



Submissions to the Victorian Bushfires Royal Commission

Otway Ranges Environment Network

Melbourne Water Catchment Network

18 February 2010

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APPENDIX A: 2009 BLACK SATURDAY WILDFIRE IMPACT ON LOGGING COUPES IN STATE FORESTS

APPENDIX B: 2009 BLACK SATURDAY WILDFIRE IMPACT ON COOL TEMPERATE RAINFORESTS IN THE CENTRAL HIGHLANDS

Introduction

The following submissions are supplementary to the submissions already provided to the Royal Commission by the *Otway Ranges Environment Network* (OREN) and the *Melbourne Water Catchment Network* (MWCN), dated 18 May 2009.¹

These submissions provide information relevant to items 2 and 7 of the Bushfire Royal Commission Terms of Reference. In particular the issue of planning, with respect to the elevated fire risk on public land due to the native forest logging industry's practices.

Appendices A and B form important parts of these submissions as they provide photographic evidence for many of our submissions. These should be read in conjunction with our submissions.

We use the term 'native forest logging' to mean logging practices sanctioned by the State Government on State forest public land in Victoria. This discussion does not extend to logging practices in plantations and native forest on private land.

In our May 2009 submissions we described the native forest logging industry's 'dirty tricks campaign', the objectives of which can be categorised under the following objectives.

Logging industry's dirty trick campaign objectives:

- 1. Shift attention away from the fact that native forest logging practices elevate wildfire on public land.**
- 2. Use public fear of wildfire to shift public attitudes against the creation of more National Parks.**
- 3. Argue for more logging through thinning on public forested land purportedly to reduce wildfire risk.**

We do not dispute that the people involved in the native forest logging industry do contribute to helping fight wildfires through the provision of equipment and expertise. However there are also some serious negative consequences of native forest logging, which have not been acknowledged by the native forest logging industry. These are discussed below.

¹ http://www.royalcommission.vic.gov.au/Submissions/SubmissionDocuments/SUBM-002-029-0001_R.pdf

1 Logging practices elevate wildfire risk on public land.

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

In general serious wildfires started by logging practices include fires escaping from logging coupe burn-offs, and fires started by logging machinery exhausts and chainsaws.

The most recent example is the very serious fire that burnt over 6,000 ha near Cann River. This fire was started logging equipment machinery at a logging coupe in December 2009, and took a week to control. It was very fortunate that the fire did not destroy the Cann River township. See news articles:

Fire crews battle Cann River blaze. Age 19 December 2009.

<http://www.theage.com.au/national/fire-crews-battle-cann-river-blaze-20091219-l686.html>

Within two kilometres of disaster. Snowy River Mail. 23/12/2009

Section 2.6 of our May 2009 submissions details other media reports of wildfires started by logging practices that threatened Melbourne's domestic water supply catchments.

In their submissions to the Parliamentary inquiry, DSE admitted that road construction for the purposes of logging may also be a significant source of ignition:

There are also instances and records of forest industry activities impacting on starting fires through ignition from machinery and chainsaw operations. Opening new forest roads and tracks increases access, and while this can assist in getting to fires, it can also lead to more ignitions. Close to 25% of human caused fires on public land occur within 100 meters of roads and tracks and nearly 90% occur within one kilometre.²

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

A 1997 DNRE report³ provides descriptions of fire causes. Some of the causes are presumably attributed to logging practices (ie snigging, hauling, exhaust chainsaw and Departmental prescribed burning). However this analysis did not try to directly quantify fire starts specifically attributed to the native forest logging practices.

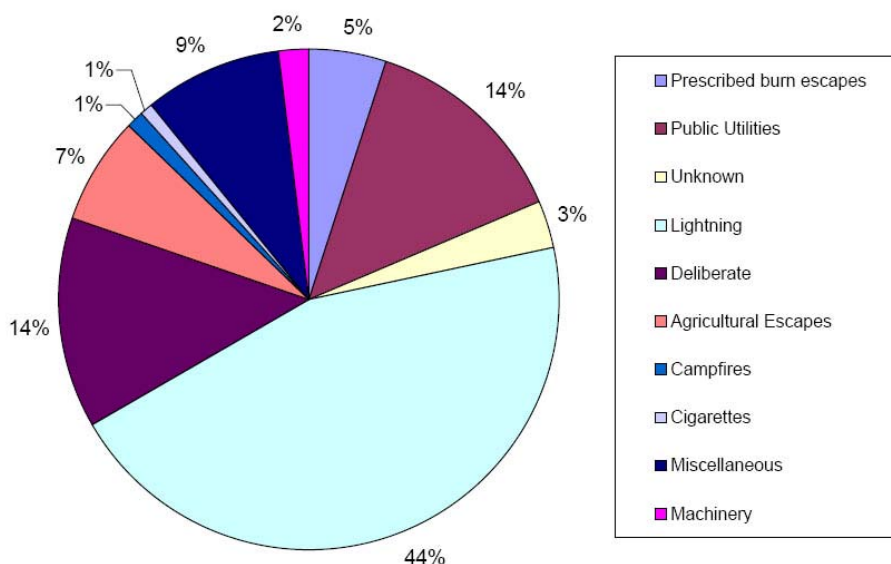
² DSE Submissions 168C to Environment and Natural Resources Committee, *Parliament of Victoria Inquiry into the Impact of Public Land Management Practices on Bushfires in Victoria* (June 2008).

