1969 (23 deaths), and 1977 (8 deaths). The Ash

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<sup>5</sup> Australian Institute of Disaster Resilience Knowledge Hub

<sup>6</sup> Overseas, the term 'wildfires' is used most often. The two terms are synonymous for all practical purposes.

Wednesday bushfires of 16 February 1983 occurred in both Victoria and South Australia resulting in a total of 75 lives lost. In Victoria the fires caused the deaths of 30 civilians and 14 CFA volunteers. During this time period bushfire management policy in Victoria was essentially one of *response* to a bushfire event: contain and control a fire when and where it occurs.

1.3.2 In 1993 the Australian<sup>7</sup> Fire and Emergency Services Authorities Council (AFAC) was established as a national body to facilitate collaboration across fire, land management, and other emergency services in Australia (and now New Zealand). AFAC is the peak body for fire, land management, and emergency services in Australia and New Zealand, designed to create safer communities through national collaboration to combat environmental hazards in particular. Its aim is to foster consistency across fire, rescue and other emergency response agencies so as to enhance overall operational capability, resource sharing across jurisdictions, and promote relevant research. One of several research initiatives was to investigate the circumstances of civilian deaths in both the 1983 Ash Wednesday fires and the 7 February 1967 (Black Tuesday) Hobart fires (64 deaths). Examination of Coroners' reports led to a finding that the majority of civilian deaths were the result of late evacuations from homes under lethal fire conditions and that some residents had survived by actively defending their homes.

1.3.3 In 2005 AFAC published an official position about residents' safety under bushfire threat: "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 to fire"<sup>8</sup>. This position was interpreted by fire agencies to imply that residents should be encouraged to stay on their property in order to protect their suitably prepared homes against attack and was adopted by Australian fire agencies, summarized as the 'prepare, stay and defend or leave early' policy. However, the policy came under intense critical scrutiny during hearings conducted by the 2009 Victorian Bushfires Royal Commission following the country's worst bushfire event to date when disastrous bushfires impacted several parts of the State of Victoria on 7 February 2009 killing 172 civilians and destroying more than 2000 homes. Post-fire investigations found that the overwhelming number of deceased individuals perished in or very near their homes, or in the course of late evacuations<sup>9</sup>. AFAC subsequently reviewed and revised its position on community bushfire safety to state that early self-evacuation before the threat is imminent is the safest option for residents. In 2012 the AFAC position was revised further to give greater emphasis to evacuation as the preferred option in the event of bushfire threat:

4.2.8 The safest action to protect life is for people to be away from the bushfire or threat of bushfire as early as possible. *Leaving a high-risk bushfire location is the safest action, and leaving before a bushfire threatens is always safer than remaining until a bushfire starts. Leaving becomes increasingly appropriate with higher Fire*

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<sup>7</sup> Now Australasian

<sup>8</sup> Australian Fire Authorities Council (2005) Position paper on bushfires and community safety. AFAC, East Melbourne. p. 6 <http://royalcommission.vic.gov.au/getdoc/fe3ec0fe-04a0-4ee7-8ef0-29a245d0ad96/TEN.001.001.0077.pdf>

<sup>9</sup> Teague, B., McLeod, R., & Pascoe, S. (2010). *2009 Victorian Bushfires Royal Commission: Final Report*. Parliament of Victoria.

*Danger Ratings... where circumstances such as weather conditions, topography or fuel loads may create intense fire behaviour, leaving early may be the only safe action, even for people who are prepared to defend well-prepared buildings.<sup>10</sup>*

1.3.4 From 2012 up to the present time CFA, the major state land management agency (successively DSE, DEPI, DELWP, and now DEECA), and other agencies with bushfire safety responsibilities such as Emergency Management Victoria (EMV) have promoted on their websites, on social media and via traditional media advertisements that households in at risk locations need to have a bushfire survival plan to leave early and to prepare and act accordingly when aware of a possible bushfire threat.

## 2 SUBMISSION

*(1.) The preparation and planning by government, emergency services agencies and the community ahead of the fire season, including management of public and private land and roadsides.*

