

Submission to NSW Bushfires Enquiry on the 2019/20 Bushfires

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Experience:

BSc Forestry ANU. 32 years as a graduate forest manager with Forests NSW. Frontline fire management experience at Dungog, Bega, Cessnock, Mudgee and Bombala districts. I was an operations and environmental auditor for the State for 3 years. Finally, I held the position as operational planning manager at Hunter Region.

When I was in Bega, Cessnock and Mudgee I was actively involved in programmes to improve erosion control standards of fire trail access on vast areas of crown land. I was also partly involved with broad scale aerial ignition of secure land areas for hazard reduction. These programmes were authorised by regional fire prevention associations and works were planned, supervised and carried out by the Forestry Commission. These areas were in the Wadbilliga, Wollemi and Yengo areas.

Issues Discussed:

- Climate change
- Hazard reduction burning
- Lessons from the Canberra Bushfires of 2003
- Gospers Mountain Fire
- Badja Road Fire
- Fire Management in wilderness areas

Climate Change

The NSW RFS fire chief Shane Fitzsimmons says that this fire season is the worst fire season on record. It started in the north in June 2019 and continued until late February 2020.

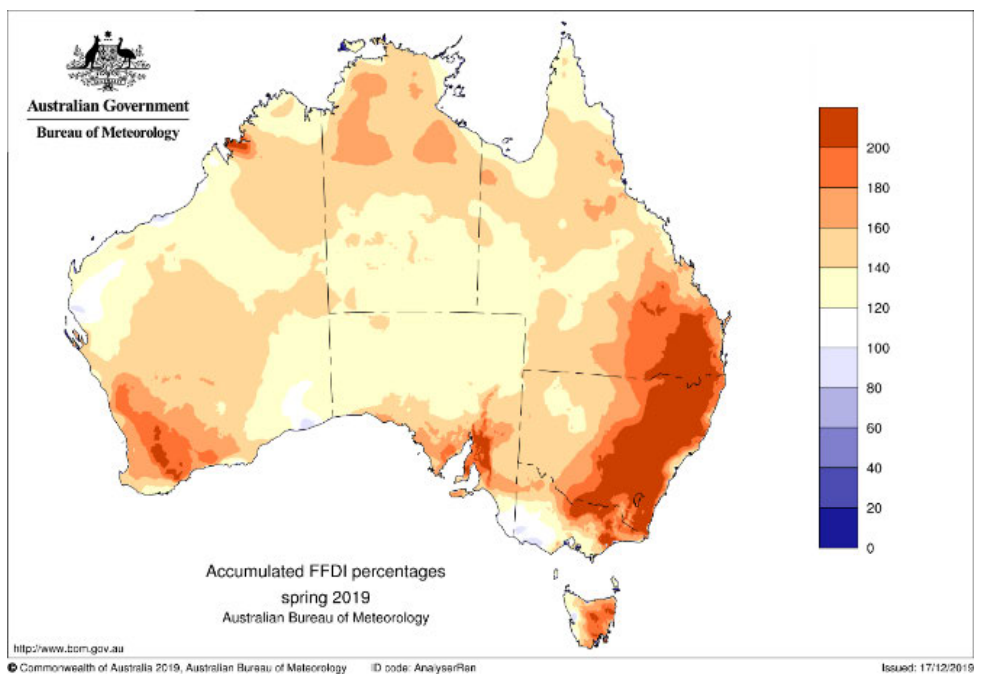
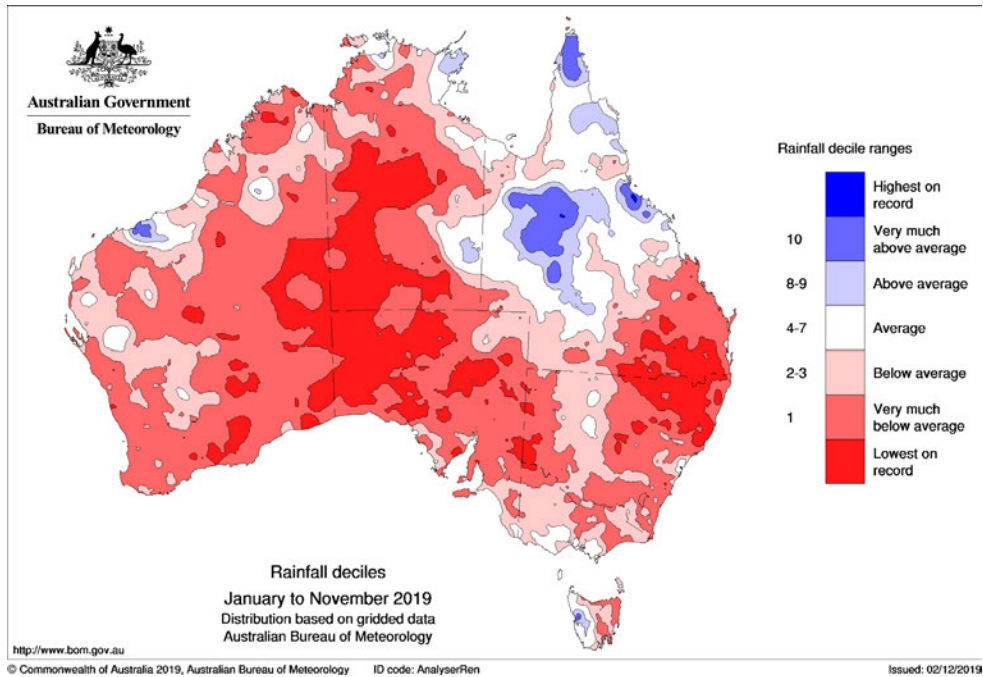
As of 9 March 2020, the fires burnt an estimated 18.6 million hectares, destroyed over 5,900 buildings (including 2,779 homes) and killed at least 34 people. An estimated one billion animals have been killed and some endangered species may be driven to extinction. At its peak, air quality dropped to hazardous levels. The cost of dealing with the bushfires is expected to exceed the A\$4.4 billion of the 2009 Black Saturday fires and tourism sector revenues fell below more than A\$1 billion. By 7 January 2020, the smoke had moved approximately 11,000 kilometres across the South Pacific Ocean to Chile and Argentina. As of 2 January 2020, NASA estimated that 306 million tonnes of CO₂ had been emitted.

