

# Thoughts on the Victorian Bushfires

Andrew Campbell, 10 February 2009

I was asked by a friend in America what I thought of some of the media and web stuff circulating about the Victorian fires.

As a Victorian forester with professional training in fire behaviour, fire suppression and fire management, and with experience as a sector boss in fires leading up to and including Ash Wednesday (Feb 1983), I have maintained an on-going interest in fire management in Australia. The way we handle fires for me is one of the key indicators for how well we are learning to live in this ancient continent. 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.

There has been lots of rabid stuff coming out since 7 February, pushing long-held anti-green agendas. Suggestions that 'it's all the greenies' fault' and headlines like "will the real arsonists please stand up" claiming that conservationists, tree protection policies and green groups' opposition to hazard reduction burning are to blame for the fires – and by implication, the tragic loss of life and on-going suffering for people and wildlife – have been particularly offensive.

Claims that fuel reduction burning would have prevented these fires are a nonsense.

Two crucial facts: 47 degrees temp (115 Fahrenheit) and 120km/hr winds. That these conditions followed 2 weeks of >40 degrees heat wave, that in turn followed an unusually wet November-December and lots of late spring-early summer growth, after a decade of drought, made for an explosive tinderbox.

Under those conditions, fuel reduction, access tracks etc are utterly irrelevant.

These fires burnt through areas that had been burnt by wildfire in 2004, and coupes that had been clear-felled within recent years, with no obvious drop in speed or fire intensity. Mountain Ash forests have a lifecycle adaptation to fire.

They are difficult to ignite (because they are tall wet sclerophyll forests with predominantly smooth bark), but when the conditions are right, they burn ferociously, creating an ash bed suitable for their regenerating seedlings. As ash seedlings are shade-intolerant, they regenerate best after very hot fires that destroy the canopy. When fires are exploding through the canopies of 200+ feet high trees with volatilised oils creating a superheated vapour, the ground layer becomes irrelevant. Many witnesses described huge trees literally exploding, and that is an accurate description under these sorts of conditions.

There were no lightning strikes whatsoever on Saturday until well after the cool change came through in the evening. Arson definitely played a key role and two people have already been arrested. The authorities were getting saturation airtime on Melbourne radio and TV from Wednesday onwards, telling people to avoid forested areas if at all possible on Saturday. They were saying very clearly that Saturday would be the worst fire conditions ever experienced in Victoria.

While these warnings were essential (giving the lie to people who said they had no warning), it is possible that these very warnings motivated the fire bugs. There has been too little bushfire research on arson, but that which has been done (in several

countries) suggests that this is seriously underestimated as a factor in large wildfires and loss of life.

Australia (especially Victoria) needs a complete rethink of fire preparedness. With a drying, warming climate, these hitherto unprecedented conditions will become more frequent in future. Few people have made the connect between fires and water supplies. If we did fuel reduction burns over the areas and on the frequencies advocated by the “it’s all the greenies’ fault” brigade, then water yields from forested catchments would drop dramatically, CO2 emissions would increase dramatically, and many species would disappear. Crucially, we would still have significant risks to life and property, both as a direct result of fuel reduction burns getting away, and because there would not be a significant impact on wildfires under the sorts of extreme conditions experienced on 7 February. These fires burnt through recently logged areas, as well as areas burnt by wildfire in 2004, with no noticeable drop in intensity.

The answers for me lie in these areas:

1. dramatically improved fire detection and first attack capabilities, with many more aircraft already in the air over high risk areas on high risk days, and highly trained first attack crews in helicopters distributed around the state (although no first attack would have succeeded on Saturday 7 Feb);
2. dramatically ramped up efforts to identify arsonists (psychological profiling of fire volunteers etc), penalties for arson, and monitoring of known firebugs (including GPS bracelets), with huge increases in the size of police arson squads (at the expense of the anti-terror squads) and stronger penalties for arson;
3. mandatory fire survival bunkers for houses/communities in fire prone areas – easily integrated with water tanks etc in rural residential areas – and changes to building codes to mandate fire-sensitive design for measures such as window shutters, leafless guttering systems, under-floor venting, gas bottle storage etc;
4. much better and mandatory training in fire preparedness for everyone in high risk areas.

The ‘leave early, or stay, prepare and fight’ policy is the right policy.

But the bar has been lifted for both options. Leave early means **before** the high risk day (which is reasonable now that forecasts are so accurate). Stay and fight means being trained, equipped and ready with a plan B (the survival bunker) for those rare situations (>40C, >100km/hr winds) like Saturday where fire behaviour becomes completely unpredictable and off the scale. If you don’t have such a bunker and the forecast is for such conditions (as was clear by 4 Feb) then you should leave before the bad fire day.

