



CLARENCE ENVIRONMENT CENTRE Inc

87-89 Skinner Street

South Grafton 2460

Phone/ Fax: 02 6643 4611

Web site: www.cec.org.au

E-mail: admin@cec.org.au

SUBMISSION

to the

New South Wales Independent Bushfire Inquiry

Compiled by John Edwards

(Honorary Secretary)

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Introduction

The Clarence Environment Centre (CEC) has maintained a shop-front in Grafton for over 30 years, and has a proud history of environmental advocacy. The conservation of the Australia's natural environment, both terrestrial and and marine, has always been a priority for our members, and we believe the maintenance of healthy ecosystems and biodiversity is of paramount importance.

Without doubt we see climate change, and the consequential increase in bushfire intensity, as the single greatest threat to biodiversity on planet Earth, and nowhere is that threat greater than in Australia.

Because our organisation operates primarily in the Clarence Valley in north eastern NSW, the following comments are focused on that district where, historically, over-burning by way of high frequency fire regimes by cattle farmers has been the highest in NSW, and possibly Australia.

We would like it noted that the author of this submission is not only an ecologist, but was a member of the Rural Fire Service for about ten years, During that time he held an Advanced Firefighter's Certificate, and served as Brigade President and Deputy Captain for 2 years before retiring, and then sat for 3 years on the Clarence Valley Bushfire Management Committee. Therefore, he can claim to have a sound understanding of the complexities of managing fire in the environment.

Discussion

2019 was reportedly the driest ever year in the Clarence Valley with well under 500mm of rain recorded in most areas, where the average is closer to 1100mm. The severity of that drought was exacerbated by the fact that the previous year also saw around half the average rainfall. However, the fact that the summer of 2018-19 was the hottest ever recorded in NSW, and 2019-20 the second hottest ever recorded, ensured that bushland was tinder dry, at levels never seen before, so fire danger levels were extreme long before they were actually declared.

Fire danger levels should have been rated as extreme in winter, which was confirmed in July when a bushfire erupted south of Grafton. That blaze burned out of control for days across Kangaroo Creek, Lanitza east, Lanitza west, Kungala, Qyarigo, and the Halfway Creek areas before being put out.

In late July, following that blaze, the C EC wrote to the NSW emergency services Minister, begging him to take control of the situation. We finally received a response from the Minister's office, informing us he had forwarded the letter to the Rural Fire Service. We heard nothing more!

With less than 50mm of rain falling during the winter of 2019, the RFS announced the bushfire permit season would be brought forward to 31st August, triggering the annual flurry of 'burning off' by graziers to beat the end of month deadline when permits would be required. These late winter burn-offs are traditional in the Clarence Valley and elsewhere along the NSW and Queensland coastal districts, and are generally lit with no control strategy in place other than letting it burn to the nearest road or river where it is hoped they will go out by themselves.

So when strong westerly winds blew up on 23rd August 2019, the entire tinder dry north coast of NSW and southern Queensland erupted into flames, sparking a bushfire catastrophe of unprecedented proportions. That emergency continued to rage unchecked for 5½ months, engulfing most of eastern NSW, Victoria, South Australia and even parts of Western Australia, and only extinguished in the eastern states when substantial rainfall fell in mid February 2020.

In the face of multiple human fatalities, thousands of homes and structures burned, not to mention the unimaginable loss of wildlife and some total ecosystems that will never recover, this Royal Commission was announced. However, it should not be forgotten that the multi-billion dollar cost of this catastrophe, and ongoing costs of the Inquiry, and the financial and psychological costs that have been incurred, are not borne by governments and insurance companies as politicians would like us to believe. Ultimately they are borne by everyone of us through taxes, insurance premiums, and personal trauma of those whose lives and livelihoods have been destroyed.

Global heating, and the need to address the bushfire threat.

