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<b>Title</b>	Professor Emeritus
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<b>First name</b>	Gary
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<b>Last name</b>	Moore
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<b>I am making this submission as</b>	Resident
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<b>Submission type</b>	Personal
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<b>Organisation making the submission (if applicable)</b>	[select title]
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<b>Your position in the organisation (if applicable)</b>	[select title]
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<b>Consent to make submission public</b>	Public
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### Your story

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#### 1.1 Causes and contributing factors

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#### 1.2 Preparation and planning

Community-Based Bushfire Planning and Preparation & A New State Agency for All Emergency Management

Submission to the NSW Independent Bushfire Inquiry

Item 2: The preparation and planning by agencies, government, other entities and the community for bushfires in NSW, and Item 5: Preparation and planning for future bushfire threats and risks.

The 2009 Victorian Bushfires Royal Commission stated as part of Recommendation 1: "Ensure that local solutions are tailored and

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known to communities through local bushfire planning”.

Kangaroo Valley started working on community bushfire planning in September 2018 following a community meeting organised by the then Captain of the local Rural Fire Brigade. Our particular community of over 300 residents, Upper Kangaroo River, is especially vulnerable, having only one road in and one road out. In the Upper River, we quickly organised into nine bushfire ready neighbourhoods. Each neighbourhood has a coordinator, an emergency communications' plan, a map of properties, Static Water Sources (SWS) and, in some cases, tentative identification of Other Safer Locations, etc.

At all times during this process, the now RFS Community Engagement Officer was of great assistance, sometimes though, it appeared, without support from and perhaps even opposition from other members of the RFS. At several times, approaches were made to higher-level offices within RFS, with either no reply or not very helpful replies. Several colleagues and I delved into the Internet to see what we could find as to suggest how neighbourhoods could plan and prepare for the possible impacts of bushfire. We found very little of help on the internet, and virtually nothing on the NSW Rural Fire Services sites. A few interesting pieces were found on the Tasmania, Victoria and South Australia fire services websites, but still precious little.

As a result, we basically had to go it alone. A Sydney Morning Herald article was written about our efforts. See “How one valley's residents are taking fire plans into their own hands” at <https://www.smh.com.au/politics/nsw/how-one-valley-s-residents-are-taking-fire-plans-into-their-own-hands-20191129-p53fal.html>. See also “Shoalhaven's summer of fire” at <http://newbushtelegraph.org.au/?p=526> (a long article; scroll down to the section “Fire in the Valley” at about the ¾ point, where the point is made eloquently about how our neighbourhood planning and preparation lead to very positive outcomes).

Currently in NSW there is little or no organised community bushfire planning. As said in a related submission, “The RFS provides a very high-level Local Government Area Bush Fire Risk Management Plan (BFRMP) which makes little attempt to address local community needs. The RFS also provides Community Protection Plans (CPP) which are offered to a limited number of communities. Kangaroo Valley, in spite of its very high bushfire risk, was not included nor is it listed to have a CPP in the future.”

Where is the expert guidance for planning, preparation and mitigation for neighbourhoods and communities? There is heaps of guidance for preparing individual household Bushfire Survival Plans, but essentially nothing to help neighbourhoods and communities. For just one example, how do neighbourhoods identify suitable Other Safer Locations (OSL). OSLs are mentioned and recommended in NSW RFS documents, but no advice is given on how to identify them, nor how to have them expertly assessed as being suitable.

Recommendations: I urge the following:

1. That NSW makes use of volunteers to undertake community bushfire planning as it does with bushfire response and recovery, but as a separately recognised and distinct planning and preparation process.
2. That volunteers for community bushfire planning come from the community to which the plan relates.

3. That NSW Government give serious consideration to community-based planning, preparation and mitigation through a new government agency. That it be undertaken not by the RFS (which is devoted to and does an exceptional job at bushfire response) but by a state-wide emergency management agency, as is done in Victoria (see "Safer and more resilient communities: Working in conjunction with communities, government, agencies and business" at <https://www.emv.vic.gov.au/>).

4. That NSW Government and its various agencies and departments actively support and fund where necessary community groups to assist them in planning and preparing for bushfires.