³ DNRE report 1997 ANALYSIS OF FIRE CAUSES ON OR THREATENING PUBLIC LAND IN VICTORIA 1976/77 – 1995/96, Research Report No. 49 Chris Davies Fire Management Branch October 1997

Estimating fire starts attributed to logging practices

The pie chart below uses DSE data and is extracted from the Parliamentary Inquiry.⁴

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



It is claimed that 5% of all wildfires are started by prescribed burn escapes. Given that the 2003 Esplin Inquiry found that 63% of prescribed burns are for logging coupes (See section 1.3.1 of this submission) then it is reasonable to assume at least 3% of wildfire starts are attributed to logging coupe burn escapes. Combined with machinery fire starts (2%) this indicates that 5% or at least one in 20 fires started in State forests are by logging industry practices.

We submit that, particularly given the recent serious Cann River fire started by logging practices, the Royal Commission should direct the Government to commission an independent study to determine how many wildfire starts are directly attributed to native forest logging industry practices on public land. This study should include an analysis of what can be done to further reduce wildfire starts from this industry.

⁴ Environment and Natural Resources Committee, *Parliament of Victoria Inquiry into the Impact of Public Land Management Practices on Bushfires in Victoria* (June 2008).

1.2 Logging practices elevate wildfire risks and make fuel reduction burning difficult to conduct in State forest.

1.2.1 Research

The recent 2009 Lindenmayer report *Effects of logging on fire regimes in moist forests*⁵ provides an overview of research from around the world; this indicates logging practices elevate wildfire risks in wet forests.

Whelan (1995) noted that clearfelling of moist forests in southern Australia led to the development of dense stands of regrowth saplings that created more available fuel than if the forest was not clear-felled. Large quantities of logging slash created by harvesting operations can sustain fires for longer than fuels in un - logged forest and also harbor fires when conditions are not suitable to facilitate flaming combustion or the spread of fire (Cochrane & Schulze 1999).⁶

This Lindenmayer report supports our May 2009 submissions (Section 2.5) that logging can make forests drier:

... logging in some moist forests in south eastern Australia has shifted the vegetation composition toward one more characteristic of drier forests that tend to be more fire prone (Mueck & Peacock 1992).⁷

Figures 1A and 2A in Appendix A are examples of Mountain Ash re-growth after clearfell logging.

The introduction of the Lindenmayer 2009 report⁸ 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 of the Lindenmayer report it states:

Contrary to claims by some commentators (e.g., National Association of Forest Industries 2009a,b,c), industrial logging is likely to make some kinds of forests more, not less, prone to an increased probability of ignition (Krawchuk & Cumming 2009) and increased fire severity and/or fire frequency (Uhl & Kauffman 1990; Thompson et al. 2007; Bradshaw et al. 2009; Malhi et al. 2009).⁹

⁵ David B Lindenmayer, Malcolm Hunter, Philip J Burton, Philips Gibbons, 'Effects of logging on fire regimes in moist forests' (2009) 2 *Conservation Letters* 271.

<http://www3.interscience.wiley.com/cgi-bin/fulltext/122659216/PDFSTART>

⁶ Ibid.

⁷ Ibid.

⁸ Ibid.

⁹ Ibid.

1.2.2 Government Agencies already manage for elevated fire risk caused by logging practices on public land.

According to the Department of Sustainability and Environment, regrowth in State forests after clearfell logging can become a bushfire fire hazard when it is over 10 years old, making it very difficult to conduct fuel reduction burning:

What impact has the cessation of timber harvesting had on the likelihood or occurrence of fire?

Anecdotes and records indicate both positive and negative impacts of forestry activities on the occurrence of fire.

.....

There is no evidence that supports the premise that a reduction in forest management activity has increased the occurrence of fires. Young regrowth (less than 10 years of age) often carries low fuel loads following harvesting (provided the area has been previously slash burnt). As fuel loads increase with time since establishment more moisture is trapped under the developing forest canopy, making these areas relatively safe from fire under moderate, and sometimes high, fire danger conditions. However, more mature regrowth does burn vigorously as fire danger increases, and there are periods in the forest growth cycle where regrowth is both flammable and susceptible to damage by fire. While in this flammable and vulnerable state, the presence of regrowth makes managing prescribed burning more difficult. Patchy regrowth from minor forest uses is most difficult to protect.¹⁰

The Victorian Association of Forest Industries' (VAFI) May 2009 submissions to the Royal Commission provided evidence that young clearfell logging regrowth less than 10 years was not burnt by fires started on Black Saturday in some locations.¹¹

Figure 3A in Appendix A of these submissions shows an instance where young regrowth about five years old did not combust under moderate fire conditions in the Acheron Gap area.