Background

When is the right time to talk about this season's bushfires and their connection to climate change? From the outset, those who dared to make that connection were 'blasted' by right wing politicians and the media. Senior government officials were ducking for cover everywhere, refusing to talk about climate change, with the current National's leader declaring that those trying to, as he put it, "score political points" by mentioning climate change when people are dying, were a national disgrace. However, a low point was achieved by his predecessor, Barnaby Joyce who declared that those who had died in the Waitaliba fire were probably Greens or Labor voters. If that comment wasn't a national disgrace, it has to be rated pretty close to it.

Now that this Inquiry is being held, we **will** make that connection by reminding, as we're sure many others will do, of the decades of warnings that have been issued by scientists, climatologists, and also economists from across the world. Sir Nicholas Stern, reporting for the British Government, famously concluded that the cost of inaction on climate change would far exceed the cost of action required to prevent catastrophic climate change. Those same conclusions were reached by Australia's Ross Garnaut when undertaking the same assessment for the Australian Government.

Today, following this season of catastrophic bushfires, the anger in the community is palpable, and well justified if you look back just a decade to 2009. That was when a CSIRO led consortium, commissioned by the then Rudd Government to help **increase our understanding of the complex interactions between climate change, fire regimes and biodiversity for future fire management**, presented its report.

The multi-disciplinary team of scientists, in consultation with State, Territory and Commonwealth agencies, was led by Dr Richard Williams, identified the drivers of fire regimes in Australia, changes to fire regimes projected from climate change, and the broad implications of these changes for biodiversity. It defined 'Fire regime' as "*the history of fire events at a point in the landscape*, concluding that: "**fire weather will become more severe in many regions, particularly southern Australia**".

The consortium developed a national framework to assess the likely impacts of climate change on fire regimes and biodiversity for different bioregions, using a case study approach, concluding that:

- *Modelled climate projections show that much of southern Australia may become warmer and drier. **This modelling suggests that, by 2020 , extreme fire danger days in south-eastern Australia may occur 5 to 65 per cent more often than at present.***
- *For example, modelling of climate change impacts on the fire regimes of Australian Capital Territory (ACT) landscapes predicts that a **2°C increase in mean annual temperature would increase fire intensity by 25%, increase the area burnt, and halve the mean interval between fires in the ACT.***

- *Climate change is expected to have greater effects on fire regimes in regions where fire weather factors like temperature and wind strength determine fire occurrence and fire intensity. These are regions such as the temperate forests of the south-east and south-west of Australia. Climate change is expected to have less effect on fire regimes in places where fuel levels or ignition sources determine fire occurrence and intensity, such as northern tropical savannas, and*
- *Managing fire regimes to reduce risk to property, people and biodiversity under climate change will be increasingly challenging*".

From that point on, instead of the task of tackling climate change being taken seriously, the entire issue became intensely political, and divisive. Tony Abbott famously took office as Prime Minister in 2013 on an anti carbon tax platform, and immediately 'waged war' on climate change science.

On 16 September 2013, he abolished key ministerial positions of climate change and science. On 19 September 2013 he abolished the Climate Commission, and on 23 October 2013 denied there is a link between climate change and more severe bush fires, accusing a senior UN official of "talking through their hat". Then on 8 November 2013, in a move that is difficult to be seen as anything other than vindictive, he cut 600 jobs at the CSIRO.

Six and a half years later and that divide remains, but in recent times politicians have become even more divided on the issue of climate change. No longer is it simply a Labor – Coalition divide, elements within both camps are divided over whether, of all things, to build more coal-fired power stations. What on Earth is wrong with them? Do they still not get it?

Action 1. Climate change science has to be acknowledged across the political divide, and immediate steps must be taken to combat the emerging problem by every means possible. That action must aim to reduce greenhouse gas concentrations in the atmosphere, not simply adaptation to higher global temperatures.

What went wrong this fire season?

The first question that needs to be answered is, given the flammable nature of the bush-land across the region as far back as July, why was no ban placed on the lighting of fires. At that time landowners didn't even require a permit. The Clarence Environment Centre, by our action of writing to the Emergency Services Minister in July, highlighting the looming problem, showing that we at least understood the gravity of the situation, **so why didn't the supposed expert specialists?**

As a result, when the announcement was made to bring the fire permit season forward, all the usual suspects started dropping their matches, and the rest is history. Fires erupted across the country, and the emergency services were completely overwhelmed. Some of the fires in less populated areas such as state forests and national parks were allowed to burn unattended, sometimes for months.

