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NSW Independent Bushfire Inquiry
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Submission to NSW Independent Inquiry into the 2019-2020 Bushfire Season

Thank you for the opportunity to provide this submission to the inquiry.

1. Background:

I am a Registered Landscape Architect with over 40 years in practice; in regional/country areas. I live and work from a property that was impacted by the fires near Willawarrin, sadly now well-known from the catastrophic fires of mid-November, which 'spotted' from the Jacobs Spur fire.

I am an Active RFS Member with Bellbrook Brigade in the mid- Macleay catchment. On a few occasions I was involved in the control of the Jacobs Spur fire, which turned into the Carri East complex and was also involved in establishing a control line between Nulla Nulla Creek and Fiveday Creek. Due to road closures I could not assist further and needed to prepare and protect my own house, assets and property.

Many in the area (and later; other areas along the ranges and coast of NSW and beyond) lost lives, houses and assets, as is well publicised and known. The costs of fighting them and the losses are overwhelmingly massive including:

- § The costs of Fire- fighting/control include: Planes, helicopters, fire trucks, water cartage, over-stretched RFS and control centres and evacuations...
- § The costs of losses include: Lives, houses/sheds, infrastructure, fencing, stock, physical, monetary, livestock, fish and oyster-stocks, forestry & environmental losses tangibly. Less tangible losses include: emotional (including mental health, anxiety/hyper-vigilance), otherwise productive time, weed invasion, etc... And the losses for rebuilding/restoration, which will continue for many years to come.

That's a summary of 'The Costs'.

2. The cause and factors contributing to the fires and their qualities. The Inquiry's Terms of Reference 1.

The below assessment and recommendations relating to control of ignitions, will almost negate your terms of reference 2 to 11. But they only address the symptom, the Fires: Not the underlying cause, Climate Change.

The 'Setting' for the ignition, extent, intensity and catastrophic impacts of the fires is/was Climate Change caused; 'Beyond reasonable doubt'. This leading to the unprecedented drought; leading to an extremely dry landscape; presenting an unprecedentedly dry and volatile landscape throughout NSW. - This was never going to be a 'normal' fire season.

Fires 'Ignited' by lightening; comprised about 80% of the ignitions. These on the peaks of hills in the Great Dividing Range forests in remote and inaccessible terrain - also 'beyond reasonable doubt'. Early 'Fires near me' mapping clearly demonstrate this. Synoptic charts and mid-range bureau of meteorology forecasts at the time, predicted the occurrence of, likely 'dry-storms'. - This, with the volatile setting, should have sent relevant decision-makers into establishing immediate targeted action.

Fires that ignited early in the season, were allowed to establish and expand in the inaccessible terrain, with the 'normal' strategy of fighting to control it, as it came out into accessible pasture and threatening 'assets'; by this time the fires were massive in extent and speed, totally overwhelming control resources.



My below recommendations, in part, stem from the adage that "The only good fires are in the hearth or a dead one". (*Hearth meaning, in a controlled space.*) Perhaps an over-simplification; but it relays a good rationale.

Bushfires need to be identified and extinguished as soon as physically possible, before they become a problem.

I believe and recommend that as Prime Immediate Actions: NSW/Australia develop a system that prepares for, funds, activates and monitors ongoingly; a system where:

- i. Fires are identified and located immediately; or at least within hours.
(Perhaps with 'real time' heat sensor satellite capabilities such as 'Sentinel Hotspots' now 'Hotspots DEA' and linked to every Fire Control office?)
- ii. Ensure the capability for 'Immediate response', to completely extinguish the identified fires before they develop into a problem.
(This could be by air, for immediate response and RAFT teams or 'other' as appropriate in the scenario, to ensure 'black-out' the fires as quickly as physically possible? - All the resources necessary ASAP.)

This might seem simple and is; especially when related to the 'Opportunity Costs' of not doing so! - It will confine the fire area, intensity and plethora of massive 'Costs' (*outlined above in 'Background'*) for 80+% of the fires ignited and perhaps closer to 95% of the 'damage' of the lightning ignited fires experienced in 2019-2020.

Fires not 'ignited' by lightning; comprise (20-%) of ignitions, have been caused by various ignition sources and reasons, but were also exacerbated in extent and intensity by Climate Change caused drought and volatile landscape, providing 'the setting' for ease of ignition and spread.

From my experience here this year, the majority have likely been from escaped 'back-burns' or 'control lines'. Back-burns/control-lines were pretty arbitrary and risky, on both public and private land during the 'Emergency' and often did not hold, creating new/extended fire-grounds.

Ignition by Arson has been reported as a much lower percentage this season. I suggest, because many residents went to evacuation centres and were not allowed to return for some time. Fires that started after their return, may well be a form of arson, with some burning to blacken around their houses. (*This occurred with the fire here and was reported, but without solid evidence prosecution was not possible. - One does not stop to take photographs when a fire rapidly approaches your house!*)

These 20% of fires also escaped from 'immediate' detection, effective response and later prosecution because resources were overwhelmed by the expanded lightning-ignited fires. Had the main fires been extinguished early, many of the non-lightening fires would not have warranted being ignited by back-burns or control-lines. Even so; during that time there would still have been fires but the RFS and other fire-fighting resources may have been able to handle the reduced amount?

In these non-lightening ignitions; again, need immediate detection and extinguishment, before the problem escalates; and repeat:

- § Ensure rapid detection and identification of the location and scenario.
- § Ensure the local 'First and Immediate Response' capabilities and the fire is totally extinguished ASAP.

Usually these are in accessible terrain so, resources need to be more land-based and locally focused and likely can be handled by RFS volunteers and public lands fire-fighting resources; in a well-resourced 'normal' mode; with back-up as needed to really 'black-out' the fires.

