## Your details

**Title**
Mr

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**Last name**
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## Submission details

**I am making this submission as**
Other

**Submission type**
I am making a personal submission

**Organisation making the submission (if applicable)**
na

**Your position in the organisation (if applicable)**
na

**Consent to make submission public**
I give my consent for this submission to be made public

## Share your experience or tell your story

**Your story**
I am a Forest Scientist (BSc (For.) A.N.U) with over 20 years of experience in the Forest Industry
I specialised in Bushfire Planning, Response & Recovery
I have worked for Forests NSW, Forestry Tasmania and the ACT Emergency Services Authority
I have been fully AIIMs trained to level 3 Incident Controller
I have attended a significant number of Section 44 declared bushfire events in NSW and Tasmania
I held the position of Chief Officer ACT RFS from 2004-2007 (immediately following the devastating 2003 fires)

I did not participate in the most recent fires along the east coast however, I wanted to impart my observations and concerns as to why things went so wrong based on the extensive experience I have in the Forestry, bushfire fighting and emergency services fields

## Terms of Reference (optional)

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The Inquiry welcomes submissions that address the particular matters identified in its Terms of Reference.

**1.1 Causes and contributing factors**
Summary Points
• Changing weather patterns and increased fuel loads
• The lack of strategic and targeted hazard reduction burning across the landscape
• The lack of broadscale active forest (Private and Govt owned) and National Park management of fuel loads
• Inadequate RFS capacity for strategic planning of suppression of large-scale landscape scale fires
• The reduction of forestry operations and operators across the state

Bushfire seasons, and the associated bushfires, along the east coast and inland have commenced earlier and become longer over the last two decades. The combination of warmer weather, extended drought and, in particular, soil dryness has resulted in considerably extended fire seasons compared to just over a decade ago.
While there was previously a break for fire-agencies from season to season and from region to region, there is now a continuum of fire-fighting effort throughout the year that is taking a huge toll on both human and mechanical resources.
Traditionally the fire season would vary from north to south and from east to west. When it finished in one part of Australia it would begin in another, giving crews a break and allowing resources to be transferred from one district to another, or even from one state to another. This has changed considerably over the last two decades with fire seasons becoming significantly extended, reducing the capacity for crews to adequately rest between seasons and the capacity to move resources from one area to another
Longer, hotter summers coupled with drier, warmer autumns and springs have seen the window for hazard reduction being significantly reduced
Control the fuel and you control the fire. Fuel load is the primary driver of bushfire intensity. Reducing the fuel load, reduces the intensity, the spread, the speed of bushfires and offers the opportunity to better control the fire. When fuel loads get above a certain threshold level the capacity to control and extinguish the fire are virtually lost.
For example, fuel loads in the Brindabella ranges to the NE of Canberra in the 2003 ACT fires were off the scale - with no hazard reduction having been undertaken since the early 1980's.
The Brindabella Lease covered thousands of hectares just inside the NE NSW border with the ACT. The lease was established immediately in the aftermath of the 1939 fires which followed the same historic "fire-path" into the ACT.
Frequent patch-work hazard reduction across the lease from 1940's onwards provided, not a fire break, but areas where the fires intensity was reduced and offered the crews an opportunity to mount strategic front-on attacks greatly reducing the fires spread at that point in the landscape.
Reduced intensity (thru reduced fuel loads) reduces the incidence of crown fires (reduced ladder fuels) and consequently greatly reduces spotting ahead of the main fire – further reducing the potential for the fire to spread
The lease was handed back over to NSW after self-government in the Territory in the 1980's, to my knowledge NO hazard reduction was undertaken across the lease area by the NSW NPWS from that time onwards – 2003 was just a matter of when, not if.
Hazard reduction (HR) burning is not however the silver bullet it is often made out to be. There are several reasons for this.
To reduce fire intensity HR needs to be both strategic and effective. Strategic in the sense that across the landscape the fire history and historic fire paths need to be considered to determine where the most strategic HR is undertaken, the size of the HR area, the forest type where the HR is to be undertaken and the timing of the HR.

Far too often, little consideration is given into how the HR area is to be ignited, the HR burning pattern and the outcome being required from the HR. You do not want to have scorched earth where all the undergrowth is razed,

nor do you want to have a HR so cool and ineffective that virtually no undergrowth is removed. Over the years I have witnessed hundreds of HR burns by agencies such as NPWS and RFS (and sometimes even Forestry) that have been so poor as to be totally ineffective and a waste of time. This ineffective HR continues to this day. So just because an agency has on its records vast areas of HR being "undertaken", if it is not effective you have wasted resources and time - it is the effectiveness of that HR that is quite often never measured nor considered.

That leads to another issue in that if HR is to be effective it is extremely resource hungry, requiring large amounts of (well trained) people and time. Agencies are simply not resourced to be able to undertake annual HR programs on a scale that would be effective enough to reduce the impact of major fires on a state-wide basis.

