Logging practices elevate wildfire risk on public land

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Logging practices in State forests are elevating wildfire risk.

The Melbourne Water Catchment Network (MWCN) and Otway Ranges Environment Network (OREN) have written submissions[1] to the Bushfire Royal Commission regarding the following critical issues.

1. Over the past two decades one in 20 wildfires have been started by logging industry practices in State forests.

2. Scientific research has already shown that regrowth after clearfell logging in wet forests is drier and more fire prone than unlogged forests. This issue has been raised by fire experts in the Bushfire Royal Commission.

3. Historically, resources have been diverted away from fuel reduction burns in favour of burning off clearfell logged areas in State forest to promote regrowth.

4. Rainforests can act as natural firebreaks in moderate to low fire conditions. Logging inhibits the ability of rainforest to act as a firebreak.

5. The Government's own research shows that thinning forests makes them drier and more fire prone.

[1] The submissions were made in May 2009 and February 2010 and are available at: http://www.royalcommission.vic.gov.au/Submissions/View-Submissions under 'O'.

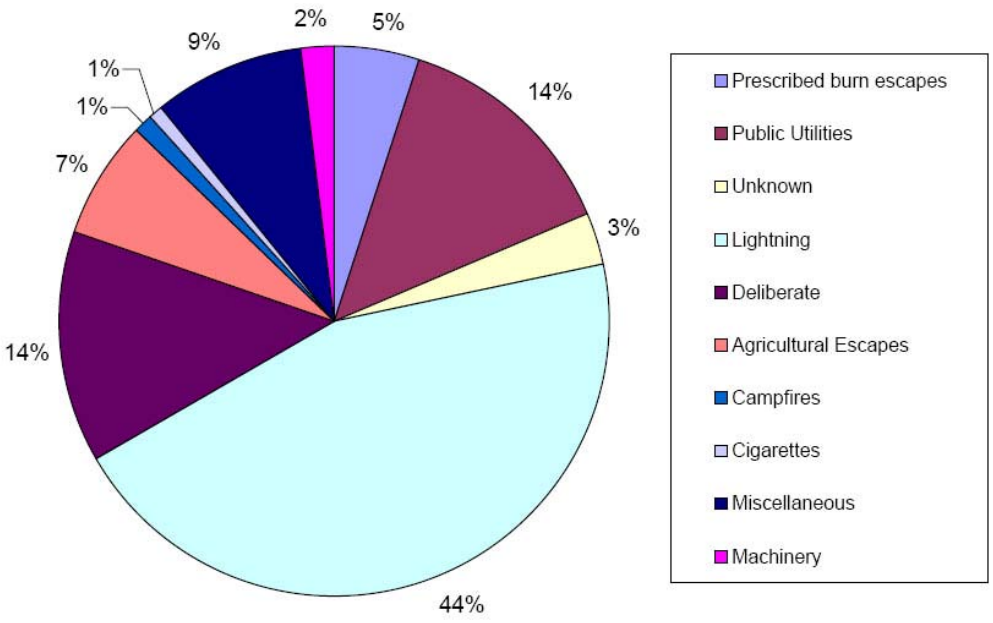
1. Over the past two decades one in 20 wildfires have been started by logging industry practices in State forests.

Serious wildfires have resulted from logging practices; these include fires escaping from logging coupe burn-offs, and fires started by logging machinery exhausts and chainsaws. Additionally, the Department of Sustainability and Environment (DSE) admits that road construction for the purposes of logging may be a significant source of ignition.

The most recent example is the very serious fire that burnt over 6,000 ha near Cann River. This fire was started by logging equipment machinery at a logging coupe in December 2009. The fire kept re-igniting, taking weeks to control. It was very fortunate that the fire did not destroy the Cann River township.[2]

DSE has a huge amount of information about fire starts on public land. However information is presented in a vague way.