This should in no way be translated as criticism of the emergency services; their efforts were nothing short of heroic, with some making the ultimate sacrifice. **The reality is the situation should never have been allowed to arise in the first instance.**

The situation worsened through October and November, peaking further south in December to early February. However, following periodic lulls when temperatures dropped slightly and conditions eased, we repeatedly received announcements of total fire bans being reimposed, accompanied by the warning that *"all fire permits would be cancelled from midnight"*. **This begs two questions; firstly why, when so many fires were still uncontrolled had the total fire bans been lifted? And secondly, given the RFS had been unable to control so many fires since they had started months earlier, why had any fire permits been issued at all, and why were they still current?**

Environmental consequences of high frequency burning

The ecological impacts of fire are well known, starting with the loss of hollow-bearing trees, and with a hotter, drier climate those hollows are becoming an increasing liability (Note: lower humidity even without changes in rainfall, lowers moisture content in vegetation).

These latest fires took down hundreds of thousands, possibly millions of hollow-bearing trees; trees that will take over 150 years to replace, and their demise will be matched by the loss of a large slice of our hollow-dependent native fauna. Possums and gliders, Micro-bats (I believe there are more than 20 species of bats on the north coast alone), Goannas, and other reptiles, large forest owls, cockatoos, and most other members of the parrot family, along with Kookaburras, Dollar Birds and more; and all will face an uncertain future.



Fires have always taken a toll on older trees, but these fires were different. Post fire surveys of damage to the CEC's bush regeneration work sites, noted huge numbers of habitat trees that had burned from the top down, leaving a bare trunk to where the first fork occurred, with the tree's crown lying scattered across the ground (see image at right). These appear to have been triggered by sparks igniting dead leaves, twigs and bark caught in the forks of branches, or inside hollows, and the moisture levels in the living tissue so low that they simply burned alive.

On the NSW north coast, much of the fire that occurs is the result of “burning off” of bush-land to promote fresh green grass shoots for livestock to eat. While this strategy might work for a decade or so, over the long term the degradation of soils through the burning out of humus, leaves the landscape looking more like a beach than a forest floor, and eventually nothing will thrive there. The repetitive burning also results in the local extinction of species that require 5 years or more to flower, as they simply run out of seed bank.

Gallery rainforests along creeks and gullies are nature's fire breaks. They can withstand periodic fire, and do grow back in time, but that pause before another fire needs to be 30 - 40 years, not 4 or 5 years as is happening now. As a result, these rainforests are disappearing, leaving nothing but eroded 'drains' which provide no resistance to fire whatsoever.

We've barely scratched the surface describing the damage caused by too frequent fire, not the least of which is the human health impact and even loss of lives through air pollution, the loss of homes and infrastructure. All of this is getting worse and we need to seriously deal with the problem.