Personal fire shelters (clipped to belts or back-packs) as worn by US firefighters [they look a bit like a single person tent or swag made of aluminium foil, that ‘pop open’ like a beach shelter] could also be investigated for both residents and firefighters. Measures like turning off the gas supply at the mains on high risk days would also reduce the risk for residences. I do agree with fuel reduction and/or having at least one significant area of completely cleared land near residences. This is a completely different matter to broadscale fuel reduction over the whole forest estate. In times past, we would have called that cleared safe area a lawn. Now we need to look at other options. These fires proved that a parked vehicle (preferably a diesel) with the engine running and the air-conditioning on full

recirculating could be a suitable survival shelter, provided it was parked on a large enough clear apron away from major fuel loads. But they also reinforced the well-known point that attempting to flee in a car in dense smoke once the fires are well underway is incredibly risky. I am sure that the final analysis will show that many more people died in their cars in these fires than in houses.

In the bush itself, I think there is a case for targeted cool burns in dry sclerophyll stringybark and box-ironbark forests and grasslands, especially around particular assets, but not on the scale or frequency advocated by the zealots (e.g. 10% of whole estate every year). Areas burnt that frequently will change to favour fire-loving (flammable) species. Water catchments need to be handled very carefully or yields will drop even further. Fire researchers are already questioning the increasing tendency to use back-burning as a first option rather than a last option, because it increases the ultimate size of fires, the length of the burning edge, and lives have already been lost from back burns. I have some sympathy with the argument about keeping more tracks open, with the proviso that that also facilitates access for arsonists, can exacerbate erosion (if tracks are not well designed and maintained, +/- or become 4WD test-beds) and exacerbates weed problems. Of course climate change also means that the notion of a 'cool' burn is problematic. There have already been coroners' inquests into the deaths of firefighters undertaking so-called 'cool burns'. In my view, fuel reduction in wet sclerophyll forests and cool temperate rainforests is problematic, because when the forest is dry enough to burn, it means virtually having a planned wildfire.

Drying conditions mean that in SE Aust, a 'cool' burn in these forests is now really only possible in spring, which is when all the fauna and birds are breeding.

Aborigines used to burn in late summer/autumn (after breeding season and after native grasses had set seed), to encourage the fresh spring regrowth. But under contemporary conditions, fires at this time of year are very difficult to control and often become wildfires with consequent risk to life and property.

There is a torrent of ignorant opinion from self-appointed experts (mainly from outside Victoria, from people who were not there on Saturday (Germaine Greer being the most extreme example!)) hitting the media at the moment, blaming the greenies, the government and local councils.

To my knowledge, no mainstream conservation organisation in Australia is opposed to well-targeted and managed hazard reduction burning. A drying climate and a decade of drought have made it much more difficult to do successfully, and many communities and people with respiratory problems complain about the smoke. But the size of wildfires in Victoria over the last decade means that in fact vast areas have been 'fuel reduced' and yet the events of last Saturday still occurred. [Kevin Tolhurst](#) from the University of Melbourne (a current fire researcher gathering current data under contemporary conditions, unlike some long-retired 'experts' trotted out by the media) has said very clearly that fuel reduction in the forests would not have made any difference under Saturday's conditions.

The Victorian authorities have more expertise in these sorts of fires than anyone else. To my knowledge, none of the 181 deaths announced so far have been firefighters, which is a huge improvement from Ash Wednesday 1983 and Black Friday 1939. Their inter-agency coordination processes, their large fire management systems, their aerial detection, airborne infra-red fire-mapping systems, their personnel training, and their community education and communication systems are already up with the best in the world (especially considering their resource constraints compared with say California). This is

entirely appropriate given that Victoria is the most dangerous wildfire region anywhere, in its combination of climate, fuel types and fuel loads, topography and population density.

But these fires, against the background of climate change, herald a new era.

Just as the post-mortems of 1939, 1967 and 1983 also led to fundamental re-thinks and systemic improvements, so will the Royal Commission into these fires. The whole planning system should be overhauled, way beyond just building codes and vegetation management. Certainly the Victoria Premier and his cabinet – and I suspect now Kevin Rudd – also understand that business as usual will not do. I also think they understand the link to climate change in making events such as these (and worse) more likely in future. But they have yet to make the logical jump to the urgency of mitigating climate change, which means setting ambitious targets, and retooling the economy from top to bottom to achieve them.

I'm reminded of the challenge of running whole farm planning courses for farmers in the mid 1980s, looking at how to redesign farm layout and management to get a more synergistic blend of conservation and production. It was difficult to get farmers to imagine an entirely new farm layout – the fences on the ground had become fences in their heads. The most effective technique I found was to say *“imagine that your farm has just been burnt out, and all the fences and infrastructure have been destroyed. Would you put them back exactly as they were before?”* Invariably, the response was an emphatic *‘no, of course not’*. That little scenario exercise often unlocked their imagination and strategies for how the farm could be redesigned to better ‘fit’ into the landscape, its soil types and land forms, rather than be superimposed on to it in a rectilinear fashion dictated by some colonial surveyor 150 years ago.

This analogy applies at the level of the whole world financial system, and at the level of national, state and local governments in Australia. We have had our bushfire, literally and figuratively. The old structures have been flattened. Let's not put them back as they were. Let's take the opportunity to redesign, to rewire, to replumb and to replenish our landscapes, our economies, and our basic systems for food production, energy, transport, water and housing, to fit new climatic, ecological and economic circumstances.