There has been considerable debate regarding the underlying cause of the intensity and scale of the fires, including the role of fire management practices and climate change, which has attracted significant international attention.

Many people are tempted to hit on simple explanations for the severity of the season. The Greens and a large proportion of the population exclusively blame climate change. Some go further and directly blame the coalition government, calling them arsonists. In fact, many are now so obsessed with climate change that everything that happens, is to them, caused by climate change. So many people think that Climate Change is the **only** issue. They feel aggrieved about the destruction caused by the fires and look for someone to blame. The obvious object of their anger is the current government. This is too simplistic and sometimes smugly self-righteous. Abuse of people in public office doesn't help the fire managers and frontline firefighters.

As a society we need to examine the implications of the new normal and rationally come up with management solutions.

The primary reason is the extremely dry state of the vegetation due to the prolonged drought. This has been caused by the failure of the northern wet season to penetrate very far south and the failure of southern wet season to penetrate very far north. The whole of Central Eastern Australia was in severe drought. When the forest and grasses are so dry, fires are very difficult or impossible to control during adverse weather. This is graphically illustrated by the figures below.



The severity and pattern of the current drought appears to be consistent with what the climate scientists have predicted. As time goes by, proper scientific analysis will validate climate change effects. Certainly, the rapid rise in global CO₂, global temperature and melting polar ice is well established and very alarming.

The Garnaut Climate change review of 2008 stated:

“Recent projections of fire weather (Lucas, *et al.*, 2007) suggest that fire seasons will start earlier, end slightly later, and generally be more intense. This effect increases over time, but should be directly observable by 2020”.

To describe emerging fire trends, the study by Lucas and others defined two new fire weather categories, "very extreme" and "catastrophic".

The analysis by the Bushfire CRC, the Australian Bureau of Meteorology, and the CSIRO Marine and Atmospheric Research found that the number of "very high" fire danger days generally increases 2–13% by 2020 for the low scenario (global increase by 0.4 °C) and 10–30% for the high scenario (global increase by 1.0 °C). The number of "extreme" fire danger days generally increases 5–25% by 2020 for the low scenario and 15–65% for the high scenarios.

