

National Fire Fuels Science webinars

Wednesday 20 May 2020, 11am-12.30pm AEST

The practice of hazard reduction: what are the potentials and limitations?

Presenters:

- Dr Adam Leavesley, ACT Parks and Conservation Service
- Dr Valerie Densmore, WA Department of Biodiversity, Conservation and Attractions
- Ruth Ryan, HVP Plantations
- Dr Simon Heemstra, NSW Rural Fire Service

Questions and comments from the audience:

- ‘Residual risk’ in ‘safer together’ has promoted a false sense of security in the community. Prescribed burns are drying out the landscape, contributing to species extinctions and creating a scrubby fire prone environment. This is INCREASING the risk and the dept in Victoria is liable.
- “The association between testosterone and fires is something needing more research.” Professional forester Andrew Campbell, *Australia burning*, CSIRO, 2003. What do the panel members think of this observation?
- ACT - high intensity through planned burn or unplanned burn is still high intensity at some stage, so what is the actual benefit?
- Apart from the number of suitable days for burning, what are the major limiting factors to implementing adequate programs of hazard reduction burning?
- Can development of ‘staged burns’, candling in winter, fine fuels, and final ignition when available be utilised more fully to reduce risk or fire escape? Will this also increase the % of mosaic effect across the burning area? Can this be used to limit burn effects on flora and fauna?
- Does the CRC or any academic institution, research our natural fire reduction services? These are often killed off during planned burns across thousands of hectares. This includes the fungi, invertebrates, small mammalian diggers and scratchers, and lyrebirds which are prodigious scratchers and 'compost tumblers'. Planned burning never considers this - blanket burns are carried out regardless and could likely be increasing a forests flammability.
- Dr Densmore, how do you modify or adjust the moisture differential method given climate change is diminishing the differential? We saw this in the summer bushfires, riparian and

wet forest being burnt.

- Dr Densmore: you keep referring to 'low intensity' PB. But what about not-so-low intensity PBs, such as the November 2019 Denbarker PB?
- Dr Heemstra, how much effort is being put into learning from Aboriginal people about how they managed to control wildfires over thousands of years and put their knowledge into practice?
- Dr Heemstra, is potentially years to implement a prescribed burn an appropriate timeframe?
- Dr Heemstra: How far does a neighbour have to live from the fire to be notified? I ask because I was recently forced to spend a night away from my home by a fire over 40km away that was blowing ash over my home and smoke thick enough to make otherwise healthy people feel ill.
- Dr Leavesley you mentioned self-effacingly that one of the burns was not Parks ACT best implementation. As an RFS vol and council planner I struggle to get non-fire people to understand that HR burning implementation is an art informed by science and relies on a range of skills, communication, conditions etc. How can we better educate decision makers on this reality? How about making it easier to get senior management out on the fire ground during HR so they can get up close?
- Dr Leavesley, it appears as if prescribed burn reduced the severity and extent of the damaging fire. Did those low severity and unburnt areas provide habitat for flora and fauna?
- Dr Leavesley, recent prescribed burns may stop wildfire or make it more manageable, but what responsibility do you take with these burns for the resultant highly flammable regrowth?
- Dr Leavesley, surely you need to include wind differences north and south and topology, not just where you prescribed burn?
- Dr Leavesley, so what is the advantage of having burnt it in 2019 when now all is burnt anyway!?
- Dr Ryan: Given the number of bushfires begun intentionally or unintentionally by human activity, why are you so dismissive of reducing ignition sources as a way to reduce bushfires?
- Fantastic examples of the reduced intensity of a bushfire when it runs into and or through a planned burn. Given those excellent results what targets has the ACT set for planned burning in these forest areas moving forward?
- Fire perimeters graph (the USA fire exclusion vs Mexico) is very misleading. There are VERY different fuels and weather driving the fire size.

- Given RFS is a volunteer organisation, how has the organisation gone about supporting the brigades to deliver burns that are prioritised, and what interaction is there between the NSW fire services regarding delivery? Has there been an organisational shift in relation to the importance of delivering prescribed burns?
- Given the importance of fuel moisture and the current situation in Australia where groundwater recedes at unprecedented rates (e.g. Jarrah forest in WA) - how will this impact fire management? Should water management also be considered a central element of planning when thinking of fire prevention/management? (this includes land use deconfliction and catchment planning).
- Having different burn plans based on state borders seems very arbitrary, should we have a national plan that delineates between different environments rather than borders?
- How do we compare the homogeneity of an entire landscape treated with the same HR burn treatment plan to a landscape burnt by wildfire regimes?
- How do we determine meaningful and realistic outcomes for fuel management programs, given megafires will continue to occur and at greater frequency?
- How do you reconcile the concept that wildfire burns at a higher intensity through older fuel with growing evidence that old growth vegetation is of significantly higher importance to native fauna compared to young vegetation?
- HR burns are hot enough to significantly reduce soil moisture and only the very fast creatures manage to escape. However traditional mosaic burns of separate ecosystems are cool enough to retain soil moisture and creatures move ahead of the flame. Cultural burning also promotes the generation of fire-retardant species whereas hot fires regenerate flammable species.
- I don't think that asset protection and risk assessment in hazard reduction to reduce the risks of mega fires will ever improve with all the bureaucratic checklists that any prescribed burn has to meet. Agencies are so fixated on being seen to control PB responsibly that they either never will get the PB done or take years to plan. The weather on the actual day then determines whether a PB is conducted. We need to loosen up the bureaucratic controls over PB's.
- I hope that viewers appreciate the level of accountability and process that goes in to PB, this is very similar to Victoria.
- I think some of the audience is confusing hazard reduction with hazard removal. Even hazard reduction must be moderated with all other conditions and the results of preceding events. Fire will happen anyway, why not be in control of it and continue learning from outcomes? Is a valid aim to reverse the landscape condition which has resulted from 'recent' historical practices and emulate the conditions that existed beforehand? Would this result in maximum safety outcomes and environmental outcomes?

