

Thoughts on the Victorian Bushfires

— response to Roger Underwood’s critique

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My thoughts on the 7 February Victorian bushfires attracted considerable feedback, most of it positive. Not unexpectedly, the essay on my website drew some flak from people opposed to some of my arguments. The most considered of the critiques was that of Roger Underwood, Chairman of The Bushfire Front Inc, and a former General Manager of the Western Australian Department of Conservation and Land Management (CALM).

Before responding to Mr Underwood’s critique in more detail, it is important to point out that we probably agree on 90 percent of matters concerning the causes of and responses to the Victorian bushfires, and their implications for future land management. However we disagree on a couple of fundamental points that are worth exploring in more depth.

In my view the unprecedented weather conditions on February 7, and consequently the unprecedented Fire Danger Index (328 on a scale of 0-100 according to counsel assisting the Royal Commission), are a harbinger of things to come, not an extreme outlier that we are unlikely to see again. On days with an FDI above 50, direct fire suppression is very difficult, and above 100 it is impossible, almost irrespective of fuel loads, as shown in the diagram below prepared by Phil Cheney¹, and published in *The People’s Review of Bushfires*.²

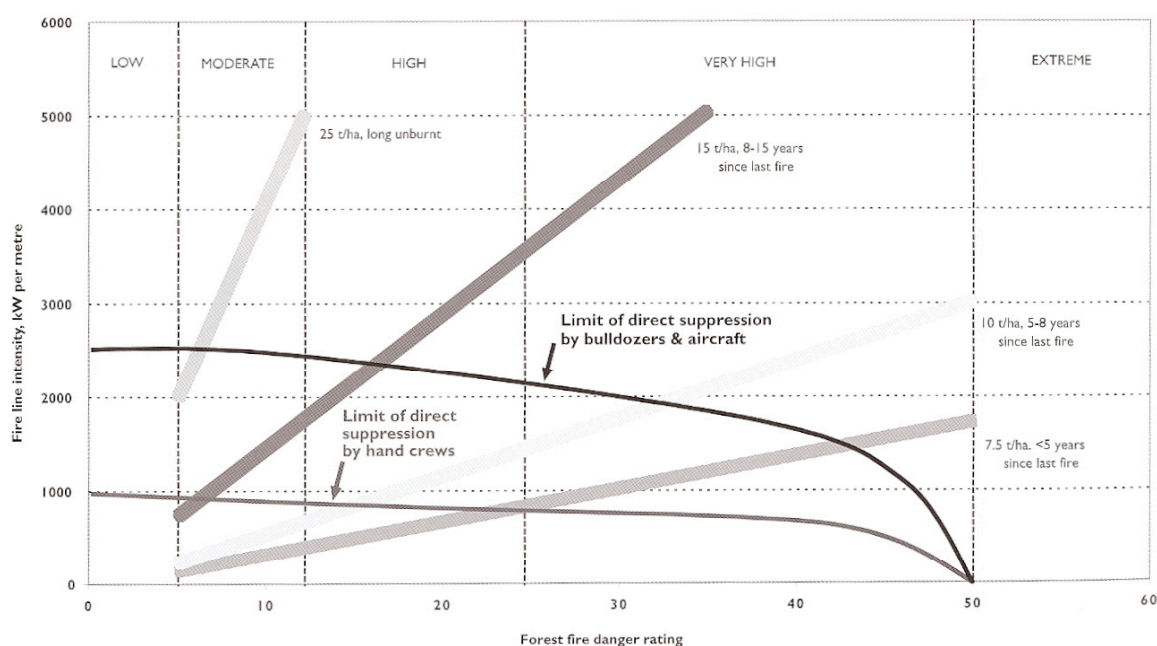


Figure 1. The relationship between fire intensity and Forest Fire Danger Rating for a range of fuel loads, and the limits of direct suppression of fire.

- ¹ Redrawn from a presentation by Phil Cheney to the “Bushfire Prevention: Are we doing enough?” Conference at the Institute of Public Affairs, Melbourne 11 March 2003.
- ² Attiwill, Peter, David Packham, Tim Barker and Ian Hamilton (2009) *The People’s Review of Bushfires, 2002-2007, in Victoria*. Final Report. The People’s Review, Richmond Victoria.

Broadscale fuel reduction burning in Victorian forests, even had it been carried out over 7-10% of the whole forest estate (it cannot be done in Mountain Ash forests in any case) every year, would not, in my opinion and all other things being equal, have made a substantial difference to the outcome on 7 February.