However, the cumulative effect of clearfell logging over the past 40 years means extensive areas of State forest have been converted to even-aged stands of 'mature regrowth' which are more than 10 years old; and that this regrowth can 'burn vigorously'. As logging continues, more areas will be converted to this 'flammable and susceptible' state over time.

¹⁰ Source: DSE Submissions 168C to Environment and Natural Resources Committee, Parliament of Victoria Inquiry into the Impact of Public Land Management Practices on Bushfires in Victoria (June 2008). Page 13.

¹¹ Ibid, 31,32.

The evidence given by Lachie McCaw, Dept. of Environment and Conservation WA to the Royal Commission on 18 February 2010 showed that there were significant areas which had burnt but which had not been fuel reduction burnt recently. What Mr Much of this area is logging regrowth, which is likely to be the key reason why fuel reduction burning had not taken place.

Figures A4 – A11 in Appendix A are photos taken during a field inspection conducted in March 2009 that investigated the impact of the Murrindindi fire on 5 logging coupes (8, 14, 15, 17 and 18 years old) within the Toolangi State forests.

All these logging coupes were severely burnt, to the extent that all vegetation was totally destroyed.

Observations from field trips to areas burnt by the Black Saturday fires:

1. Clearfell logging coupes over nine years old tended to burn vigorously. Logged coupes in the path of the Black Saturday fire storm were severely crown burnt.
2. Regrowth on clearfell logging coupes tended to crown-burn easier than mature forest which had not previously been subjected to logged.
3. Clearfell logging coupes only a few years old may have a degree of temporary fire resistance that disappears as the re-growth matures.

The field observations strongly support the scientific evidence that the clearfell logging in wet ash forests elevates wildfire risks in the landscape. (See section 1.2.1 above.)

Public land wildfire management already factors in the elevate fire risks associated with regrowth from logging practices.

The management of wildfire and logging practices on public land comes under the *Code of Practice for Fire Management on Public Land 2006*¹² which seeks instruction from the *Code of Practice for Timber Production 2007*¹³ which in turn seeks instruction from Forest Management Plans.

It should be noted the *Code of Practice for Timber Production 2007* does not acknowledge that there are specific prescriptions within Forest Management Plans to regulate logging practices within fire management zones.¹⁴

For example the East Gippsland FMP details Fire Management Zones 1-5.¹⁵

Within the East Gippsland FMP discussion it is acknowledged that regrowth after clearfell logging is vulnerable to wildfire, and fuel reduction burning:

¹² *Code of Practice for Fire Management on Public Land 2006* Section 1.7 paragraph 46.

¹³ *Code of Practice for Timber Production 2007* Section 2.1.1.

¹⁴ See last paragraph page 5 *Code of Practice for Timber Production 2007*.

¹⁵ East Gippsland Forest Management Plan Section 5.1 Fire management

<http://www.dse.vic.gov.au/DSE/nrenfor.nsf/FID/-8AFD0BCD029264FF4A25679800069271?OpenDocument>

Frequent fuel-reduction burning may, however, adversely affect certain biological values or kill young regrowth resulting from previous fires or timber harvesting.¹⁶

In response to the threat, under 'Actions', clearfell logging is excluded from Fire Management Zone 1 and restricted in Fire Management Zones 2.

Actions:

In the Priority 1 burning zone, fire protection will take precedence over other activities. The SPZ and SMZ are designed to minimise overlap with it. Clear fall harvesting will generally be excluded because regeneration cannot withstand the prescribed fire regime.

Clear fall harvesting will be permitted in Priority 2 zones, provided an average of no more than 1% of a corridor is harvested in any one year. This means that up to 15% of a corridor could be regrowth forest less than 15 years old and would need to be excluded from burning operations.¹⁷

Priority 1 fire management zones are critical for protection of life and property for public land near major population centres and where visitors congregate.

Priority 2 fire management zones are strategic corridors where fuel loads are to be reduced to tackle major wildfires.

It is submitted that the comment '*regeneration cannot withstand the prescribed fire regime*' is an acknowledgment that forestry management accepts that they cannot manage fire near flammable regrowth after clearfell logging. Hence management has decided the safest option is to totally exclude clearfell logging (and hence the flammable regrowth) near towns, populated areas (fire management zone 1) and strategic wildfire management zones (fire management zone 2) as much as possible to avoid artificially elevating wildfire risk. This is responsible forest management and is consistent with the research identified in section 1.2.1 of this submission.

According to the East Gippsland FMA discussion, compromises were made to minimise losing timber resources to zone 1 and 2 fire management zones:

Burning zones were located to avoid adverse effects on significant biological values and to minimise constraints on timber harvesting where possible.¹⁸

This acknowledgment of compromises to maximise areas available for logging raises important questions. Has the size and location of fire management zones 1 and 2 been compromised to increase the area available for logging?