In April 2019 a group of former Australian fire services chiefs warned that Australia was not prepared for the upcoming fire season. They called on the next Prime Minister to meet the former emergency service leaders "who will outline, unconstrained by their former employers, how climate change risks are rapidly escalating".

In August 2019 the federally funded Bushfire and Natural Hazards CRC published a seasonal outlook report which advised of "above normal fire potential" for southern and southeast Queensland, the east coast areas of New South Wales and Victoria, for parts of Western Australia and South Australia. In December 2019, the Bushfire and Natural Hazards CRC updated their advice of "above normal fire potential".

Hazard reduction burning

Hazard reduction burning has become more difficult to achieve in recent times. There are many more people living in or next to the forest, on the urban fringe, and the forests of the east coast of Australia. Normally a beautiful living environment but dangerous during periods of high fire danger. A significant proportion of these homes are uninsured, not built to withstand ember attack and have flammable forest up to their doorstep.

Many of these residents oppose HR burning making the planning process long and difficult. Many people in the broader community complain of the smoke created by hazard reduction burns, meaning that often burning has to be suspended during ideal burning conditions. It is certainly true that asthmatics and people with respiratory problems can be seriously affected.

Other critics say land managers use HR burning to stop fires but that in extreme conditions fires will burn in hazard reduced areas so why do it anyway. Land managers don't use HR to eliminate fire, they use it to strategically reduce fuel loads so that wildfires burning in those areas have much less intensity and have a far better chance of being contained during milder conditions. As a fire manager I often used hazard reduced areas to consolidate containment of fires at night and early morning when conditions were less volatile.

There are always many reasons put forward to not do HR burns, such as threatened plants, harm to wildlife, poor air quality, risk of fire escapes. However, people forget that the consequences of not doing HR burning are far more serious. It means that wildfires are much more intense causing severe damage to wildlife, air quality, the forests, property and sometimes lives. The recent bushfires graphically illustrated this.

In response to criticism the Rural Fire Service in NSW says that they have achieved their recent HR burning targets and that they are better resourced with equipment than ever.

In the past when more of the forest landscape was State Forest and Crown Land, hazard reduction burning was more frequent and wide spread. Local landholders were generally convinced of the benefits of hazard reduction. Some were over enthusiastic burners and would light up the forest adjacent to their grazing blocks when weather conditions caused hot damaging fires in the forest.

Some say that Aboriginal burning is the perfect way to manage the Australian bush. This is successfully practised in sparsely populated parts of northern Australian Tropical Woodland, but is probably not practical in parts of eastern Australia near areas of high population. However, it is well documented that before white settlement, Aborigines did use fire very frequently in eastern Australian forests to create a mosaic of burnt areas for hunting and improved access which also reduces fire intensity. I agree that Aboriginal land management practices could certainly be trialled in certain areas more than is currently done.

Lessons from the Canberra Bushfires of 2003

On January 18, 2003, four bushfires that had been burning in the Brindabella mountains for more than a week combined and roared into Canberra's south-western suburbs, destroying 500 homes and claiming four lives.

The fires began on January 8, 2003, when a series of dry lightning storms swept over the vast expanse of Namadgi National Park, which makes up nearly two-thirds of south-west ACT. When authorities detected the fires, they dispatched small crews into some of the most remote sections of the bush. But the fires were hard to access and there was no real sense of official urgency. They were subsequently criticised in an ACT Government inquiry and a long-running coronial inquest, for doing too little, too slowly. The McLeod Inquiry concluded the fires "might have been contained had they been attacked more aggressively in the 24 or so hours after they broke out."

By contrast there were about 50 dry lightning strikes in and around the Tumut, Batlow, Tumbarumba Forests. State Forest NSW had several mobile quick strike units and many standby personnel who were immediately dispatched to find the fires which were rapidly contained.

Canberra authorities knew the fires were coming but underestimated the scale of the firestorm and overestimated their capacity to stop it. It was a massive bushfire that created its own weather, with cyclone-strength winds and fire tornados. In every sense, it was a firestorm. Between 1pm and 1:30pm the fires crossed the Murrumbidgee River and only then did ACT emergency authorities seriously consider the suburbs were under threat. From the river it was all uphill to Canberra, the conditions under which fire spreads fastest.