And if that's not bad enough news, the window for completing effective HR grows smaller every year through extended summer conditions that make HR potentially hazardous or conversely, extended wet spells that don't allow HR. Then add to this the overly burdensome regulations and approval processes required now by government agencies before you can undertake any HR and you have the most wicked of problems associated with why large-scale, effective HR cannot be carried out on a yearly basis.

I see a direct correlation in the most recent fires of northern NSW and the south coast with the gradual decline of the Forest Industry in those areas. This is not necessarily to advocate for reintroduction of active forestry operations in those areas again, but here is my reflection on why that decline has led to the most recent fires being so severe and so extensive.
It revolves around two key issues, fuel load and both the physical location and availability of manpower and machinery. I have discussed fuel load elsewhere in this submission.
Getting to a fire with suppression resources as quickly as possible goes without saying – it is the only way to keep fires from becoming lager and provides the opportunity to get them under control. On a blow-up day, the time lost in not getting to a fire early is crucial. A few decades ago, many of the forest areas of NSW would have a contingent of logging contractors scattered throughout the forest with heavy machinery always available. As soon as a fire was reported, those contractors and their heavy machinery resources could be quickly and effectively dispatched to that fire – with a good chance of getting a very effective earthen break around the perimeter of that fire.
Not only did these contractors have the machinery, they had the experience, knowledge and bush skills required. They knew how to guide bulldozers, graders and skidders through heavy forest, they knew about fire behaviour, they knew how to put a perimeter around an active fire. They were able to provide a rapid response (by virtue of their proximity), pinch out fire edges and delay the spread till more resources such as forest crews with water-based equipment could arrive. It didn't always guarantee that the fire could be extinguished but it did provide at least an opportunity.
With the demise and down-sizing of the forest industry across the state over the last two decades (The Carr Labor government of the 90's made an art form of converting State Forests over to National Parks, particularly on the north and mid-north coast, to garner votes from inner city voters) the amount of state forest and the number of logging contractors have significantly diminished. As such there is now not the available workforce, both contractor and State Forest, distributed across the forest landscape to be able to quickly respond to bushfires as they start.
Apart from fires that originate close to towns and depots, there is a considerable delay in getting resources to a fire from the time it is reported. From initial reporting, to assembling crews, deploying crews and resources, getting heavy machinery on floats, getting crews and machinery to the actual fire takes time, valuable time. This is particularly the case in remote areas where the majority of the more severe and large-scale fires originate.
I realise that on high fire danger days that all crews are on standby, and this is good when fires originate close to towns and depots. I also realise that fire-fighting aircraft are also on standby, but these aircraft cannot be everywhere and cannot always be close to the ignition sources every time – no matter how strategic you are with your placement, NSW is just too big an area and there are simply not enough aircraft.
In addition to all of this, the active management of large tracts of State Forest historically also involved the regular, low intensity burning of harvested areas, both to reduce fuel loads and encourage regeneration of seedlings. This management resulted in a mosaic patchwork of reduced fuel loads across the forest landscape that had the benefit of either reducing the intensity of fires as they came through or better still, providing a safe zone to be able to backburn from or directly attack the approaching fire. This reduced fuel patchwork no longer exists.
The considerable reduction of this active management across the forest landscape over the decades has made a significant contribution to the increase in fuel loads (and therefore bushfire intensity and spread) and the capacity to bring these fires under control quickly before they become too large and subsequently uncontrollable. I believe that this was one of a number of key factors that influenced the fire behaviour of the recent north coast fires

I might add, that the Victorian Government has just made the unilateral decision to end all native forest harvesting in the state by 2030 – you just watch their bushfire seasons go to custard from about 2040 onwards, and for the same reasons.
The double whammy to the state of NSW revolves around Forest NSW's complete downsizing of staff in many areas over recent years, in preparation for the sell off and privatisation of the plantation estate - a decision that was deferred immediately following the recent fires which destroyed large swathes of both native and pine plantation across the state.
The downsizing resulted not just in the loss of a large number of staff resources that would have been utilised in the recent fire-fighting efforts, but even more significantly in the loss of significant senior staff experience, forest fire-fighting experience that just cannot be replaced. Fighting fires in pine forests requires a specific skill set and considerable experience. While the RFS are well intentioned, unless specifically trained (which they would only get if they had a forestry background) the average RFS volunteer would not even know where to start fighting a fire in a pine forest – the outcome is now history.
As such, the unintended consequence of this downsizing over recent years was a diminished capacity of Forest NSW's ability to be able to adequately resource the experienced manpower required to fight their pine forest fires in the southern regions of the state.