Extensive clearfell logging has already occurred within the Melbourne water supply catchments as shown in **Figure A12 & A13 of Appendix A**. Does this logging elevate the severe wildfire risk of the entire Melbourne water supply catchments?

¹⁶ See East Gippsland Forest Management Plan Chapter 5, Section 5.1 Fire management, page 49

¹⁷ See East Gippsland Forest Management Plan Chapter 5, Section 5.1 Fire management, page 50.

¹⁸ See EG FMP Chapter 5, Section 5.1 Fire management page 49)

Also note that other Government publications and research acknowledges elevated fire risks associated with thinning operations and the need for active management of these risks. (See details section 3.2 below.)

1.2.3 Conclusion

The weight of evidence is that regrowth after clearfell logging elevates wildfires risk and makes it more difficult to manage wildfire.

Given the evidence, the Royal Commission could already conclude that logging practices have and continue to create regrowth with elevate wildfire risk in the landscape;

However further independent research is needed to illuminate the full impact clearfell logging has on elevating wildfire risk on public land. This study should:

- Examine how logging practices undermine wildfire suppression strategies; and
- Review the appropriateness of the fire management zoning system to ensure they are appropriate and are not compromised in order to maximise the area available for logging.

Note that Victorian Association Forest Industries also calls for similar research to be undertaken (page 32 of VAFI's May 2009 Royal Commission submission).

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

The following expands on section 2.4 of our May 2009 submissions.

There are three types of prescribed burns conducted on public land:

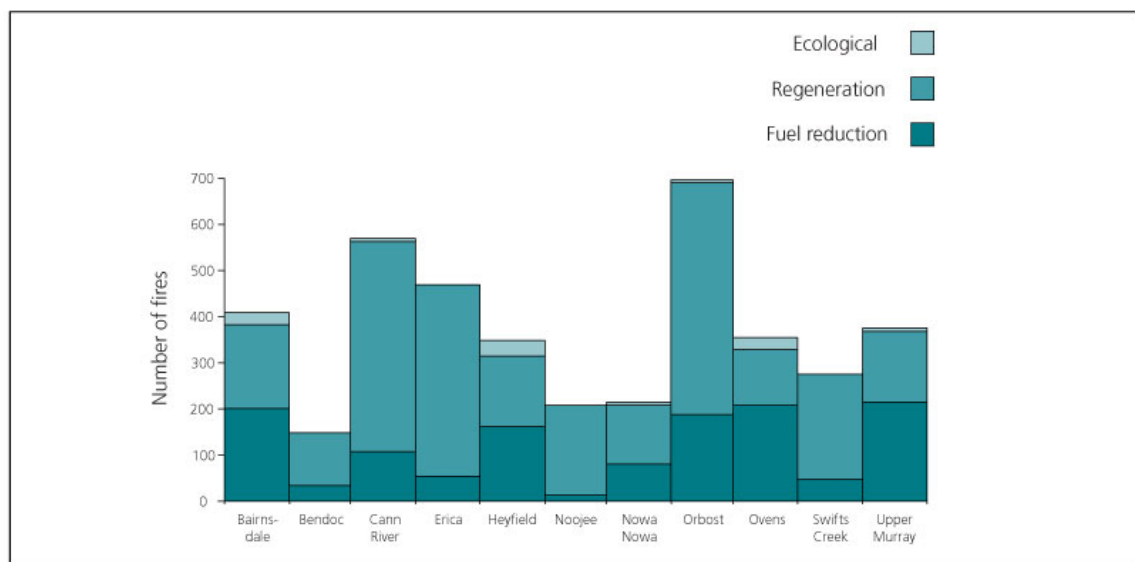
- (1) fuel reduction burns;
- (2) burning after clearfell logging to promote regrowth; and
- (3) burning for ecological purposes.

The Esplin Inquiry into the 2002-2003 Victorian bushfires found the primary type of prescribed burning was for post logging coupes. (Esplin Inquiry section 7.8). It analysed prescribed fires between 1991 and 2003. (Esplin Inquiry sections 10.34 - 10.49).

1.3.1 Number of Burns

The Esplin Inquiry 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 (See figure below.)