3. 'Climate Change' is the cause and 'The Fires' are a symptom: And without addressing Climate Change; such extreme droughts, fires and floods etc will become increasingly common and intense. As said: Climate Change created the 'Setting' for ease of ignition, extent, intensity of the fires, with resultant costs. (*As relayed above, by experts and RFS Chiefs at the time.*)



It is ironic and equally catastrophic that, as a symptom of Climate Change, The Fires...

- § Emitted some 500 million tons of CO² into the atmosphere; adding to the root-cause of Climate Change, from the fires.
- § Destroyed forests and trees; that absorb and store CO² and release Oxygen, reducing Climate Change impacts. This came from; about 5.5+ million hectares being burnt, some 2,500 homes destroyed and a further 1,000 damaged.
- § Released a plethora of 'pollutants' into the atmosphere from burnt objects such as plastics, tyres, paint, furniture, mattresses, gas bottles, CCA from power-poles etc. (I believe, these remain not assessed or published.)
- § Smoke from the fires experienced in 2019-2020 was smelt and impacted on New Zealanders.
- § The entire southern hemisphere showed signs of particle pollution on satellite images and from atmospheric readings.

I am unsure if the Australian and NSW fire emissions of 2019-20 will be factored into the 'Agreements' and 'Targets' as they should be: Though doubt they will be, with current Government thinking. The irony is that, the Bushfires have significantly contributed to the cause of them – Climate Change!

Additionally; as a knock-on effect, all the destroyed assets (houses, furniture, machinery, electronic goods etc.) will use more energy, resources and emit more green-house gasses to replace them.

'Climate Change' (or *Global Warming*) needs to be halted and reversed immediately and holistically; or else Bushfires will continue to add to 'the cause' of more and intense bushfires and continue the spiral.

With the catastrophic sequence of intense drought, Bushfires and now Coronavirus causing massive economic damage: It is timely and vital to invest stimulus works and infrastructure that minimises carbon emissions and pollutants and builds a safe, sustainable, liveable and productive environment and economy. *(There is a holistic symbiotic relationship between; environment, food production, sustainable living and the economy, which is often overlooked. All need to be healthy to sustain life, as we know it.)*

We/Society, local & global, must resolve Climate Change to reduce 'the setting' for bushfires to ignite, so readily spread and become a bigger and costly problem. Sadly, Climate Change will take longer and require global Political Will to resolve!

I hope and trust; any recommendations from the Inquiry that addresses (the cause) Climate Change issues will be greatly supported, even as a first step. - But please make it a big one!

4. Conclusion to: The cause and factors contributing to the fires and their qualities

- § In the immediate to short term: Fires must be identified/located and completely extinguished as soon as physically possible; one strategy for inaccessible or hard to access areas and another for accessible areas.
- § Longer term: Climate Change must be reduced and reversed so the setting for these catastrophic events is minimised.

The opportunity costs of adopting these, is suggested to be far less than the cost of maintaining the status quo. - If these recommendations/suggestions are not implemented or the issues not fully addressed; The Costs (*outlined in Background above*) for community, environment, society and economy, will repeat and increase.

The above addresses the cause ignition and spread of fires to severely reduce the threat to community assets ToR 1. The below concentrate on confining and containing planned fire sources to asset protection and Asset Protection Zone management.

5. Other Fire source and Issues include:

- § Hazard reduction burns: which are usually only effective for 1 to 2 years in reducing fuel load and are suggested to be regularly done around APZ assessed areas of assets only. - Not in the broader landscape. These are recommended to be 'Permit required' all year round, assessed/approved and carried out with local RFS presence for back-up. Permits can be revoked or postponed should conditions change. Other methods of APZ management around assets such as clearing, mowing, slashing of highly flammable fuel should be preferred.



- § Windrow and debris 'pile burning': These are also recommended to be 'Permit required' all year round, assessed/approved with conditions, (such as, adequate earth breaks installed or water to hand) and carried out with local RFS presence for back-up. Permits can be revoked or postponed should conditions change.
- § Arson and 'Tossers': This will always be present, though there should be a nexus and coordinative liaison between 'mental health' departments and the RFS Fire Control with regard to locations of repeat arson suspects.

6. Governance - Bushfire Planning 2006, APZ assessments and Building Codes: It is very difficult to get a uniform, State-wide or even Regional set of assessment guidelines that effectively considers each site. Proven by the fact that house and asset damage has proven to be highly unpredictable. In the 2019-20 fires, and others prior; some houses/assets that were classified as weak survived and others classified as strong did not. It was not consistent with expectations. *(Possibly due to wind, speed, direction, time of day, preparedness and flame travel etc. variants at the specific point in time?)*

This indicates Governance with these controls are not 'specifically' effective: Therefore, Insurance providers and Government should not be 'definitive' in assessing risk and premiums etc from 'compliance' with the Acts, Assessments and Codes; as they are only 'generalisations'.

*(As a related aside: I, as a Landscape Architect, was once instructed by a Local Council Ecologist to plant *Impertia cylindrica* (Bladey Grass) in an APZ between a NSW State Highway and a Residential Sub-division. I declined due to 'extreme flammability'. - Unfortunately, it has established in the APZ anyway, endangering lives, houses and assets. Can this irrationality be controlled? - Unlikely.)*

Governance, Regulations and Codes need to be 'site specific' to the assessment of threat which, given the variances of fire-threat, is virtually impossible.

This again supports the Recommendations above:

- § Ensure rapid detection and identification of the location and scenario.
- § Ensure the local 'First and Immediate Response' capabilities and the fire is totally extinguished ASAP.

Thank you for the opportunity to provide this submission and should you have any queries, clarifications or wish further information or discussions, please contact me at any time.

Yours Faithfully,



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