2.1 I write to draw the Committee's attention to a most important *positive* aspect<sup>11</sup> of the preparation and planning by government, emergency services agencies and the community ahead of the 2025/6 fire season which I fear may otherwise be overlooked among the many other issues which will no doubt be raised over the course of the Inquiry. Compared with previous disastrous bushfire events in Victoria's post-WW2 bushfire history, the fires of January 2026 resulted directly in a single civilian fatality—this death is, of course, a sad and regrettable event. It is perhaps tempting to attribute the low number of fatalities (compared with those resulting from previous destructive fires, see 1.3.1) solely to the fire suppression endeavours of bushfire responders' efforts on the fireground—notably by CFA volunteer brigades—and from the air. This would not be sound. The number of house losses (currently recorded as 338) attests to the severity of the 2026 fires. As noted in 1.3.2 and 1.3.3 the majority of deaths in bushfires have occurred in or near homes, or during late evacuation from homes. The following table reports house losses and civilian fatalities associated with the three Victorian bushfire disaster events following the development by AFAC of a position about community/household safety. The table presents houses losses and civilian deaths for the 2009, 2013/20, and 2026 fatal bushfires. In all three the number of houses destroyed was significant (though greatest for the 2009 fires). The 2019/20 and 2028 fires occurred in the context of community bushfire safety programs conducted by Victorian fire and emergency services agencies which emphasised the need for a household bushfire safety plan focussed on leaving the residence early and relocating to a place of safety. The figures in column 3 show

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<sup>10</sup> Australasian Fire and Emergency Services Authorities Council (2012) Bushfires and community safety: position; version 5.0. AFAC: East Melbourne, pp 5-6 (this document has now been archived by AFAC and a copy was not able to be obtained. The quotation is from a secondary source McLennan, J., Ryan, B., Bearman, C., & Toh, K. (2018). "Should we leave now?": Behavioral factors in wildfire evacuation. *Fire Technology*, 55(2), 487-516. doi: 10.1007/s10694-018-0753-8)

<sup>11</sup> The importance of post-disaster inquiries paying attention to positive aspects of a disaster event was argued cogently by Eburn, M., & Dovers, S. (2015). Learning lessons from disasters: Alternatives to Royal Commissions and other quasi-judicial inquiries. *Australian Journal of Public Administration*, 74(4), 495-508. <https://doi.org/10.1111/1467-8500.12115>

that following these latter two bushfire fire events civilian deaths were much less likely to be associated with house losses compared with the corresponding figure for the

2009 bushfires which occurred in the context of the older “prepare, stay and defend or leave early” advice to households residing in at-risk of bushfire locations.

<i>Victorian Fire</i>	<i>Civilian deaths</i>	<i>House losses</i>	<i>Deaths/house loss</i>	<i>Community bushfire safety policy</i>
Black Saturday 2009	172	2029	172/2029=.085	Prepare, stay and defend or leave early
Black Summer 2019/2020	5	420	5/420=.012	Have a bushfire survival plan, prepare, leave early
January 2026	1	338	1/338=.003	Have a bushfire survival plan, prepare, leave early

2.2 Of course, I concede readily that the totality of circumstances of the three bushfire disaster events is much more complex than implied by my simplistic analysis! However, I maintain that the evidence in the table supports the positive impact on saving residents’ lives of current community/household bushfire safety programs emphasising planning and preparing to leave early to a safer location in the event of a bushfire threat.

*(3). Funding, equipment and appliances for the Country Fire Authority (CFA), Fire Rescue Victoria and Forest Fire Management Victoria, and recruitment and retention of CFA volunteers*

2.3 The practical implication of the preceding material is the obvious need to at least maintain the present level of budgetary support for current community and household bushfire safety programs. While this should be self-evident, I expect that the Committee will be (figuratively) flooded with submissions pleading eloquently for higher levels of funding than at present and I predict that the overwhelming demand will be for more equipment: fire trucks, helicopters, fixed-wing water/retardant-dropping aircraft *etcetera*<sup>12</sup>. This would be perfectly reasonable if funding for these was unlimited. Of course, the reality will be much closer to a zero-sum situation: an increase in one component of the overall State bushfire management program budget will be at the expense of other components. Equipment is tangible and visible.

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<sup>12</sup> Equipment which is not fit for purpose or would put the health and safety of emergency service responders at risk obviously has to be replaced.

Community bushfire safety programs are neither. I urge the Committee members to be very clear-sighted in their assessments of equipment-focussed budgetary proposals, especially if any seem likely to be at the expense of current community bushfire safety programs. More and better bushfire suppression equipment would likely result in reduced financial, economic, infrastructure, environmental damage and house losses. This would be achieved by reducing the amount of area impacted by a bushfire event. **However, lives are saved by at-risk residents leaving threatened areas and relocating to safer locations in a timely manner. Community bushfire safety programs need to continue to be funded properly in order to achieve this most desirable end.**

For consideration.

Jim McLennan (PhD)  
13/03/2026

## Supporting Material

### Reports of interviews conducted following bushfire disaster events 2009-2014

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<https://search.informit.org/doi/10.3316/informit.980044093618470>
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- Koksal, K., McLennan, J., Every, D., & Bearman, C. (2018). Australian wildland-urban interface householders' wildfire safety preparations: 'everyday life' project priorities and perceptions of wildfire risk. *International Journal of Disaster Risk Reduction*, 33, 142-154. doi: 10.1016/j.ijdr.2018.09.017
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