Figure 10.1: Numbers of Prescribed Fires Primarily for Fuel Reduction, Ecological and Regeneration Purposes by DSE District for the North East and Gippsland Regions; 1991 to 2003

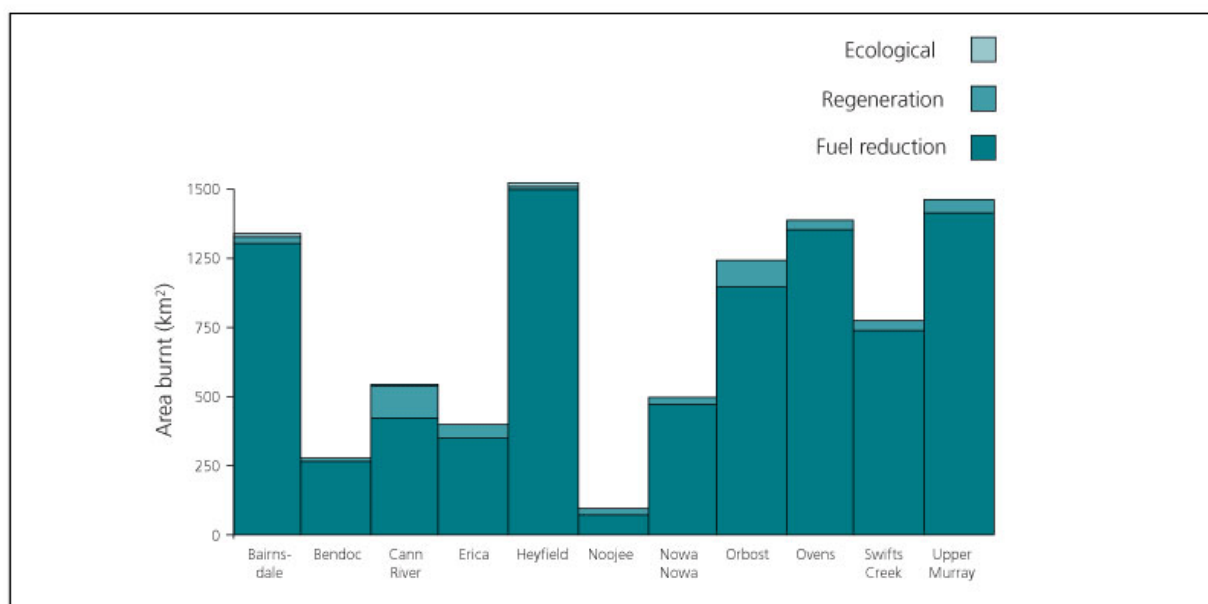


Source for Figure 10.1: Bruce Esplin, Dr Malcolm Gill, Prof Neal Enright, State Government of Victoria, *Report of the Inquiry into the 2002-2003 Victorian Bushfires* (2003).

1.3.2 Area of burns

However the average area burnt each year post-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 (See Figure 10.2).

Figure 10.2: Aggregate area (km²; for Hectares Multiply by 100) of Prescribed Fires for Fuel Reduction, Ecological Purposes and Regeneration Conducted by each DSE District for the North East and Gippsland Regions; 1991–2003



Source for Figure 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).

1.3.3 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.¹⁹

VicForests has acknowledged these causes for a historic lack of fuel reduction burns and has written to OREN regarding new arrangements in place to try and remedy the situation.^{20,21}

¹⁹ Bruce Esplin, Dr Malcolm Gill, Prof Neal Enright, State Government of Victoria, *Report of the Inquiry into the 2002-2003 Victorian Bushfires* (2003), paragraph 10.36, page 96.

²⁰ See VicForest letter at http://www.oren.org.au/issues/fire/VicForests_letter.pdf

²¹ Note that OREN did not send any correspondence to VicForests on this matter. VicForests appears to have been compelled to write to OREN to follow up on negative publicity regarding their management activities.

However competition for qualified people to conduct fuel reduction burning may be an ongoing issue. (Also see **Case Study Section 4.1.1** below).

DSE Submission 168E,²² and the State Government's announcement on 6 May 2009 to provide \$52.7 million funding undertake more fuel reduction burning,²³ indicate that a lack of qualified people may be an ongoing issue. The timing of the Government's May 2009 funding announcement indicates it is in response to the Black Saturday tragedy and that, prior to Black Saturday, the State Government may not have allocated sufficient resources to conduct fuel reduction burning.

1.3.4 Conclusion

It is likely there will always be conflict between logging coupe burn offs and fuel reduction burns over resources and personnel to conduct prescribed burns safely and effectively. There needs to be a close examination to determine if resources for burning off logging coupes have taken priority over general fuel reduction burning.