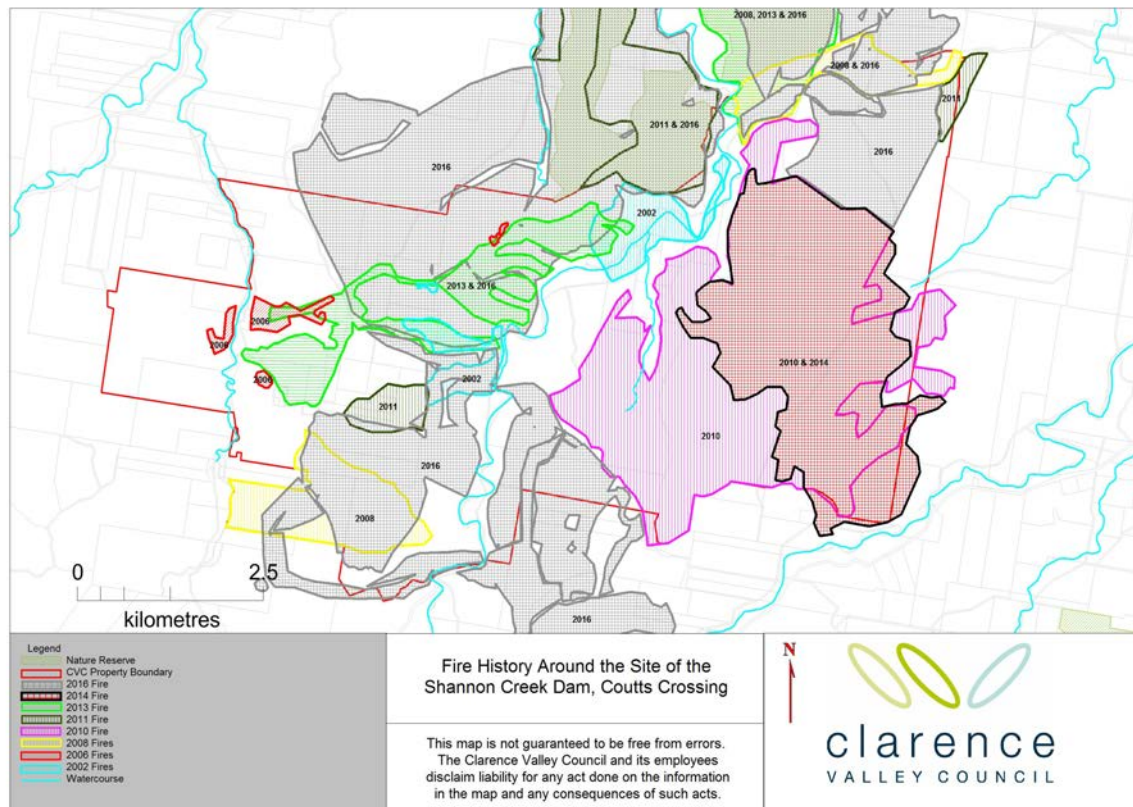
Unfortunately, over the years many environmental issues have clashed with commercial interests to the point where bipartisanship is almost impossible to attain on anything, with opponents taking in-principal stances to oppose anything put forward by their 'opponents'. However, we strongly believe the dealing with this threat transcends politics and demands a bipartisan approach.

The required response

One lesson we have learned from this catastrophe is that **governments need to formulate a rigorous long-term strategy to manage the bushfire threat**, which was something recommended by the CSIRO a decade ago. The Clarence Environment Centre's representatives also met with local Member, Chris Gulaptis, in August 2019 trying, unsuccessfully, to impress on him the need for such planning.

Since the fires, there are strident calls from certain sections of the community suggesting there needs to be more hazard reduction burning to reduce fuels. This is a simplistic argument, generally espoused by those with little or no fire-fighting experience, and who have absolutely no concept of the critical importance of maintaining biodiversity levels.

The fact is there is already too much burning is demonstrated by the following fire map of the Clarence Valley's Chambigne Nature Reserve which has experienced 9 fires since 2011. This is typical of most of the national parks' estate in the valley. **Note: The 2 latest fires, that raged across the region last August and November, have yet to be added to the following map.**



It is our strong belief that any 'knee-jerk reaction', such as answering the calls for more hazard reduction burning, must be avoided. In fact there is a mass of scientific evidence proving that too



A recently burned state forest north of Grafton, showing the dense stand of regrowth which has added to the forest's flammability.

much burning not only destroys and degrades biodiversity. but actually makes the landscape more flammable, and therefore we need less fire not more.

In this respect, the timber industry must shoulder much of the blame. In state forests and on private land logging intensity has increased significantly over the past 25 years, as demand grows and harvested trees become smaller as a result of over-logging.

When forest canopies are opened up, with as much as 75% lost, the additional sunlight at ground level promotes a vigorous regrowth of pioneer species that sometimes form an impenetrable barrier (see image at left) and increasing the forest's flammability.