The first public emergency warning was finally issued just after 2pm, listing Duffy, Chapman, Rivett, and Holder as areas most at risk. Instead of urging residents to leave the area, it asked them to return to their homes and prepare for the coming fire front. At first, a senior emergency services official, resisted police efforts to declare a state of emergency, which would allow police to forcibly evacuate residents.

By 2:45pm, the fire began burning extensive pine plantations around Mount Stromlo and eventually destroyed the historic observatory telescope complex that sat at the crest of the hill.

Pine forests also surrounded the suburb of Duffy on two sides, and firefighters dispatched to the suburban fringe were quickly forced to retreat. Between 3pm and 3:30pm, the first houses were lost in Duffy. Almost simultaneously, fire ignited homes in Rivett, Holder, Chapman and Kambah.

Among the many lessons from the Canberra fire were:

- Act promptly and decisively to contain fires at their source before they become too big to control.
- Don't underestimate the rate of spread on a bad fire day.

- Only experienced and well-prepared people should stay and defend their homes. The rest should evacuate early.

The Gaspers Mountain Fire

A fire that was ignited by lightning on 26 October at Gaspers Mountain in the Wollemi National Park, could have been accessed from the Wirraba Range trail or from the Rylstone side. However, it was allowed to burn and grow in size until it became an uncontrollable monster burning properties in the Putty Road area and burnt towards the Central Coast and potentially threaten properties in Wisemans Ferry and other townships. This relaxed attitude simply accepted that fire is part of wilderness, albeit in time of severe drought and an approaching severe summer, with communities in the path of the fire.

In an attempt to protect the Blue Mountains from the Gaspers Mountain bushfire, firefighters commenced a large backburn on 14 December in the Mt Wilson and Mt Irvine areas. Due to heavy fuel loads and erratic weather conditions, the backburn quickly grew out of control, threatening houses in Mount Wilson and Mount Irvine. The fire eventually jumped Mount Irvine Road and on 15 December, under deteriorating conditions, the fire impacted Mt Tomah, Berambing and Bilpin. The fire destroyed numerous houses and buildings in this area, and then jumped the Bells Line of Road into the Grose Valley.

On 19 December 2019 the Gaspers Mountain fire impacted on the Darling Causeway between Mount Victoria and Bell, it later jumped the Darling Causeway and impacted the Grose Valley and the fire would be split into two fires: Grose Valley fire and Gaspers Mountain fire. On 21 December, a catastrophic day, the Grose Valley fire impacted Mount Victoria, Blackheath, Bell, Clarence, Dargan and Bilpin with resultant destruction of dozens of homes. On the same days both the Gaspers Mountain fire and the Grose Valley fire moved towards Kurrajong. Back burning operations were put in place to save Kurrajong and surrounds and to save all Blue Mountains towns from Katoomba to Winmalee.

By the 10 February 2020 the Gaspers Mountain fire had burnt approximately 512,000 hectares, making it the biggest forest fire in Australian history.

Extraordinary measures were taken to protect the Wollemi Pine from the fire. This was certainly a wonderful achievement and made a good media story. Perhaps similar conscientious measures should have been directed to containing the original fire while it was limited in size.

The Badja Road Fire

I also had a special interest in the Badja Road fire having project managed the construction of Badja Forest Road and wrote the management plan for Badja State Forest.

The forest is on the western side of the vast Wadbilliga wilderness area. The fire was not urgently controlled early from the Western side and grew into a vast uncontrollable monster which destroyed the villages of Cobargo and Quaama, took two lives and destroyed numerous properties at Nerrigunda, Cobargo, Quaama, Brogo and the Bega Valley near Bemboka.

I understand that this fire followed much the same path as the 1952 fire that caused loss of life and severe property damage in the Bega valley. I understand that this fire led to the formation of the far south coast bushfire prevention association.

Fire Management in wilderness areas

The concept and ideals of protection of wilderness areas are well established and supported by the majority of Australians. NSW has large areas of wilderness protected by the wilderness legislation and some qualify for World Heritage status because of the combination of outstanding natural values. The emphasis is on an ecosystem approach to conservation - protecting and restoring the natural environment and supporting the survival of native plants and animals in the areas.

Access is limited to essential management operations and low-impact recreation like bushwalking and canoeing. There are no public roads and no visitor facilities in wilderness. For visitors, self-reliance is the key to safety and enjoyment.

