

To the NSW Bushfire Inquiry May 2020
Observations, comments and some recommendations
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My location

4 km south of the village of Quaama NSW, 1 km west of the Princess Hwy
semi open grazing country with scattered tree species, dense at times along creek lines and planted wind breaks

My current situation

Retired on a small life style rural property

Profession prior to retirement

Technical scientist with CSIRO specialising in Bushfire Research for 35+ years

Wildfire impact on my property and surrounding properties

Extensive ember attack from mountain forest fuels (embers) up to 35km upwind of the property producing hundreds of individual spotfires, many of which coalesced to form fast moving fire fronts through grassland and pockets of forest.

This characteristic fire spread event fanned out from the mountains to the west and extended from below Mcleod Hill in the south to just north of the village of Cobargo during the early hours of New Years Eve 2019.

The frequency and speed of these fires in the most part overwhelmed attempts to carry out property protection in much of the area surrounding my property. The fact that these fires actively spread during the early hours of the morning further caught everyone from village residents to landholders by surprise

and contributed to the unpreparedness that many people faced.

Ignition sources from lightning strikes on the coastal ranges

A similar event to the multiple lightning strikes in the Brindabella ranges west of the ACT which led to the catastrophic fires which impacted Canberra in 2003, a series of lightning strikes started several ignitions in the mountain forests of the Wadbilliga NP wilderness area in the days following Christmas Day 2019. These ignitions were picked up fairly promptly by aerial surveillance and remote sensing. Their remote locations were attacked by aerial tankers to suppress or slow the fire spread because access on the ground was limited. Mapping by the NSW RFS suggested that during the infancy of these fires the aerial application of fire retardant helped slow their spread. With worsening fire weather conditions in subsequent days the suppression lines established around the fires, whether by retardant drops or traditional fire break techniques did not contain the early fire spread.

Comment – Fires starting under these extreme conditions need urgent action and resources

An ignition and subsequent fire growth in these inaccessible forest fuels, occurring under elevated summer Fire Danger Indices should immediately be assigned the status of an out of control wildfire which has engaged all the variables such as terrain, fuels and the weather (both seasonal and in real time) and therefore represents a running fire that has reached its full damage potential. It follows then that rapid and effective suppression techniques have to be deployed and adequate resources assigned to reflect the fire's potential as a running wildfire under the prevailing conditions and not delay because it is a small, benign ignition in its early development where its future potential is underestimated.

The expansion of RAFT (rapid aerial firefighting teams) need to be developed further to get more skilled crews on the ground early around these ignitions to consolidate the effectiveness of aerial retardant drops by using conventional firefighting (handtool) techniques to compliment and consolidate the aerial suppression.

Comments on hazard reduction (HR), fuel reduction and control burning practises to lessen the impact of wildfire

The effectiveness of previous fuel reduction events whether deliberate and planned or as a result of a previous out of control fire to lessen the impact and intensity of an extreme wildfire, has come into question by some again. Some believe that once a fire reaches a certain intensity no degree of prior burning or fuel reduction, physical removal or grazing has any significant effect on the spread as well as other characteristics of these high intensity fires.

In general terms some form of fuel reduction will always effect fire behaviour by reducing flame height and spotting potential. Conversely the rate of spread of a high intensity fire front across previously burnt surface ground fuels may not be reduced significantly over small areas of forest, but in saying that crown fires and their development from the surface fuel bed are far less frequent in occurrence. For there to be a reduction in surface fire spread, the reduced fuels ahead of the fire need to be significantly large in area to have an effect ie. hundreds of metres in all directions for high intensity fires. A reduction in fire behaviour and spread will almost certainly be gradual as the younger fuel structure absorbs the previous heavy fuel energy generated by the fire.

To examine the effects of fuel reduction in the context of these

fires, I encourage the committee to examine the fire event pre-dating the Werri Berri Fire (the most southerly lightning caused ignition in the Wadbilliga National Park wilderness area).

This was the Yankee Gap fire to the north of the village of Bemboka which started 18 months before as a result of a fire ignition from grazing country outside the National Park. It burnt under strong winds on the 15th August 2018 and spread rapidly by surface fire and spotting propagation in an easterly direction across sharply dissected ranges in the southern portion of Wadbilliga NP. It was eventually suppressed in more open grazing country east of Morans Crossing and the Numbugga district close to the northern rural outskirts of Bega. It was a fast spreading fire with extensive long distant spotting from embers originating from long unburnt fuels in these mountain forests close to Bemboka. In the weeks that followed the northern portion of the fire edge extended as far as the Brogo reservoir, much of this movement under more favourable fire weather.

Fast forward to the Werri Berri Fire which ignited within the Wadbilliga National Park NW of the Yankee Gap Fire origin. This fire burnt in a more SE direction compared to Yankee Gap, but it appears from the fire scans that the previous wildfire and resulting fuel reduction had a profound effect on restricting and controlling spread of the fire edge on the NE side. This was apparent on the scans for at least a week later.