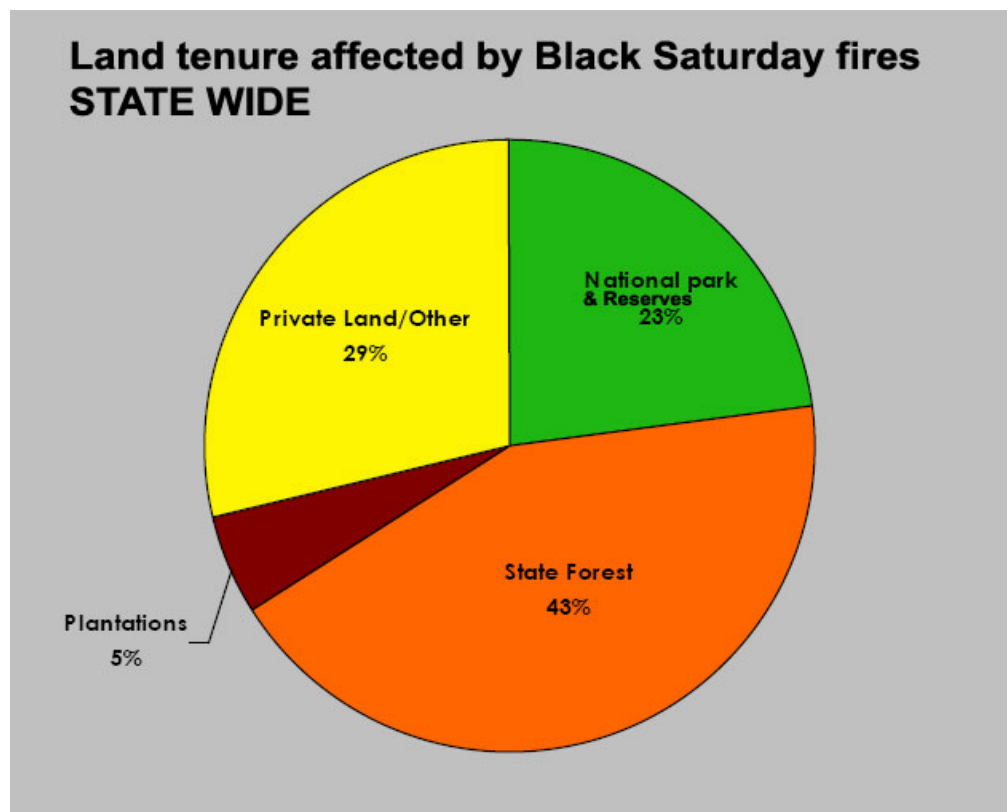
²² DSE Submission 168E, page 5 as part of the Environment and Natural Resources Committee, Parliament of Victoria Inquiry into the Impact of Public Land Management Practices on Bushfires in Victoria (June 2008)

²³ <http://www.premier.vic.gov.au/component/content/article/6751.html>

2 Countering the perception that National Parks increase wildfire risk

2.1 *Less than a quarter of the area burnt by the Black Saturday fires was National Parks and reserves.*

Of the 430,000ha burnt by fires which started on Black Saturday, about 100,000 ha was within National Parks, while 180,000 ha was in State forests where clearfell logging is permitted.²⁴



Chris Taylor 2009, *Victorian February Fires. A Report on the Driving influences and land Tenures affected.*

The fact that a significantly larger proportion of area burnt was State forests (where logging is permitted) shifts the issue of contributing causes of fire to the whole landscape rather than just National Parks.

²⁴ Victorian Bushfire Reconstruction and Recovery Authority. *100 Day Report.* (2009).

2.2 Whether an area is State forest or National Park makes no difference to the fire suppression resources and strategies needed to manage fire on all forested public land.

All fire suppression on public land in Victoria is the responsibility of the Department of Sustainability and Environment.

The Department of Sustainability and Environment's Fire Management Branch is responsible for wildfire protection and fire fighting in state forest, national, state or other parks, reserves or other Crown land. Other bodies, such as the Country Fire Authority, Parks Victoria and plantation managers, assist in both fire prevention and fire suppression activities.²⁵

2.3 Fires that impacted public land on Black Saturday were started on private cleared agricultural lands.

The path the fires took does not support the suggestion that the Yarra Ranges and Kinglake National Parks are somehow solely to blame for the fires.

As indicated on the pie chart from the ENRC 2008 report (see section 2.1 of these submissions), 7% of wildfires are agricultural escapes. The fires that claimed the majority of human life and destroyed property on Black Saturday were ignited on private land which had been previously cleared for agriculture (in the case of Murrindindi and Kilmore East) or was by a roadside in a plantation area (Churchill). The Murrindindi, and Churchill fires had their initial runs - i.e. the fire gained its initial intensity - in plantations.

By the time the Kilmore East fires arrived at the Kinglake National Park, the fire had already claimed its first human casualties, destroyed property and burnt through logged-out State forests.

Similarly, before the Murrindindi Fire arrived at the Yarra Ranges National Park, it had already burnt through the heavily logged Toolangi State forest and had tragically destroyed Marysville.

²⁵ Victorian Environmental Assessment Council, *Angahook-Otways Investigation, Discussion Paper* (Sept 2003) 82.