Figure 1.5: Causes of fire on Victorian public land by number of fires each year for the past 20 years.[80]



This pie chart is based on DSE data[3] and shows that 5% of all wildfires are started by prescribed burn escapes. Given that 63% of prescribed burns are post-logging burns then it is reasonable to attribute 3% of wildfire starts to post-logging burns. Combined with machinery fire starts (2%) this indicates that **5% or one in 20 wildfires started in State forests are by logging industry practices.**

[2] See news article: 'Fire crews battle Cann River blaze' *The Age* 19 December 2009.
[3] Environment and Natural Resources Committee, *Parliament of Victoria Inquiry into the Impact of Public Land Management Practices on Bushfires in Victoria* (June 2008).

2. Scientific research has already shown that regrowth after clearfell logging in wet forests is drier and more fire prone than unlogged forests. This issue has been raised by fire experts in the Bushfire Royal Commission.

Professor Lindenmayer, expert in Forest Wildlife Management and Nature Conservation, co-authored a recent article 'Effects of logging on fire regimes in moist forests'.[4] This article resulted from a review of research from around the world, and indicates that logging practices elevate wildfire risks in wet forests.

The introduction of the 2009 article[5] states that the motivation for the study was the 2009 Black Saturday fires and the claims made for more logging to reduce wildfire risk. In the concluding remarks the article states:

> Contrary to claims by some commentators (e.g., National Association of Forest Industries), industrial logging is likely to make some kinds of forests more, not less, prone to an increased probability of ignition and increased fire severity and/or fire frequency.[6]

On Thursday 18 February 2010 Professor Ross Bradstock, Director of the Centre for Environmental Risk Management of Bushfires at the University of Woollongong, presented a research report and spoke to the Bushfire Royal Commission.

Bradstock's research was based on a statistical analysis of 4,500 points within forested public land that was burnt by fires started on Black Saturday. Bradstock found that weather was the driving influence on wildfire, followed by forest type and then fuel loads. All these factors are interrelated.

Professor Bradstock also found that young regrowth forest from past clearfell logged native forest increased the fire hazard.

> "It appears that recent logging elevates the severity of fires. So you have got higher severity. We are talking about crown fires here[7]"

Crown fires in a forest are the most uncontrollable and can cause severe ember attack.

[4] Davd B Lindenmayer, Malcolm Hunter, Philip J Burton, Philips Gibbons, '*Effects of logging on fire regimes in moist forests*' (2009) 2 *Conservation Letters* 271. [References omitted from excerpt.] http://www3.interscience.wiley.com/cgi-bin/fulltext/122659216/PDFSTART
[5] Ibid.
[6] Ibid.
[7] Transcript, 18 February 2010 Bushfire Royal Commission.

3. Historically, resources have been diverted away from fuel reduction burns in favour of burning off clearfell logged areas in State forest to promote regrowth.

There are three types of prescribed burns conducted on public land:
(1) fuel reduction burns;
(2) burning after clearfell logging to promote regrowth; and
(3) burning for ecological purposes.

Number of burns
The Esplin Inquiry into the 2002-2003 Victorian bushfires included an analysis of prescribed fires between 1991 and 2003. Esplin found that the number of burns conducted after logging dominated, representing an average of 63% of prescribed burns each year compared with 33% for fuel reduction. [8]

Area of burns
However the average area burnt each year due to logging is tiny, at only 2% compared with 90% for fuel reduction burns. Why? The average size of each logging burn is 24ha compared with 700ha for each fuel reduction burn.[9]

Resources for burns
There are very limited days available to safely conduct fuel reduction burns, and a limited pool of qualified personnel to undertake this dangerous work.

The Esplin inquiry found that the limited resources to conduct all forms of prescribed burns have historically been diverted away from fuel reduction and ecological burns in order to prioritise post-logging burns.[10]

VicForests has acknowledged these are some causes for a historic lack of fuel reduction burns and has new arrangements in place to try and remedy the situation.[11]

Source for Figure 10.1 and 10.2: Bruce Esplin, Dr Malcolm Gill, Prof Neal Enright, State Government of Victoria, *Report of the Inquiry into the 2002-2003 Victorian Bushfires* (2003).