From my perspective and what I observed from my property on Dummett Jessops Road, the previous Yankee Gap fire and the fuel reduction it caused in the forests to the SW of us meant that the major fire runs from the Wadbilliga NP on the morning of the 31st Dec 2019 prevented a deadly junction zone forming between the NE edge of the Werri Berri fire and the SW edge of the Countegany – Wadbilliga fire complex.

Further, on the 4th Jan when a late gale force S-SW wind change

past across our property, the fact that the previous Yankee Gap fire area had helped to contain the NE edge of the Werri Berri Fire meant that longer distance spotting did not occur in our unburnt grassland to the south and west of our property.

It is important to examine these aspects of fuel reduction. The Yankee Gap Fire area may have been burnt again in places by the Werri Berri Fire, remembering that leaf fall during the severe drought after the Yankee Gap Fire would have provided enough forest litter to carry a surface fire again after 18 months, BUT the long distance spotting potential from aerial fuels such as bark, had largely been consumed prior to the Werri Berri Fire. Post fire, when driving along the Snowy Mountains Hwy between Numbugga to the east and Brown Mtn to the west, the forest canopies to the north of this road are largely intact, indicating that the Werri Berri fire burnt more as a surface fire at lower intensities than fire in other areas which frequently crowned and defoliated large tracts of forest found in long unburnt fuels.

The big picture stuff that must be examined

Near real time fire mapping

Fire mapping across borders (need cross border agreements for universal mapping methods) eg. The border fires between Vic (Gippsland) and SE NSW – detail mapping of fire perimeters in NSW were carried out and updated regularly. However continuation of these fire perimeters and the level of detail for the same fire area were inadequate on the Victorian side of the border. (due to a different agency using different equipment?) The lack of detailed mapping for approaching fires across a State border does not assist firefighters or property owners in planning for real time fire mitigation. An interagency agreement to overlap scan info by at least 50 km across State Borders would be helpful.

Management of the forest estate

Management and funding for sustainable land management and FUEL MANAGEMENT must be an ongoing priority. Ideally I would like to see a return of a Forestry Commission, or similar organisation that could perform selective harvesting regimes (to help fund sustainable management), together with long term forest management commitments which help to create new careers and skills in forestry and fire management.

If National Parks are to continue managing these wilderness areas along the great dividing range their funding, resources and work force need to be significantly up scaled.

Future Hazard Reduction Programs

I believe that indigenous people should be encouraged and careers established for their integrated participation in the planning and implementation of prescribed burning in the forest estate.

This is also an opportunity to improve the practises of prescribed burning and only conduct burning when conditions are optimal for the outcome required. In the past I have seen too many burns conducted within the constraints of “9 to 5” working hours and the window of opportunity is diminished, or worse still the burn ends up not meeting the prescription target eg. a cool low intensity fire that ends up being too hot and damaging to the ecosystem because the fuel and weather conditions were outside the prescription window.

Taking the Wadbilliga area as an example, large scale aerial burns obviously are needed for the 5 to 7 year cycle, but in this heavily dissected terrain more fire trails along the main ridges should be incorporated and maintained to allow regular edge burning off the trails. The “backing fire” a low intensity surface fire that is allowed to creep down slope compliments the large scale burning

programs but ensure that these fuel reduced areas are burnt as often as they will carry fire. Excessive fuel loads that have been allowed to build up on these steep drier aspect slopes, provide, when fire is present, enormous ember release and contribute to the mass, long distance spotting we were subjected to in the grazing country to the east. Post fire, many of the ridges in the mountain forests carry totally defoliated tree lines as testament to how intense the fires were burning up these ridges.

Current organisations

Currently the traditional forest management organisations such as NSW Forestry Corporation and NPWS do what they can to minimise the risk of fire outbreaks in their relevant areas but with increasing under funding and under resourcing being common place these days, combined with a severe and long term drought, then to be superimposed with a long and devastating fire season, the effectiveness of these organisations was seriously reduced.

It must be said that the NSW RFS has provided us with an increasingly skilled and well equipped organisation and volunteer work force. Their near real time aerial mapping of running fires and its broad user availability is to be applauded as well. The things that worry me though with an organisation like this is its centrally controlled structure which can slow down decision making and response times for local people out in the districts, who in some instances have the local knowledge and skills to assemble a quick response to a fire outbreak in their patch and therefore act before a direction is given from central HQ.

Also of concern is that the RFS, through necessity is taking on the role of more forestry related operations and therefore taking the organisation beyond its original charter of rural fires and property protection, involving volunteers who are not sufficiently trained (and should not be for forest operations) and therefore cannot be expected to be involved in forest fire operations.

