

Forest Fire Victoria Inc.

Forest Fire Victoria is a group of forest and fire professionals who share more than 250 years of fire experience.

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IS DELWP'S "PERCENT BUSHFIRE RISK" PROTECTING VICTORIANS FROM BUSHFIRE?

**We cannot manage the weather, or when or where a fire will start;
the only thing we can manage to reduce bushfire damage, is the fuel.**

Background

In November 2015, the Government changed its approach to protecting Victorians from the threat of bushfire by revising the rationale for forest fuel management:

*"From 1st July 2016, our fuel management program on public land will be driven by a statewide target to maintain bushfire risk **at, or below 70 per cent of Victoria's maximum bushfire risk.**"¹*

A model was developed to calculate the spread of fires under extreme weather conditions and purports to calculate how spread and damage, primarily to built assets, will be affected by fuel reduction – "the percent bushfire risk". At this stage the model considers only the damage carried out by a single fire burning under extreme fire weather and does not consider fires that burn over an extended period or the effect of fuel reduction on fire suppression at lower fire dangers.

How the concept of "percentage bushfire risk" applies to managing the impact of high intensity fire has not been clearly explained. It is unlikely to reduce either the area burnt or the damage caused by high intensity wildfires. It may give communities a false sense of security from the wildfire threat.

Forest Fire Victoria Inc. is concerned by this approach because it confuses the traditional terminology of **Fire Risk** – *the chance of a fire starting*, and **Fire Threat** – *the impact a fire will have on natural and built assets*.

What does "percent bushfire risk" mean?

The maximum risk level of 100% bushfire risk represents "no treatment", with fuels at maximum density, implying that no fuel reduction or bushfires has occurred. Conversely, the minimal risk level of 0% represents the "fully treated" scenario, where fuels are reduced to minimal levels.

¹ *"Safer together - A new approach to reducing the risk of bushfire in Victoria"* published by DELWP
19 November 2015.

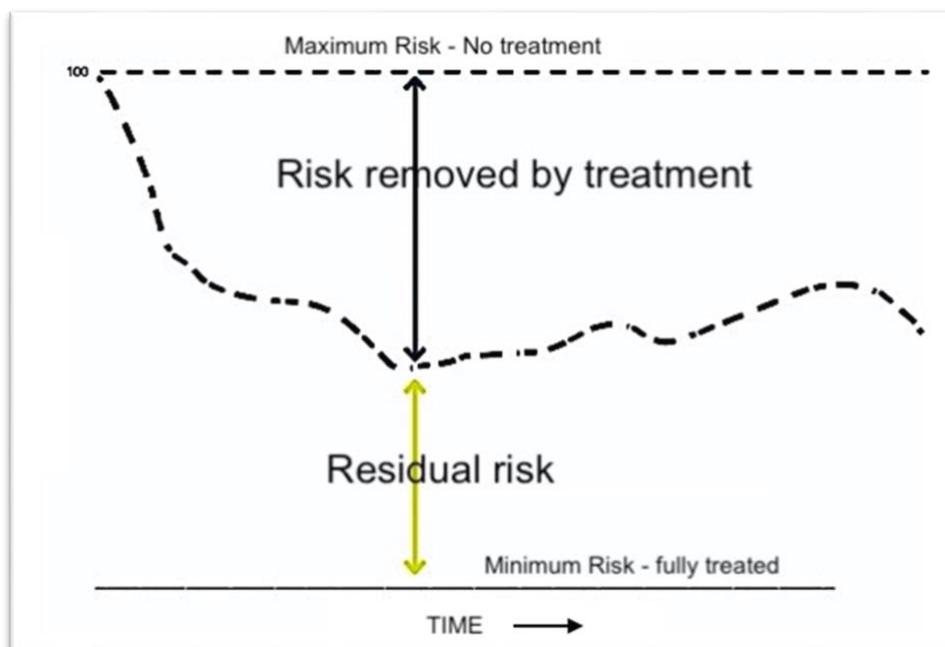


Figure 1: Measure of changing residual risk over time.

So “Residual Risk” changes over time, as shown in Figure 1, as bushfires occur and the fuel management program is implemented.

What is the optimal level for Residual Risk?