Thank you for your consideration of this issue and these specific recommendations.

Professor Gary Moore  
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PO Box 6067  
Kangaroo Valley NSW 2577

5 April 2020

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**1.3 Response to  
bushfires**

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**1.4 Any other matters**

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**Upload files**

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**Consent to make submission public** Public

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**Your story**

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**1.1 Causes and contributing factors**

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## 1.2 Preparation and planning

### Landscaping to Reduce the Impact of Bushfires

#### Submission to the NSW Independent Bushfire Inquiry

Item 2: The preparation and planning by agencies, government, other entities and the community for bushfires in NSW, including ... standards and their applications and effect, and

Item 5: Preparation and planning for future bushfire threats and risks.

In NSW, information on how best to landscape and garden around buildings, especially residential buildings, to minimise the impact of bushfire is very limited. The NSW RFS Standards for Asset Protection Zones 2014 provides a small amount of relevant information on landscaping, but it is insufficient. Meanwhile, in Victoria, the Country Fire Authority (CFA), in response to recommendation 44 from the Victorian Bushfires Royal Commission, has published Landscaping for Bushfires 2011 (<https://www.cfa.vic.gov.au/plan-prepare/landscaping> and [https://www.cfa.vic.gov.au/documents/20143/72271/landscaping\\_for\\_bushfire.pdf/1c6084e1-159e-a820-b0b3-6dc077e661c0](https://www.cfa.vic.gov.au/documents/20143/72271/landscaping_for_bushfire.pdf/1c6084e1-159e-a820-b0b3-6dc077e661c0)). As CFA Victoria says, "The location, type and ongoing maintenance of vegetation within a property can significantly reduce the impact of a bushfire on any house." This document is very comprehensive.

The book, Essential Bushfire Safety Tips by Joan Webster OAM (CSIRO Publishing, rev ed, 2015), has excellent chapters on protective property layouts and protective gardens. She even makes the point, based on CSIRO research, that proper landscaping and garden design can minimise property damage, and, if done properly, can protect against bushfires. This information, though published by our Commonwealth scientific research agency, is not promulgated anywhere to be found in RFS or other NSW state documents.

There is evidence and expert opinion that the impacts of bushfires on buildings, especially residential buildings, can be mitigated by appropriate garden and landscaping design and selection of plantings and, furthermore, can be protected by proper design.

#### Recommendations

1. That NSW follows the lead of Victoria and promulgates detailed guidelines on landscaping and gardening for bushfire prone areas, and in particular:
  - a. Makes use of already existing evidence and guidelines published elsewhere (no need to reinvent the wheel), especially the CFA Landscaping for Bushfires 2011 and the CSIRO Essential Bushfire Safety Tips 2015.
  - b. Develops additional guidelines, through research and expert consultation with experts in the horticulture industry, universities and CSIRO, for any issues not covered by the two above sources.
  - c. Completes the task in preparation for the 2021-22 fire season, therefore, with publication before 1 September 2021.
  - d. Publishes the guidelines widely through emergency management, RFS and other media including appropriate social media.

Thank you for your consideration of this issue and these specific recommendations.

Professor Gary Moore  
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## 1.3 Response to bushfires

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**1.4 Any  
other  
matters**

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**Upload files**

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**Consent to make submission public** Public

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**Your story**

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**1.1 Causes and contributing factors**

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**1.2 Preparation and planning** Retrofitting Housing to Reduce the Impact of Future Bushfires

Submission to the NSW Independent Bushfire Inquiry

Item 2: The preparation and planning by agencies, government, other entities and the community for bushfires in NSW, including ... standards and their applications and effect, and

Item 5: Preparation and planning for future bushfire threats and risks.

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Immediately after the Currowan Fire, which severely impacted the South Coast all the way up to the southern end of Kangaroo Valley, colleagues and I looked for information on the Internet, including from NSW RFS websites, on how we might better prepare our homes for the next fire season - what might we do to retrofit them so they would be better protected from bushfire? I could not find anything on the NSW RFS websites, and still can't find anything from any NSW government agencies.

