

To the Inquiry

My wife and I would firstly like to thank the inquiry for the opportunity to outline what we consider to be the contributing factors to the devastation that occurred on our little patch of bushland during this last wildfire event on the 21st December, 2019 and indeed the preceding 2 fire events at least, both of which were also wildfire.

We live on 53 acres, in a new home that we purposely built to withstand the effects of fire and ember attack, and we have created a large APZ around our house and shed. With Divine intervention the APZ, the preparation that we done prior to the fire and a competent RFS crew from Killara, we were able to save our house and shed. We did lose some shedding and an old house on the other side of our property and a large stock pile of logs that we were using for firewood and slabbing as building materials, but these pale in significance to the damage that the intense heat has caused to the flora and fauna on the rest of the land.

At the risk of going over the same ground that we know others have done at length, and acknowledging that there are others that are far more qualified and well versed in the language that surrounds this topic, we will only give what we would like to call a layman's summary of the key points that led up to this last fire event, then note some of the resulting causes and effects of those events and finally describe the actions which must take place if we are to ever have some remnants remain of the forest that we take for granted now. Please excuse us but in the interests of being brief, we will note these as bullet points.

A little history,

- The land was sustainably managed for many thousands of years prior to European settlement. It had to support the Aboriginal nations that lived on this country.
- The Indigenous inhabitants of the land are known to have had comprehensive burning skills and fire management capabilities. This is fact and not a matter of debate.
- Nowhere in written histories that I am aware of, do the first settlers speak of "large swathes" of bushland that has trees that have been killed by wildfire, kilometre on kilometre, certainly not like we now see in huge areas such as the Snowy Mountains as one example.
- The forests had tall canopies and a lot less undergrowth. This can be proven by looking at old paintings and art works, old photographs and from speaking to anyone that has been on the land around here for more than 70yrs
- After the Aboriginal settlements moved off the land the timber getters and cattle men moved in. They used fire also to ensure easy access into the forests and to ensure the grasses regrew for the following season to fatten the cattle.
- In more recent history the lands that were being used for commerce were closed up for preservation and attitudes swung strongly against fire in general.(Even to the point that we have been abused by some bushwalkers from the city when we had a small campfire in the middle of autumn in a well known campsite that had been used extensively as such, for thousands of years.)

- Cool burning became a taboo in a lot of circles and became frowned on by a lot of people who had a lot of influence. The attitude became one of nonchalance for most... until they see the smoke coming that is.
- Cool burning became hazard reduction burning and only areas right up to properties was considered important enough to burn.
- The resulting flak from disgruntled home owners who oppose burning made it difficult to even burn at all and the rights of neighbours over took the right to carry out burns without permissions from them. it got to the point that a couple of people who didn't want their neighbouring property burnt could then feasibly cause delays to the burns which allowed them to put all the others in the street in danger, let alone the eco systems that existed in the area.
- The result of this is that large tracts of our bushland never see fire until it comes through as wildfire. We have areas of fuels that are 35yrs + in this state and anyone who has had significant fire behaviour experience has the hair raise up on their necks when they learn of it.
- History has proven more times than we can count, that wildfires are only ever stopped or slowed by 2 things, that is weather, and when they run into areas of low fuel.

Our little block and its surrounds in recent times

- Has never, to my knowledge, been part of a prescribed burn plan
- It has only ever been burnt hard by wildfire over the last 3 decades at least.
- It was impacted very hard on new year's day 2002
- It burnt very hot this last time on 21st December 2019
- This time it had 18yrs of fuel build up on the ground.
- The undergrowth was very thick as it had lost its canopy in the 2002 fire.
- The land across the road from us has been part of the Kurrajong Heights rural fire brigades mosaic burn plan, as is the all the land to the east of us.
- The NP across the road was hazard reduced in 2016.

The effects of fire

- It's probably necessary for the Inquiry to understand at this point, the difference between a cool burn and wildfire before reading on, and we would also like to ask our readers for a little patience while we outline a little high school level fire science.
- For fire to burn it requires 3 things. Oxygen, heat and fuel. As we humans have no way of controlling the first 2, we will note that by controlling the level of fuel, we can control at least one part of the triangle. If you take the other 2 uncontrollable factors out of the list of things that we can do to control the intensity on any given fire, it becomes clear that if you remove fuel, the fire will go out. Give the fire more fuel and it will naturally become more intense or it will have to burn longer. So clearly, if we control the fuel, we control the intensity.
- It is then to be understood that the 2 rogue parts of the triangle that we can't control, still have influence on the behaviour or intensity of the fire, but the effect is still the same. Less fuel and the fire has to be less intense than it might otherwise have been in any given scenario. (If we slow a fire down it gives us time. If we slow it enough, we may even be able to put it out)

- If 1m² has approx. 4000w of heat, a 10m high flame therefore can have 40000w/lm of fire front.
- When the simple science above is translated into our bush environment it has massive implications either way
- A fire of low intensity, or cool burn, will remove the excess fuels that are on the forest floor whilst preserving a lot of the larger hollow logs that form habitat. It will not burn down into the lower humus layer that lies under the leaf litter and the fire is necessary to stimulate the seeds that require the heat and smoke to do so. It also allows the fauna time to move away and in most cases they can either step over the burning edge or wait under a rock while it passes. Tree dwelling species simply sit tight and are at no risk.
- Cool burns are lit from the ridges and will burn down as far as the moisture in the fuels allows, typically going out before reaching the creek beds. These are areas of refuge to any escaping fauna.
- If a fire burning on the forest floor gets too hot it either scorches the tree canopy or worse, it can crown into the tree tops and burn the canopy. This type of intense heat can kill even the biggest trees and some species cannot survive at all.
- Intense heat will burn right down through the humus layer that sits beneath the rotting leaf litter and with this gone, soil is easily eroded and top soils and seed beds are lost.
- The sunlight now getting down into the forest floor will now promote the growth of any hardy plants that are left and the resulting thick scrubby understory makes perfect fuel for the next hungry wildfire that will inevitably come through and as described above, the higher the fuel level the higher the intensity.
- This will result in a spiralling cycle, which if not caught in time, will ultimately change the landscape and eco systems within it forever. We fear it is too late for our property already.