As Residual Risk sets the level for the fuel management program on public land, there is a choice to make about the percentage required to secure safety from bushfire. DELWP engaged an unidentified ‘expert’ group, who determined that **70 per cent Residual Risk** was the right level for the Victorian landscape statewide. The rationale has never been subject to peer review, or publicly released.

As the safety of rural Victorians depends on this setting, Forest Fire Victoria Inc continues to call for the release of the expert report and DELWP’s modelling. There has been no response to our requests.

Does Residual Risk keep Victorians safe from bushfire?

The Residual Risk at any point in the landscape is said to be related to the -

- types and arrangements of vegetation,
- topography and climate,
- location, extent and density of communities and assets,
- bushfire history and
- quality and extent of programmed works by DELWP.

While DELWP has set different targets for each of its six Regions, varying from 66% (Loddon- Mallee) to 80% (Port Phillip), these are averages applying to large chunks of public land; a broad-brush approach that cannot account for all of the variations in Bushfire Risk that confront Victorians at the local level.

What are the current levels for Residual Risk on public land?

Notwithstanding that public forests cover one-third of the State's area, and are amongst the most severe bushfire environments on the planet, DELWP does not publish the targets for, or reduction achieved by its Bushfire Risk fire program.

So not only is the Department secretive about the rationale for the level of Bushfire Risk, it refuses to release information about work in progress. As this flies in the face of the public interest, Forest Fire Victoria Inc will persist with its efforts for public release of this information.

The public face of Bushfire Risk.

The concept of residual risk was supposed to provide a measurable "metric" and avoid the use of the fraction of the estate burnt which is the case elsewhere. For example, 66 years of data of fires in 2.5 million ha of managed forests in South West WA² show that the fraction of the estate treated by prescribed fire can be related to the fraction of area burnt by wildfires (see Figure 2).

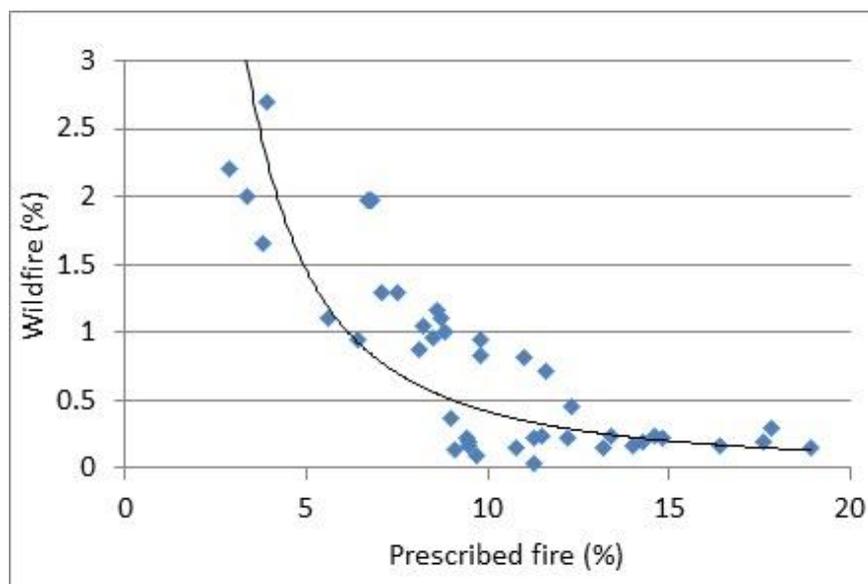


Figure 2: Relationship describing the annual area of the burnt by prescribed fire and the resultant area of the estate burnt by wildfire expressed as an average of the area burnt in the 5 years following treatment.³

The graph shows that when the area burnt by prescribed fire falls below 8% per year, the percentage of the estate burnt by wildfire rises rapidly. This was the level of prescribed burning recommended to the 2009 Victorian Bushfires Royal Commission, and downgraded to 5% minimum in Recommendation 56.

This concept is easily understood by the general public. The two approaches are not mutually exclusive and a rolling target 'is useful for measuring performance and holding organisations accountable'

² Annual reports, Department of Biodiversity Conservation and Attractions 1951/52-2017/18

³ Neil Burrows and Rick Sneeuwjagt, The Bushfire Front Inc., Perth, Western Australia

The DELWP plan for fuel management based on 'Residual Risk', published in the Alpine and Greater Gippsland Strategic Management Plan is shown in Figure 3. The orange and red shaded areas indicate the focus of fuel reduction in this area to protect various assets.