**1.3 Response to bushfires**

Summary Points

- Inadequate RFS capacity for strategic planning of suppression of large-scale landscape scale fires
- Inexperience of RFS fire fighters in forests
- Inadequate control lines and fire breaks
- NSW Forestry downsizing
- Effectiveness of HR burning

From my extensive experience, the RFS are without peer when it comes to protecting life and property form bushfires. When the fire is at your back fence you really want the RFS crews there, as nine times out of ten they will save you and your property – that is not in question.

The RFS are not however land managers, they have little to no experience (although a fair bit now over the last few months) or expertise in strategically fighting fires on a large landscape scale, burning on multiple fronts, in multiple locations. They do not have the extensive training, education or understanding of how forest fires move through the landscape, over different fuel types and the myriad of factors (environmental, physical and meteorological) that can affect fire behaviour. A few weeks, or even a few months training cannot replace a four-year degree, studying all aspects of fire behaviour and years of experience. RFS volunteers and permanent staff often lack the localised forest knowledge that long-standing land managers would have on fire behaviour in a particular area.

The RFS have a primary driver – save life and property at all cost – nothing wrong with that.
However, forest and land managers have additional drivers. Those drivers include saving, protecting and where possible excluding fire from, valuable assets including;

- Timber – not worth much when its burnt (up to 30% of NSW plantation estate was destroyed and you'd still be counting the cost on the native forest timber)
- Wildlife – both common and particularly the rare and endangered
- Cultural sites – aboriginal and early European
- Catchments - to preserve both water quality and quantity

These factors create a significantly different emphasis and dynamic, with different drivers on the types of strategies and tactics that the Incident Management Team (IMT) employs on suppression tactics for the going fire. They provide a much sharper focus on limiting the extent of the fire as far as is practicable. By and large, weather conditions allowing, it tends to provide a more aggressive attack on the fire with a view to limiting its spread.

While this approach is not lost on the RFS, in contrast the RFS tactics generally tend to be more passive. With emphasis on life and property there is the tendency to fall back to secure, existing boundaries (main roads, power line easements, rivers) and either attack the fire from these or more likely back burn from them. Provided there is no life or property affected by this tactic, it can and often does work well.

However, it often greatly increases the size of the fire meaning more perimeter to patrol and more blacking out hotspots to do, and more crews and resources required – and when this is not done adequately or extensively or comprehensively, the next blow-up day sees the fire escape, from multiple ignition points. So, you then fall back to another secure boundary, light your back burn again, increase the size of your fire, again, and hope that you can black it out properly this time, before the next blow-up day. Provided there is minimal loss to any life or property then you may consider that a job well done, from an RFS perspective.

From a land managers perspective, each time we drop back I am losing more trees, more animals and more habitat. I am also concerned that the fire will get to a mega-fire size far too quickly and from that point all I can then worry about is life and property, only rain will put that fire out. As a land manager I want to keep that fire as small as I can for as long as I can. I want to put very wide bare earth dozer and grader lines around the fire edges and try and pinch the fire out. If I make a fire break I want to be able to ensure that the fire will not jump across that break.

Former colleagues inform me that many "breaks" that were put in during the recent fires by NPWS and RFS were totally ineffective. The ridiculous obsession with ensuring that every tree was sacred or possibly contained a possum or koala and therefore couldn't be knocked over resulted in numerous "breaks" that were so narrow that the tree canopies still touched each other from either side. Guess what, those breaks failed. And, of course the irony is that the very animals that they were trying to save were probably incinerated by the fire that jumped the break.

Remember too, that if this fall back scenario is repeated on multiple fires at multiple locations around the state, you have very quickly got a lot of large fires burning in a lot of areas, consuming huge amounts of resources and just hoping that the containment lines hold on the next blow-up day, which regrettably for many will not be the case – sound familiar? And we haven't even dealt with the inherent risk of heavy unburnt fuels deep within the containment lines showering ash and embers for kilometres (from 5 to 10 kms in the Canberra 2003 fires) and starting a fire well beyond the containment lines.

In addition, not all, but many RFS volunteers lack significant forest fire fighting experience. I witnessed this first-hand the Deputy Incident Controller of the IMT for Section 44 fires around Nowra in the early 2000's. I was struggling to understand why a number of key backburning objectives were not being met on a daily basis at some sections on the fire, when conditions were ideal (cool cloudy days and low temperatures). It transpired that the crews responsible were from far-west NSW. They had rarely seen trees more than three metres high, let alone a forest full of trees ten times that height. They considered back burning in this forest type was just far too dangerous for them to undertake and so they didn't. As soon as I found this out, I was able to swap them around with a crew that did have the experience - it was just a shame they couldn't have told me a few days earlier.

**1.4 Any other matters**

Large and ridiculously expensive aeroplanes do not put out major bushfires – well planned, strategic hazard reduction combined with effective fire suppression plans, well trained, competent and experienced fire crews, large machinery and back-burning do.

## Supporting documents or images

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