It is also increasingly recognised that all 'wild' areas in Australia have been influenced by thousands of generations of Aboriginal management and that traditional custodians continue to have strong connections to these landscapes. However, it is many years since the aboriginal practice of cool multi-staged burning has been practised.

Some say that Aboriginal burning is the perfect way to manage the Australian bush. This is successfully practised in sparsely populated parts of northern Australian Tropical Woodland, but is probably not practical in parts of eastern Australia near areas of high population. However before white settlement, Aborigines did use fire very frequently in eastern Australian forest to create a mosaic of burnt areas for hunting and improved access which also reduces fire intensity. Aboriginal land management practices could certainly be trialled in certain areas more than is currently done.

No one is posing the question: Why did Koala populations thrive in the Australian bush for thousands of years under Aboriginal burning practices but are being decimated under our current land management practices. Most people's response to hazard reduction burning is: It is harmful to Koalas and other threatened species. My reply is, it is much more harmful to them not to carry out properly planned and controlled hazard reduction.

In NSW under the governments led by Neville Wran and Bob Carr, most of the Crown Land and about half the State Forest became National Park. Large areas were also declared wilderness, such as Wollemi, Yengo, Blue Mountains, Morton and Wadbilliga. Fire trails were closed or allowed to deteriorate and active fire management reduced. Broad scale aerial hazard reduction ceased at the time. These areas have all had ferocious fires this year burning vast areas of forest over many months. Fires burst out of these wilderness areas on days of extreme fire weather and destroyed communities and properties on the Putty and Bell's Line road, on the south coast, Nerrigunda, Cobargo, Quaama, Brogo and the Bega Valley near Bemboka.

When I was in Bega, Cessnock and Mudgee I was actively involved in programmes to improve fire trail access on vast areas of crown land and broad scale aerial ignition of secure land areas for hazard reduction. These programmes were authorised by regional fire prevention associations and works were planned, supervised and carried out by the Forestry Commission. These areas were in the Wadbilliga, Wollemi and Yengo areas. We used to maintain the Wirraba Range trail from the Putty road to Gaspers Mountain. This trail was left to deteriorate by the NPWS after the area became Wollemi National Park such that it was eventually abandoned. This was done to exclude vehicle access from the planned wilderness area.

Our society needs to ask the question, can we afford to allow fires to burn uncontrolled in these vast areas during the bushfire danger period, only to come bursting out on wide fronts with ferocious intensity, on days of extreme weather. There are large numbers of people living in and near these forests who inevitably lose homes, property assets, livestock and sometimes their lives. And the death of forest animals and damage to the forests are incalculable. We cannot accept it as just part of 'mother nature', because we have altered the structure and management of 'mother nature'.

We simply must find ways to urgently and decisively contain fires at their source before they become too big to control. This applies particularly to fires approaching or during the bushfire danger period.

Options should include:

- Vigorous early identification and mapping of lightning strikes.
- More use of specialist remote area fire teams transported by helicopters and backed by water bombers.

At the very least we should allow a greater network of properly constructed fire trails with high quality erosion mitigation standards to allow early attack of lightning strikes and to provide secure boundaries for hazard reduction. These trails can be locked off and patrolled to restrict vehicle access to authorised people only. Bush walking need not be restricted except during dangerous weather conditions and could be controlled using a permit system and adherence to strict conditions. This type of management is currently carried out in the major city water catchments.

To many in the Green movement bulldozers are instruments of the devil. However, used properly and with proper planning and controls they are very effective in containing fires and providing access to crews.

After the fires

Now that this fire season has finished, there will be recriminations and reviews. The RFS will get a huge budget increase, there will be more firefighting aircraft purchased. Hopefully there will also be better planning controls on people living in and adjacent to highly flammable forest.

Some people say that the army should be better used. This is probably true. They used to send army crews from Singleton to help us in Cessnock. We found them of limited experience in forest fires, but that could be addressed with training.

The press love to report on disharmony within the ranks of the RFS, often quoting the fire fighters association who are critical of management. This is naïve and unhelpful during the heat of the battle and should be addressed during the post fire season reviews.

The NSW Government has announced that it will upgrade its policy on renewal energy against considerable opposition from the national party and liberal right wing. Hopefully the federal Government will be prompted to do the same.