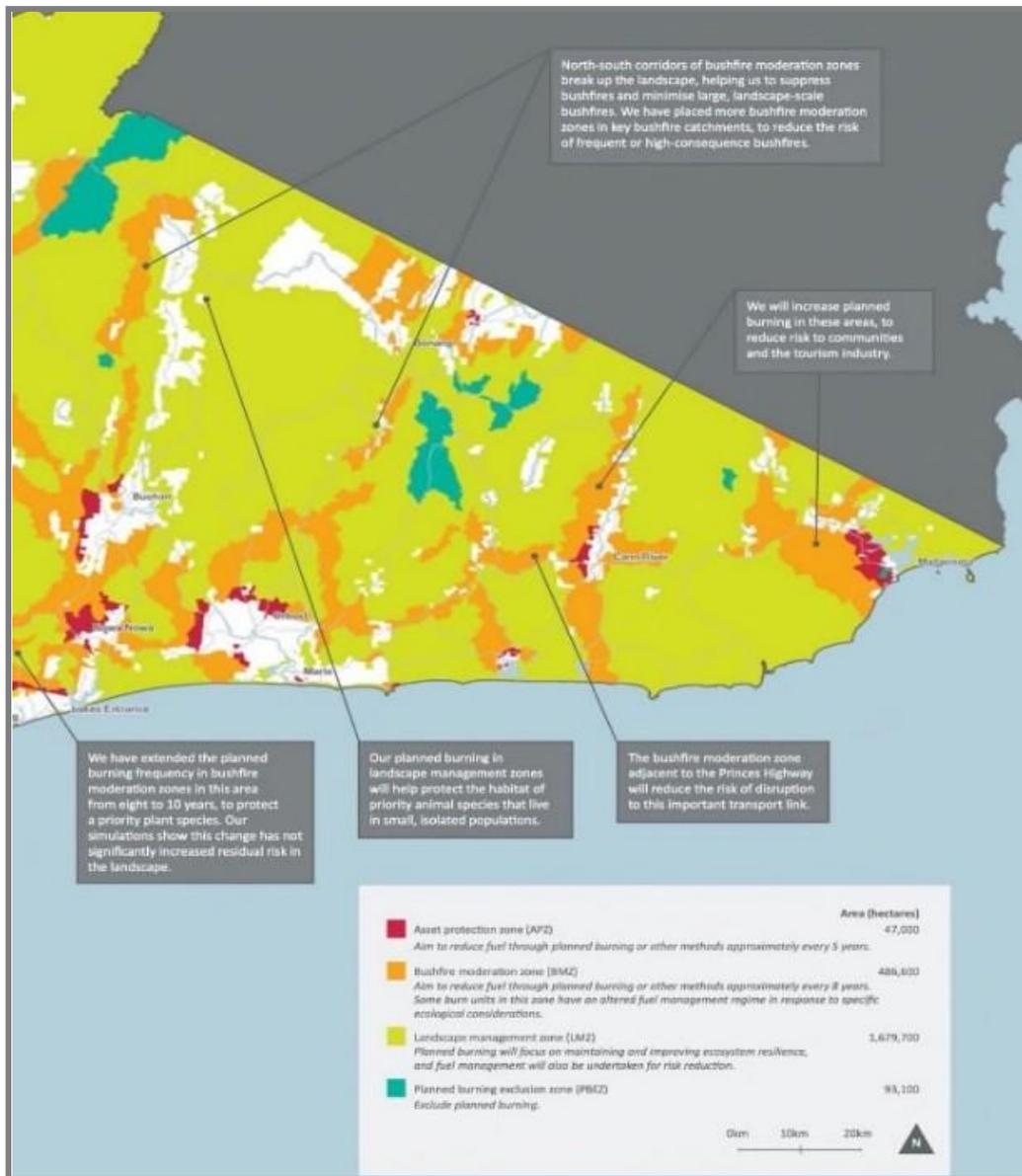


Figure 3: Fuel management strategy, Alpine and Greater Gippsland Strategic Bushfire Management Plan p.16

The extent and quality of protection work achieved in these areas is not known, since DELWP no longer publishes its fire program performance information.