2.4 The decline of the native forest logging industry is not due to being 'locked out' of National Parks

As discussed in Section 2.2 of our May 2009 submissions, it is often claimed that the decline in those employed in the native forest logging industry overall is due to an increase in national parks and this has therefore reduced the communities' capacity to fight and manage wildfires. Predictably VAFI purported this in its Royal Commission May 2009 submission.²⁶

Section 2.3 of our May 2009 submissions detailed unsubstantiated and incorrect claims that fire access tracks have been closed due to a cessation of logging in areas such as the Otways. This line of argument was again repeated by VAFI in their submission to the Royal Commission: 'in many areas and reserves, such as the Otways, the [fire] access network is currently not sufficient and has declined in both extent and quality'.²⁷ This is claim is unsubstantiated and incorrect, as shown in Section 2.3 of our May 2009 submissions. A Western Victoria MLA David Koch made similar claims last year and, when publically challenged, he failed to name any tracks which have been closed.²⁸

VAFI claims that the loss of the native forest logging industry in the Otways, and associated loss of equipment and personnel will adversely affect the ability to control wildfire.²⁹ This statement disregards the fact that substantial plantation industries, both softwood and bluegums, are located throughout the Otways. Additionally there are substantial agricultural and tourism industries which provide a pool of people to fulfil roles in the SES and CFA.

These submissions do not dispute the fact there has been a reduction in the number of people employed and associated with the native forest logging industry over the years. What is disputed is the claim that National Parks are the cause of this decline.

There are two factors which have driven the reduction in employment within the native forest logging industry across Victoria and Australia. First is a reduction in sustainable yield (very briefly mentioned in VAFI submission page 32); the second is industry rationalisation and consolidation as a function of capitalist market behavior.

2.4.1 Sustainable yield reductions

The key causes of sustainable yield reductions have been:

²⁶ See pages 32,33 VAFI May 2009 submission.

²⁷ Ibid, 45.

²⁸ <http://www.oren.org.au/issues/fire/GA%20090715.pdf>

²⁹ VAFI submission to the Royal Commission, May 2009, 32.

Past over-logging (major cause).

Most of the Forest Management Plans for each Forest Management region in Victoria provide a historic account of past unsustainable logging rates allowed by the Governments of the day in order to meet a demand for building materials.

Unsustainable levels of logging grew to a peak in locations such as the Otways and East Gippsland in the post-WWII building booms of the 1950's and 1960's.

In 2001 the Victorian State Government announced that past over-logging has resulted in a need to significantly reduced logging rates.³⁰ In Feb 2002, following a government-commissioned independent inquiry,³¹ the State Government announced a statewide cut-back of logging rates by 30%.³² These cutback were implemented and resulted in a major reduction in the size of the native forest logging industry work force. No new parks or reserves were created as part of this industry consolidation.

Past Bushfires (major cause).

The 1939 bushfires had a devastation impact on sawlog resources in the Central Highlands. These fires contributed to the State Government policy of allowing unsustainable levels of logging to occur in areas such as the Otways and East Gippsland to meet the post-WWII building boom demand.

2.4.2 Industry rationalisation

The second key cause of reduced employment in rural towns in Eastern Victoria has been the rationalisation of the native forest logging industry.

- *Industry rationalisation and technology.*
Sawmill industry mergers, cost cutting, rationalisation and consolidations have occurred in a bid to remain competitive. Such rationalisation has been driven by technology improvements. Greater mechanisation of sawmills and the introduction of chainsaws and bulldozers to logging practices in the 1950's have all result in more machines doing more work with fewer people. This is typical of the historical development of industrial society in general. Such changes to the native forest logging industry have occurred across Australia.³³
- *Softwoods.*
The establishment of extensive softwood plantations across Australia resulted in the gradual displacement of native forest hardwoods for construction building materials. This contributed to the closure and merger of many sawmills to focus

³⁰ Forest policy lost in the Woods. Age Opinion. 9/3/2001

³¹ Evaluation of Data and Methods for estimating the Sustainable Yield of Sawlogs in Victoria Report of the Expert Data Reference Group Prof Jerome K Vanclay and Dr Brian J Turner. 31 October 2001.

³² Our Forests, Our Future. Balancing Communities, jobs and the Environment. February 2002. Victorian Govt.

³³ Ian Watson, *Fighting over the Forests* (1990), The Mill Modernisations, page 2.

on only value adding appearance grade sawn-timber.³⁴

- *Export Woodchips.*

The development of an export native forest woodchip industry resulted in about 70% of trees removed from public land being woodchipped and exported.³⁵

Such practices contribute little to value-adding and associated employment within rural areas of Victoria.

³⁴ Ibid, page 9; Judy Clark, *Australian Plantations. A report to the State Conservation Councils* (1995) page 62.

³⁵ VicForests *VicForests2007 Annual Report*; and MWCN *Submission to Timber Industry Strategy for Victoria* (2009) 14.
http://new.dpi.vic.gov.au/_data/assets/pdf_file/0012/5430/Melbourne_Water_Catchment_Network.pdf

3 Thinning forests on public forested land elevates wildfire risk

VAFI strongly advocates the idea that biomass management through commercial tree thinning will reduce fuel loads and increase water yields from within the Melbourne domestic water supply catchments.³⁶

In this regard VAFI's May 2009 submissions rely on recommendation 5.1 of the ENRC 2008 findings³⁷ as justification that this view has merit (see Section 4.4 below).