- If we understand FRB regimes are generally about reducing fuels to protect build assets, why are fire managers so reluctant to accept there is often an implicit trade-off for biodiversity values via fire regime change of these decisions?
- Is prescribed burning also expected to be effective for urbanised areas? Is the cost payable for households to do it themselves?
- It is my understanding that Traditional Custodians do not see a benefit in the way we currently carry out prescribed burns. Has there been any comparison between prescribed burns vs cultural burns?
- It seems in some cases there is no question posed but a statement or critique without substance based on opinion. Possibly the anonymous SME's can make themselves available next presentation series?
- It seems prescribed burns studiers are over focused on the short-term gain. But what is the long-term effect of prescribed burns? Isn't its regrowth which as we know from Phil Zylstra's extensive studies is highly flammable. Aren't prescribed burns locking us into a dreadful cycle of needing to burn everything every year? Why aren't we protecting unburnt areas and defending them to allow them to age and dampen?
- It's a given that mitigation needs a social license, and this is gained in the high loss seasons. How do we maintain public support in the quiet seasons?
- One problem with even very cool prescribed burns is the way fire often enters old trees with fire scars, often leading to them falling over (or having to be felled for safety reasons). Loss of this critical natural asset (habitat hollows) is a serious problem with these prescribed burns, especially if they are repeated within a few years. While we all want to avoid wildfire, is there a risk that our cure could be worse than the disease (in terms of biodiversity)? How can we do this better?
- PB and hazard reduction will allow communities of flora and fauna to remain in an area which then colonise the burnt sections after a mosaic burn regime. Large scale megafires totally eliminate every species, requiring decades for natural forest landscape to return.
- Perhaps Anonymous can explain what is left in a forest when a megafire burns through? The desire to protect the landscape and micro and macro organisms is paramount, but megafires eliminate everything in their path. Isn't it better to use mosaic fuel reduction to help prevent total loss of these, as well as human lives and homes that can't be defended from megafires?
- Prescribed burning dominates discussion and practice of fuel hazard reduction. Why are alternative methods not considered or examined more seriously? The effectiveness and impacts of prescribed burning continue to be debated, including ecological impacts, effectiveness of risk reduction, reduced climate burn window, cost and health impacts. There are other fuel hazard reduction strategies, however, these attract little consideration.

For example, mechanical hazard reduction targeting fine fuels adjacent assets, has also been shown to be an effective means of risk reduction.

- RE fuel moisture differential research. Has the impact of planned burns on the reduction of soil moisture been looked at?
- Regarding the Smokers Trail burn. The areas that were too wet to burn in the prescribed burn did burn in the 2019 fire. Wet areas are predicted to burn more readily with climate change. Are fire managers intending to take this into account with future planning?
- Ruth Ryan. How many hectares are prescribed burnt to reduce risk by 12% (74-62%)?
- Ruth, do you think that native and plantation forestry should be considered a viable strategy for strategically breaking up the landscape? Can we manage our landscape more effectively in this manner than we do currently?
- Should Victoria revert back to a hectare target for planned burning?
- So much talk about historical cultural burning practice and how well it was done at the moment. No doubt traditional owners were well established land managers. I think however we massively underestimate the role of lightening in the equation. Given that most of this year's fires were lightning ignitions and this is also historically true. Historical fires started by lightning during spring in north west Victoria would undoubtedly burn all summer unless they ran into previous lightening fires. I can't imagine inter-fire regimes were very long under a scenario of no lightening suppression.
- The BOM provides ventilation index data, which I understand is used in all states and territories
- The California vs Mexico comparison has a long history and has been discredited. Many other land use issues totally confound the issue. Comparing California and Mexico re: fire is problematic at best.
- There is no doubt that controlled burning will always be part of bushfire planning, the issue is that we are spending so much time on just this item we seem to have excluded all other options, why?
- Regarding other measures there are plenty. Ignition management, APZs, fire trails etc and the most important - getting people to prepare and maintain themselves and their properties.
- We have 100,000 years of science regarding the use of fire in the Australian landscape.
- What about sustainable forestry as a means of reducing fire hazard? It seems we are so focused on prescribed burning as the only means of reducing fire hazard.

- What has been missing in the discussion is the fact that prescribed burning is done within political, social and economic systems, all of which impact on when, how and where prescribed burning is undertaken, which impacts both the risk reduction and environmental impact outcomes. What is the difference between the 'ideal prescribed burning regime' and the reality? How does hectare requirements, changed governments, ease of burning in the same area with fire trails and amenable landowners, financial constraints, changes in public opinion, etc, change the way we burn?
- What research is currently undertaken to measure the respective impacts on biodiversity as a result of frequent planned burning verses the impacts on biodiversity values impacted by megafires?
- Why don't Australian fire management agencies just use the well-established Ventilation or Venting Index used in North America to minimise smoke pollution, rather than trying to model smoke movement?
- Why is there no considerations of town and land use planning? Critically separation distance between assets and fire-prone bush is vital.
- Great work everyone! Multiple types of evidence, informed debate and moderated discussion are important for democratic decisions in managing our forest landscapes.
- Many thanks for very informative, interesting and balanced webinars.
- Most informative webinar - thanks to all
- Thank you for a very balanced and informative series of presentations. Most appreciated.
- Thanks, looking forward to future webinars
- These webinars have been great, look forward to more on a variety of topics
- This has been excellent, thank you. Please do more!