I agree with Mr Underwood (and stated in my essay), that *“done properly, strategic hazard reduction burns can reduce fire crowning behaviour and increase the probability of control under most conditions.”* I also agree that there should be greater emphasis on fire preparedness and prevention as opposed to ever more expensive suppression; and that fighting most fires would be easier if access tracks were maintained and kept open, and if there were sufficient well-trained and experienced personnel working in the bush.

The key point here is **most** fires. The fires that do most damage and lead to significant loss of life and property are the exceptional fires — the very big, very hot fires that occur if there is ignition (whether due to arson, lightning, power lines or whatever) on days with extreme (>50) or catastrophic (>100) Fire Danger Index readings. From Phil Cheney’s diagram above (and from evidence to the Royal Commission), it is clear that on days with an FDI exceeding 300, any form of firefighting in forested areas (fuel-reduced or otherwise) will not be effective and is certain to be life-threatening for those involved.

It is not as explicit in Roger Underwood’s critique, but I suspect we differ in our judgement about the likely frequency of days such as 7 February in future. The assessment of Prof David Karoly at the University of Melbourne that the temperature, relative humidity and drought index (but not wind speed) on 7 February were directly related to human-induced climate change; and that of CSIRO and the Bushfires CRC that catastrophic fire danger days are increasingly likely in future; are telling in my view. So for me, 7 February represents the start of a whole new ball game for bushfire management in southern Australia, in Victoria in particular. Just as we are having to jettison the notion of ‘exceptional circumstances’ in drought policy, we need to recalibrate our expectation of the frequency of extreme fire danger.

Roger Underwood contends that if we had learned the lessons from past major fires (e.g. 1939, 1967 and 1983) and implemented the findings of numerous reviews and inquiries, then that would have made a major difference even under the conditions prevailing on 7 February. I agree with this to a certain extent — particularly with respect to planning laws that have allowed people to build in high-risk areas; building codes and development approval processes that have allowed people to build poorly-designed dwellings; and restrictions on hazard removal close to settlements and dwellings. We agree that many people seemed woefully prepared, and that there is an urgent need for much better community education and training around bushfire preparedness.

But I do not agree that broadscale fuel reduction across the whole forest estate, absent much more difficult political decisions to tackle the questions about the nature of human settlements in forested areas, and of human behaviour in the face of risk, will be effective in reducing future loss of life and property under catastrophic fire danger conditions. Strategic hazard reduction is of course a crucial element of a portfolio of responses — a crucial tool in the toolkit. It is a necessary but insufficient condition for effective management of the risk of catastrophic fire events. I am concerned about the potential for the debate to focus on this point, at the expense of tackling tougher, broader questions about how we live in the Australian bush.

As stated in my essay: *“the reasons why these fires have been so destructive of life and property are multiple, interacting, complex and systemic – inevitably a recipe for media to simplify and take short-cuts to reach a convenient narrative (even better if it can be polarised into two opposing camps) that ends up being misleading and unhelpful.”*

My chief concern is that our response to these terrible fires should be commensurate with these multiple, interacting, complex and systemic drivers, and that it should not default to a polarised debate about whether to burn or not to burn.

Several of the emails I have received attacking my views have come from people who have clearly not read the essay on my website, but have read Roger Underwood's critique and have taken the inaccuracies and misrepresentations in that critique to be true.

Here are some of the key points where I feel the Underwood critique needs to be corrected.

Underwood:

Although I agree with many of the points made by Campbell, I have decided to respond to his paper because it articulates a serious flaw that, if supported, may lead to damaging policy decisions in Victoria (and perhaps elsewhere) in the future. Campbell opposes broad-acre fuel reduction burning in forest regions as part of an integrated bushfire management system.

Campbell:

This is at the core of the Underwood critique, but it is not true, as the earlier quote from my essay shows. I agree that strategic broad-acre fuel reduction burning in forest regions, as part of an integrated bushfire management system, is an important and valuable tool. But in my view its effectiveness is over-rated by Underwood and others under extreme and catastrophic fire danger conditions — conditions that are likely to occur more frequently in future with a warming, drying climate in southern Australia.

Underwood:

His claim that there is "not one mainstream environmental organisation in Australia that is opposed to prescribed burning" is in my view an extraordinary statement.