We firmly believe governments can no longer rely on ageing volunteers, and need to **immediately establish a highly trained, fully resourced, professional fire-fighting service, responsible for all hazard reduction, with rapid response capabilities using modern surveillance technology, to ensure fires are rapidly extinguished and not allowed to rage out of control.**

In terms of hazard reduction, we believe this should be minimised, concentrating on asset protection and safety of residents. It should not be broad landscape burning, and should only be done by trained professionals whose responsibility is to ensure it is properly extinguished.

Fire management plans should be prepared and consideration given to fauna species known to occur across the proposed burn area. Most arboreal fauna can either escape from fire by flying away, or sheltering in tree hollows which are naturally insulated. However, one exception is the Koala, so **especial care must be taken when conducting hazard reduction burns in Koala habitat.**

The following comments from the Clarence Valley Council's KPOM are relevant:

“Fire management within koala habitat is complex due to the need to ensure the risk of hot crown fires is minimal, while maintaining enough intensity to not alter vegetation floristics (Turbill 2003; DECC 2008). Controlled fires can directly affect individual koalas, as they often remain in the trees when hazard reduction burns take place (DECC 2008). Furthermore, individuals can be affected through contact with burnt lower portions of tress (DECC 2008). Indirect impacts of controlled fires are primarily through inappropriate fire regimes (e.g. regular low intensity fires), which promote fire-retardant shrubby species and reduced eucalypt growth

Large fires in Bundjalung National Park are thought to have impacted on the Iluka koala population through reduced migration and genetic diversity (see Section 1.5.7).

Fire frequency is thought to be the main threatening process in the Woombah area, with records since the 1960s indicating a major fire occurring on average every 5 years. The current knowledge of fire impacts on free ranging koala populations (Melzer et al. 2000 cited in Phillips and Forsman 2002) suggests that this fire frequency exceeds that required to maintain koala population viability in the area.

The Woombah koala population is in danger of becoming extinct due to too-frequent fires in the area over the past 30 years.

2.3.3.10. Fire management

(a) Minimise fires within koala habitat areas in the Woombah and Ashby localities.

(b) Koala habitat maps and desired management responses should be provided to all Rural Fire Service Stations. Within koala habitat areas, the following fire management guidelines should be followed to reduce impacts on koala populations: # avoid hot fires and crown scorchers; # the construction and maintenance of fire trails should avoid removing koala habitat trees, particularly Tallowood, Forest Red Gum, Swamp Mahogany and Small-fruited Grey Gum; and # mosaic burning is preferential to broad burning, so as to only affect the minimum area necessary to achieve the management objectives at any one time.

(c) All practical attempts must be made to immediately contain and extinguish wildfires within areas of koala habitat

Therefore, where Koalas are present, perhaps other hazard reduction methods should be adopted, such as mechanical slashing.

One thing we should be promoting is underground power lines, not just to reduce fires from fallen wires, something that will worsen as violent storms increase, but reduce the enormous fragmentation of habitat that results from overhead supply corridors.

We will still get fires, lightening strikes, spontaneous combustion, carelessly discarded cigarettes or pyromaniacs, so surveillance will be the key. Monitoring 24 hours a day will be crucial, so that within 30 minutes of sighting smoke, the first water bomber will be on hand to extinguish it.

We need to look at all causes of accidental fire, sparks from grinders, running of petrol/diesel driven farm machinery etc, and come up with solutions.

So as we stated at the outset, governments need to get really serious, really quickly. In our opinion things are already out of control, and many in the community feel likewise, including a lot of those fighting the fires!

In conclusion:

- Governments must act to reduce greenhouse gas concentrations in the atmosphere to reverse global heating, not simply adapt to a heating world.
- Australian governments must cooperate to formulate a long term fire management strategy, to a) protect lives and infrastructure, and b) our critically important biodiversity. This can only be achieved in the long term by reducing fire frequency.
- The strategy should immediately see the establishment of a highly trained, fully resourced, professional fire-fighting service, responsible for all fire-fighting and hazard reduction. This force must have rapid response capabilities using modern surveillance technology, to ensure fires are rapidly extinguished and not allowed to rage out of control.

We thank the NSW Government for this opportunity to comment,

Yours sincerely

John Edwards (Clarence Environment Centre).