On our property

- Nearly every big tree before the last fire was badly scarred and now a lot have succumbed after this last fire. We have very few big healthy trees left.
- All the trees that are in the areas where we were unable to reduce the fuels, now all look like deer antlers with dead branches in the tops. Only a few species look as though they are shooting close to the crown, most are only shooting on their trunks. All this not only lowers the afore mentioned tree canopy but also adds to the debris that will fall to the forest floor over the next years.
- Finding the bodies of the animals that were trapped at the base of the cliffs in our gully is not something that one forgets easily.
- The main fire crossed from our back boundary, travelling 500m to the front boundary in approx, 20mins or so. It was spotting 600m ahead easily.
- Once over the road the fire travelled into the 3yr old fuels, maybe 800m or so over the next 6 hrs, under the same relentless wind.
- The fuel reduced area across the road from us burnt reasonably hard on the first ridge but reduced the intensity of the fire down into the gullies and the trees there are in great condition and the canopies are intact. The fire basically went out itself over the next week or so.

What is to be done.

- The most critical thing that we Australians now must change is the attitude that we have developed around the subject of fire. Our society now teaches us from our infancy that fire is bad, that it is damaging and something to be dreaded. Our bushland however needs fire to survive. It requires the cool burn process to protect its fauna and flora and various eco systems. There is no question but that the cool burn methods that our indigenous forebears used are the best methods that we can implement to protect what we have left. It has to be clear to even the very short-sighted that what we have in our bushland environment, that is in any way worth protecting, has been protected by fire for thousands of years before now so to change these practices, as Europeans have been doing for the last 200 yrs will come and has come at a cost. So, we must embrace fire. Respect it, yes. Fear it also, but understand it and embrace what it can do, no, what it must do for our environment.
- What I have learned as a RFS volunteer fire fighter with almost 25yrs experience in fire behaviour, is that if fuels get to 10yrs old they start to become more difficult to deal with. Windows of opportunity to undertake prescription burns become tighter and shorter. Scorch heights are almost impossible to keep to prescription and it requires skilled people with patience and experience to ensure burns do not burn to hot and therefore become detrimental to the environment. It is my recommendation that we look carefully at the time between burns and remove the maximum burn cycle time (10yrs in our area)
- With the above point in mind, it is then my recommendation that any patch of land that is not burned within a 10yr period should automatically be raised as a potential issue and its managers should be given notice. There is at present no accountability to anyone who has not reduced the fuels on land that they are responsible for.
- At present any patch of land that is put up for hazard reduction burning is done so voluntarily. This is also left largely to RFS brigade volunteers, most of which are time poor and the amount of work required is extensive. Sadly most brigades of late train for suppression rather than prevention and protection of their environments is not really on the training list of things to do as are asset protection and the like. I propose that all brigade areas are broken up into a mosaic, and each block in it has dates set to be targeted for burning by a given date. Brigades should be given first chance to do this on their own but if they cant or if they are not able for any reason, the paid staff are to hire trained personnel to assist.
- The BFMC for each area are to become responsible for the land in their management area and ensure that everything that can be done is done to keep the above mentioned deadlines up to date. They are to hold land managers to account and organise assistance where required. At present there are no firm deadlines set.
- If the note above about the 10yr maximum instead of minimum time between burns statement carries any weight, it is clear that the yearly targets for prescription burning have to be 10% of lands that are deemed environmentally important enough to protect. It is to be noted gratefully that of late burning has doubled from 1% to 2%, that is fantastic but that means it would take 50yrs to treat all areas that need treating. The target has to be raised another 8% as soon as possible. This would need a concerted effort from all levels of government and costs will be high...but what is it worth? The cost of chasing these last fires, acknowledging the adverse conditions, is beyond counting. Billions.

- Cool burn traditions and culture should be introduced into brigade training.
- Finally and maybe most importantly, a culture that is strong in the RFS is one that recognises that hazard reduction burning is predominantly to protect properties and assets. That is great, but the forests and bushlands are also an asset and they should be recognised as such. In fact it can be said that by protecting the bushland around our assets we automatically protect the property assets as a matter of course. It **must** become top of mind that the environmental damage that we are inflicting on our bushland by holding back on cool burning is **not** sustainable into the future and that we need to **change** what we are doing now before it's too late.

In conclusion, we would like to thank you again for this opportunity and we invite interested persons onto our little patch of land as the evidence of the above spiel is extraordinarily evident here. The vast difference between our property and the NP over the road is staggering.

We must follow through now and stand stanch if we are to make change. We understand that the changes we propose in the above are no small thing but this is real and this is a cause worth working hard to resolve. We must firstly understand what has to be done to best preserve our environment and then make it law. It was law to look after the land before Europeans and it should be now also.

As someone close to me said recently, "you know Mark, if we can all drive on the road and follow the road rules, you know, whether we are Greens, Labour, Liberal or anything in between, why can't we just drop the politics and all get on with following the rules that will protect our bushland?"

We will have science point out many things, and if you look hard enough you can always find another study that will rebut or support any given argument, especially when it comes to this subject. Luckily we have a history that has shown us the right ways from the wrong.

Yours sincerely

Mark and Tanya Jol