Campbell:

There are doubtless individual environmentalists strongly opposed to broadscale fuel reduction burning, but it is a fact that the big mainstream environmental organisations are not opposed to strategic burning. In response to my essay I received an email from John Thwaites, former Victorian Environment Minister noting "*It is interesting that as Minister for Environment I had the environment movement on my back about most things - but not fuel reduction burning.*"

Underwood:

Campbell is critical of the views of the bushfire managers and fire scientists who support fuel reduction burning, lumping them in with the general populace which he labels as "ecologically illiterate". This is a critical point because it attacks the credibility of people who have a great deal to offer policy-makers, especially in terms of mitigating bushfire damage. And later: While Campbell does not name these advocates or retired experts there is little doubt who he has in mind... This group includes research scientists Phil Cheney, George Peet, David Packham, and Lachlan McCaw; ecologists Peter Attiwill, Mark Adams, Per Christensen, Peter Stanton and Neil Burrows; silviculturalists like Vic Jurskis and Jack Bradshaw and bushfire operations specialists like Rick Sneeuwjagt, Rod Incoll, Barrie Dexter, Frank Campbell and Athol Hodgson.

Campbell:

This is crude verballing. My original essay was in response to a blog called "Will the Real Arsonists Please Stand Up?" by a Mr Rob Darrock, whom I do not know. I know, or know of, most of those people named by Mr Underwood above, and I respect their expertise and the sincerity of their views. To suggest that I regard them as "ecologically illiterate" is absurd. The use of quotation marks is deliberately misleading. Nowhere does that phrase appear in my essay, and certainly not in connection with even oblique references to experts, retired or otherwise. The

second introductory paragraph of my essay concluded: *The Victorian fires, and in particular some of the media since the fires, suggest that we have a long way to go in improving the ecological literacy of Australians and the body politic.* This is a clear reference to the wider community, not specific individuals, nor to advocates of prescribed burning, or environmentalists, or any other particular group.

[As an aside unrelated to Roger Underwood's allegations, I am profoundly disturbed by the way an adversarial legal system — in this case a Royal Commission — treats expert witnesses such as Ewan Waller, Bruce Esplin and Russell Rees. Cross-examination by eminent QCs as if in a criminal court seems to me to be a very imperfect way for society to learn the lessons that need to be learned. Moreover, it creates a powerful disincentive for talented, ambitious people to take on such roles in future.]

Underwood:

The time to draw conclusions will come after... post-fire investigations are completed and published. Nevertheless, I will be surprised if they do not confirm these general rules about bushfires and bushfire management in Australia:

- *In the forested regions of southern Australia, prescribed burning with low-intensity fire to reduce fuel loads extends the range of weather conditions under which bushfire suppression can be safely and effectively conducted.*
- *Prescribed burning reduces the total load of fine fuel and thus reduces the height and flammability of elevated fine fuels such as shrubs and suspended dead material.*
- *Prescribed burning is the only practical way of reducing the tonnage of fibrous bark on trees, which is the prime source of firebrands that cause spotting and extreme rates of fire extension.*
- *Prescribed burning reduces fire intensity, reduces the rate of spread and the speed of growth of a fire, and thus reduces the potential for fire storm initiation.*
- *To be effective in limiting the spread and impacts of large intense wildfires, fuel reduction burning programs must cover a significant proportion of the landscape. Somewhere between 7% (roughly a 15 year burning cycle) and 10% (a 10-year burning cycle) of the landscape should be burned every year, or the whole program falls below a threshold of effectiveness.*
- *Experience gained from nearly 80 years of forest management in Australian eucalypt forests has demonstrated that prescribed burns must be at least 2 kilometres in depth, and that overall planning is needed to ensure a strategic pattern of fuel reduced areas*
- *Fuel reduction burning cannot be constrained to narrow areas around settlements, but also needs to cover the forested hinterland beyond. Otherwise intense fires will develop and generate fire storms and firebrand streams to which narrow buffers around towns offer no defence.*

Campbell:

This is the nub of Mr Underwood's argument, the majority of which I agree with. Our key difference lies at the start of the fourth dot point: *To be effective in limiting the spread and impacts of large intense wildfires, fuel reduction burning programs must cover a significant proportion of the landscape.* In my view, in catastrophic fire danger conditions in the climate we are heading into, such burning programs will not be effective in limiting the spread and impacts of large intense wildfires, especially in the absence of profound (and politically very difficult) changes to the way we live in the bush. Human settlement patterns; building design; people's attitudes to risk and their expectation of warnings and assistance in extreme conditions; the standard of bushfire preparedness at all levels; the budgets, staffing and training of land management agencies; the efforts put into identifying arsonists and maintaining power lines — these are all equally important. There is a risk that these issues will be overlooked in a polarised debate about whether to burn or not to burn.

Read both documents (<http://www.triplehelix.com.au>) and draw your own conclusions.