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I am making this submission as	Emergency services
Submission type	Personal
Organisation making the submission (if applicable)	
Your position in the organisation (if applicable)	
Consent to make submission public	Public
Your story	Taree, my long term home district was impacted by numerous wildfires during the summer of 2019/20. My workplace the State forests of the Hunter, New England and Mid north Coast was severely impacted by these wildfires. The timber industry in which I work has been damaged almost beyond repair and my role as a forester will not be the same again. As a practicing forester and fire fighter I was heavily involved in the recent fire fighting effort from the QLD border to the VIC border in both field command roles (DIVCOM) and in Incident Management Team roles. I have been a fire fighter for 21 years and have a degree in applied science forestry.
1.1 Causes and contributing factors	There are many interrelated causes and contributing factors for the 2019-20 fire season. The long term drought was the biggest contributing factor. Forest fires are always going start in more places and be more difficult to control when fuels are dry. We must therefore focus on the factors humans can control. These

are;

>fuel loads-fuel loads in forests of all tenures in NSW are generally at unacceptable levels due to reduced Hazard reduction burning in the landscape. Managing fuel loads only at urban interfaces and high risk zones, as promoted by many land managers, while ignoring fuel loads in distant vast forested areas is fundamentally flawed as fires that start and grow to be megafires in these distant forests soon become uncontrollable and eventually always impact urban or peri-urban areas.

>Fuel condition- long unburnt fuels are problematic not only because of the fuel loading but because of the arrangement and type of fuel present. Long unburnt forests on the East coast typically have laddered fuels eg well developed understory/vines which are consistent with crown fires. Regularly burnt forests have grassy understory which provides a natural break between ground fuels and canopy fuels therefore reducing the presence of crown fires, therefore enabling safer and more effective control. Ground fires are generally controllable by ground crews under most conditions. Long unburnt forests also have a higher incidence of dead stags and course fuels which makes it more dangerous and difficult to contain wildfires. Regular burning reduces these features in the forested landscape. Long unburnt fuels are also more difficult to hazard reduce with fire compared to regularly burnt fuels. Many people blame our climate for making hazard reduction burning windows increasingly narrow. I disagree entirely with this assessment as fuel condition has a much greater effect on burn windows. For example grass understory forest can often be burnt earlier in the burn season (winter on North Coast) and can also be burnt later in the season safely (late spring or summer on the North Coast). This is because grass fuels ignite easier in cool conditions and extinguish easier as they are more influenced by diurnal relative humidity changes. Reduced flame heights during hazard reduction burns also makes for a safer and more successful operation.

>Development adjacent to and within forested areas-Subdividing land and building infrastructure adjacent to forested areas not only reduces our resilience in wildfires but also significantly soaks up resources for fire fighting and hazard reduction burning operations. If people are going to build assets in forested areas they need to be prepared to defend them or lose them.

Construction of illegal dwellings in forested private lands is rife on the NSW Mid North Coast and many are built in difficult to defend places and to no building standards. Such dwellings tie up a large proportion of resources on the fires I was involved with resulting in fire being left to grow and impact more assets in the fire's path

>Lack of Maintenance of fire fighting infrastructure-Forest Roads, bridges, fire trails, fire dams are in serious need of maintenance and repair on all tenures ASAP. Fire fighting efforts were severely impeded by infrastructure that was in need of urgent preparation ahead of fires which cost time and resources. Many containment opportunities were lost or not attempted due to neglected infrastructure. An example of this is heavy plant required for earthworks to contain fires or protect assets could not always be floated in to where it was needed due to bridges that were in need of maintenance and had load limits on them

we have subdivided our forested lands and adjacent

1.2 Preparation and planning

Anyone who worked in forest environments particularly conducting hazard reduction burning could see the fire season ahead was going to be severe yet it was business as usual as far as preparation and planning was concerned. There was no noticeable effort to increase hazard reduction burning ahead of the season or affect any increase in property preparation or

infrastructure maintenance/upgrade. There was only the usual advice given to the public by the RFS which I find astounding. Even after the fire season kicked off in earnest and lives had been lost still very little physical work had been done in areas to the south which were in the obvious path of fires as the season progressed south.

NSW Fire agencies still don't have a single platform radio communication network. This issue has plagued multi agency fire fighting for decades. Technology is available to vastly improve the capture and sharing of spatial information both into and out of IMT's. Forestry corporation have a IPAD and GIS based system which is very effective. It is time other agencies got on board with this or similar. Having twice daily updates from linescan appear on a map on a field IPAD saved lives and assets on all fire I worked on

1.3 Response to bushfires	NSW is seriously under resourced when it comes to professional forest fire fighters capable of strategizing and implementing containment operations in forested terrain. RFS is essentially on non- professional volunteer fire brigade geared up to protect assets in a rural or peri urban environment. They are not skilled or equipped to deal with fires in complex and difficult terrain and they lack the knowledge of the forested landscape to develop strategies to contain fires in such landscapes. Their equipment is cumbersome on forest trails and their drivers are generally not skilled to drive appliances in such landscapes. Most of the damaging fires in NSW this season started and grew in forested landscapes and resources were quickly beyond capacity. RFS continued to focus on asset protection even when opportunities and resources were available to contain some of these fires ahead of worsening conditions. Lack of successful containment on all but a few fires is what caused so much loss. Fire fighting efforts were too focussed on aircraft operations and asset protection. Yes this important on the bad days, but on the not so bad days, where safe containment is possible using properly constructed mineral earth containment lines ahead of well planned and executed backburning operations, this must become a priority. Incident control centres established during the crisis were managing too many fires and too many resources. radio networks were jammed with too much traffic and chaos reigned. The landscape needed to be broken down into more manageable chunks and managed under smaller teams with more knowledge and control of the resources and the landscape they were managing. Incident control centres exist in most regional centres however only a percentage of them were manned and active.
1.4 Any other matters	NSW needs a permanent professional paid forest fire fighting agency capable of rapid detection, response and containment of fires in remote forested landscapes. Outside of fire seasons this agency must be tasked with managing fuel loads via Hazard reduction burning across the landscape, maintaining critical fire infrastructure, keeping a check on illegal and inappropriate infrastructure development on all tenures. Volunteer training and public education about fire safety would also be useful functions. RFS has dropped the ball on all of these aspects

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