Meanwhile, detailed and useful information and guidelines can be found in some of our neighbouring states, especially Victoria. But this information, while available to the Internet research sleuth, is not promulgated or in any way disseminated in NSW.

The Victoria Building Authority (BVA) has an excellent 18-page report, with short and sharp bullet points - A Guide to Retrofit your Home for Better Protection from a Bushfire, see [https://www.cfa.vic.gov.au/documents/20143/98987/A-guide-to-Retrofit-Your-Home-for-Better-Protection-from-a-Bushfire\\_2014.pdf/83331e91-049b-7915-9458-ae1acfaa980d](https://www.cfa.vic.gov.au/documents/20143/98987/A-guide-to-Retrofit-Your-Home-for-Better-Protection-from-a-Bushfire_2014.pdf/83331e91-049b-7915-9458-ae1acfaa980d).

It details low-, medium- and high-cost recommendations for retrofitting up to and including BAL-29, with a few suggestions even for BAL-40 and Flame Zone. Topics include flooring systems, roofs, walls and fascia construction, windows including skylights, external doors, vents and weepholes, eaves, gutters and downpipes, etc. Also included are sections on home sprinkler systems, enclosed and unenclosed external structures connected to the house (carports, decks, verandas, pergolas, etc), as well as private bushfire shelters (bunkers). All excellent, well researched, clearly presented and with the authority of and distribution by the state building authority.

The book, Essential Bushfire Safety Tips by Joan Webster OAM (CSIRO Publishing, rev ed, 2015), has an excellent 22-page chapter on "A protective house design", with pithy dot points regarding new construction and retrofitting. Though published by the CSIRO, our internationally recognised national scientific research agency, this information is not promulgated or anywhere to be found in RFS or other NSW state documents.

Some specific information is available on the web about ember attack protection, sprinklers and drenching systems, and there is a lot of information on designing particular parts of houses (e.g. roof construction to BAL-40 and BAL-FZ standards) but, other than the Victorian BVA example, scant little on retrofitting already-built homes to better withstand the next bushfire event.

A few reports are coming out from government departments in Tasmania and Queensland, eg Protecting your Home against Bushfire Attack from the Queensland Government at [https://www.hpw.qld.gov.au/\\_\\_data/assets/pdf\\_file/0021/4782/protecting-home-against-bushfires.pdf](https://www.hpw.qld.gov.au/__data/assets/pdf_file/0021/4782/protecting-home-against-bushfires.pdf), Retrofit for Bushfires by Hardenup.org at <http://hardenup.org/prepare-yourself/practical-preparation-advice/property-and-assets/prepare-for-bushfires/retrofit-for-bushfires.aspx> and a few simple suggestions in Bushfire: Prepare to Survive by the Tasmania Fire Service at <http://www.fire.tas.gov.au/publications/BushfirePrepareToSurvive.pdf>. These were written and published in the period 2000-2009, ie, well in time for the recent unprecedented fire season.

But where is NSW government in this discussion? Our houses, therefore, were not only susceptible during the 2019-20 bushfires, but will remain so unless we take action and widely disseminate pertinent, practical information.

Some very interesting and powerful research has appeared over the past few years from the University of Wollongong's Centre for Environmental Risk Management of Bushfires and Sustainable Buildings



Research Centre, e.g., <https://www.uow.edu.au/media/2017/retrofitting-houses-in-bushfires-zones-could-save-lives-and-property-but-cost-is-prohibitive.php>. It would seem appropriate to involve such experts in organising broad retrofitting guidelines for NSW as a whole.

#### Recommendations

1. That NSW develops, compiles and promulgates detailed guidelines on retrofitting residential housing to reduce the impact of future bushfires and, in particular, does the following:
  - a. Makes use of already existing evidence and guidelines published elsewhere (no need to reinvent the wheel), especially the VBA Guide to Retrofit your Home for Better Protection from a Bushfire and other documents.
  - b. Develops additional guidelines through research and expert consultation with experts in the building industry and universities for any issues not covered by the above sources.
  - c. Completes the task before the 2021-22 fire season including publication before 1 September 2021.
  - d. Publishes the guidelines widely through emergency management, RFS and other media including appropriate social media.

Thank you for your consideration of this issue and these specific recommendations.

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