On the other hand, a statistic that is on the public record is the extent of bushfires in this area during 2019/20 fire season, shown in Figure 4. In addition to catastrophic damage to the public land estate, these fires caused significant stock and property losses and traumatised the residents of the entire East Gippsland area.

They were started by lightning strikes on public land!

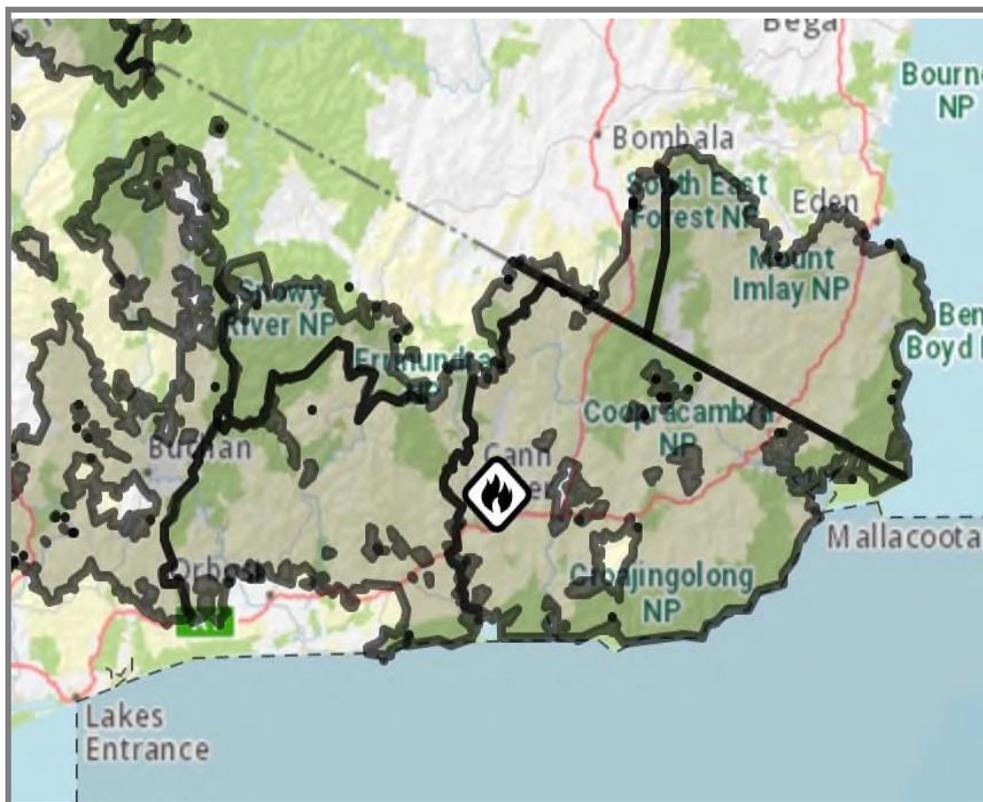


Figure 4: Area Burnt 2019/20 fire season

Source: Emergency Management Victoria online map May 2020

Bushfire Threat

The Bushfire Threat at any point in the landscape refers to the impact a fire will have on the natural and built assets. It relates to the intensity and duration of the fire which in turn depends on the speed of the fire and the fuel consumed. The basis for planning to prevent loss of life and damage to assets should consider the direct threat of a fire burning under the worst possible conditions, rather than the probability of a fire occurring.

Hot dry winds, periodic drought, and dry lightning strikes mean that multiple bushfires are inevitable in Victoria's public lands. Fast moving and destructive fires of high intensity are possible when the bushfire threat is under-estimated as demonstrated in Figure 4. This leads to a proposition that fuel levels must be managed across all public lands in a graduated way, so that protection for assets is backed up by fuel reduced barriers to slow remote and less distant fires and reduce the generation of embers.

Initially it will be more difficult to meet planned burning targets to reduce the threat of landscape scale fires, because many areas are carrying huge fuel loads, including large areas burnt since 2002. Neglect in reaching fuel management targets over several decades has exacerbated the problem.

FUEL MANAGEMENT PROGRAMS MUST BE RELATED TO THE POTENTIAL FIRE INTENSITY AND THE LIKELY DAMAGE TO THE COMMUNITY, NOT SIMPLY TO AN ARBITRARY VALUE OF RISK.