[8] Bruce Esplin, Dr Malcolm Gill, Prof Neal Enright, State Government of Victoria, *Report of the Inquiry into the 2002-2003 Victorian Bushfires* (2003), Figure 10.1.
[9] Ibid, Figure 10.2.
[10] Ibid, paragraph 10.36, page 96.
[11] See VicForest letter at http://www.oren.org.au/issues/fire/VicForests_letter.pdf

4. Rainforests can act as natural firebreaks in moderate to low fire conditions. Logging inhibits the ability of rainforest to act as a firebreak.

Rainforest plant communities are defined as species that are not fire tolerant, that is they will die as a consequence of a very hot fire. However, as a plant community, rainforest stands have fire resistant qualities against cooler fires.

> In view of the dominate role of fire as the primary agent of rainforest disturbance, it is proposed that rainforest be redefined, conceptually, as an example of 'fire – sensitive' forest characterised by a combination of fire proof site characteristics and fire-resistant or fire-retardant vegetation characteristics.[12]

After the terrible inferno of Black Saturday, under moderate weather conditions, Cool Temperate Rainforests acted as natural fire breaks along a significant edge of the ultimate fire edge in remote and inaccessible ash forest country.

Logging practices may be reducing the natural fire resistance of rainforests across the landscape. Logging too close to rainforest can cause changes to the rainforest's micro climate which can cause the rainforest to become drier and less able to slow and stop moderate fires.

To take full advantage of the ability of rainforests to act as a natural firebreak, making the forests wet forest landscape as fireproof as possible, bigger buffers between logging and rainforests are required.

[12] DG Cameron 'A portrait of Victorian rainforests: distribution, diversity and definition' in Peter Gell, David Mercer (eds.) *Victorian rainforests: Perspectives on definition, classification and management* (1992).

5. The Government's own research shows that thinning forests makes them drier and more fire prone.

Logging industry lobby groups argue that biomass management through commercial tree thinning will reduce fuel loads and increase water yields for Melbourne's domestic water supply catchments.[13] In actual fact thinning makes the forest drier and more fire prone.

A 2006 review of commercial thinning conducted by University of Melbourne's School of Forestry on behalf of VicForests demonstrates thinning in Victoria's wet forests elevates wildfire risks.[14]

> Thinnings operations will alter the climate on the forest floor with more open canopy, associated high wind speed and more direct sunlight giving rise higher temperatures, lower humidity and lower moisture content of the fuel itself.
> …
> While it is expected that total fuel loads will be increased by thinning and fuels will be drier it is also expected that there will be less elevated fine fuels, which are critical to flame height development and forward rate of spread. However, it could be expected overall there should be an increased fire risk.[15]

The option of burning off the slash after thinning is not available as fire can easily destroy retained trees.

This is a planning constraint already acknowledged by forestry agencies in Tasmania:

> One of the major planning constraints associated with thinning is the higher level of fuel present after the operation. It is not considered feasible in Tasmania to carry out fuel reduction burns in thinned coupes because of the high fuel loads and the sensitivity of the retained trees to fire. The location of thinned coupes amongst logging conventionally logged coupes is problematic, as it is not recommended that any regeneration burns take place within two kilometres of areas with high levels of flash fuel within two years of harvest (LaSala 2001).[16]

Note: Logging industry groups often refer to thinning forests in the Wungong catchment Western Australian to increase water yields. However the preferred method to thinning in this case is undertaken with herbicides, with the dead trees left at the forest to decay.[17] These forest ecosystems are also very different to those in Victoria.

[13] See VAFI May 2009 submission Royal Commission page 50.
[14] University of Melbourne School of Forest and Ecosystem Science *Review of knowledge on the effects of commercial thinning on native forests on flora and fauna, fire risk, eucalypt health, hydrology and soil physical and hydrological properties.* Prepared for VicForests (May 2006).
[15] Ibid.
[16] Native Forest Silviculture, Forestry Tasmania's Technical Bulletin 13, *Thinning regrowth Eucalypts*
[17] *Environment and Natural Resources Committee. Inquiry into Melbourne's Future Water Supply*. June 2009. Page 290.