Most forest is currently thinned for the purpose of improved growth rates of retained trees for future sawlogs. Trees selected for thinning are sold commercially in the domestic or export woodchip markets.

The *East Gippsland Forest Management Plan* defines thinning as a resource development strategy, and as a commercial opportunity.

Commercial thinning of regrowth

Thinning is a silvicultural practice used to enhance diameter and volume growth of selected trees by removing others unlikely to grow into sawlogs. Secondary goals are to salvage useful wood from trees that would otherwise die through suppression, and to produce a financial return early in the life of a stand. Regrowth thinnings yield a high-grade pulp for paper-making and have potential as feedstock for production of reconstituted-wood products.³⁸

It is a requirement that VicForest undertakes all forestry operations on public land profitably. It is assumed thinning forests is generally undertaken only in forests where a sufficient economic return for the thinned trees as woodchips can be obtained.

For example the *East Gippsland Forest Management Plan* details the economic and operational constraints to the viability of thinning.

- To be viable for commercial thinning, stands should have a basal area of at least 30 sq.m of regrowth per ha and less than 12 sq.m of over - wood per ha. This means most viable stands in Low Elevation Mixed Species forests are 20-30 years old.
- Large areas of regrowth occur in areas of low site quality that would not produce optimal growth responses.
- Existing harvesting technology places operational constraints on thinning of regrowth stands on slopes greater than 18° or with substantial amounts of large-diameter log debris on the ground.³⁹

³⁶ See VAFI May 2009 submission page 50.

³⁷ See VAFI May 2009 submission page 51.

³⁸ DNRE, *East Gippsland Forest Management Plan* (1995) Chapter 4.

<http://www.dse.vic.gov.au/DSE/nrenfor.nsf/FID/-7169671D20052BF4A2567980006924F?OpenDocument>

³⁹ Ibid.

An examination of *VicForest Timber Release Plans* (TRP) reveal that most thinning operations target high growth rate wet and damp mountain forests where sufficient economic returns for thinnings can be achieved.⁴⁰

Hence there is a commercial advantage for the native forest logging industry to use wildfire threat as part of a campaign to exploit more forest resources.

No actual scientific evidence has been presented by pro-logging groups to support their conclusion that thinning forests reduces wildfire risks. Existing research into wildfire mitigations strategies and current forest management contradict these claims.

⁴⁰ <http://www.vicforests.com.au/planning-and-timber-release-plans.htm>

3.1 Thinning makes wet and damp forests more fire prone.

As discussed in section 1.2.1 wildfire risk in forest is elevated after clearfell logging.

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).⁴¹

A 2006 review of commercial thinning conducted by University of Melbourne's School of Forestry on behalf of VicForests concluded that more research is need to demonstrate thinning in Victorian wet forest elevates wildfire risks.⁴²

However this report acknowledged many of the negative factors associated with wet forest thinning, stating that these negatives outweighed the positives:

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.⁴³

Overall, thinning of wet forests was acknowledged to elevate wildfire risk, at least in the short term:

In Victoria, the extent and duration of any increased fire risk has not been studied, but it is expected that the wet climate of theses forests will quickly lead to fine fuels bio-degrading and that much of the additional fire risks will disappear within two summers.⁴⁴

⁴¹ Native Forest Silviculture, Forestry Tasmania's Technical Bulletin 13, *Thinning regrowth Eucalypts*

⁴² 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).

⁴³ Ibid.

⁴⁴ Ibid.

This statement assumes normal rainfall patterns in wet forests. It does not consider the worsening fire risk due to low rainfall in drought conditions, which would increase the fire risk.

In Tasmania it is recognised that thinning elevates wildfire risks:

In Tasmanian wet forests the higher levels of fuel present after thinning and the associated higher initial fire risk is recognised. It is not recommended that any regeneration burn take place within two kilometers of thinned areas with high levels of flash fuel within two years of harvest (LaSala 2001.)

The reasons for the increase fire risk after thinning were described in Forestry Tasmania's Technical Bulletin, *Thinning regrowth Eucalypts*,⁴⁵

Tree crowns (heads), bark and other harvest residue make up the fuel load. The climate on the floor of the forest is altered by thinning, with higher wind speeds and air temperatures, lower humidity and lower moisture content in the fuel itself. Understorey vegetation characteristics change because of these changes to the microclimate, especially increased light. Bracken ferns and cutting grass may grow vigorously, each having a far higher flammability than the replaced woody species (LaSala 2001).

⁴⁵ Native Forest Silviculture, Forestry Tasmania's Technical Bulletin 13, *Thinning regrowth Eucalypts*.

3.2 Thinning makes dry forests more fire prone.

Further evidence is provided that past logging activities in dry forests of Eastern Victoria have elevated wildfire risk.

Past timber harvesting and wildfires events in these forests have resulted in extensive areas of even-aged eucalypt regrowth, this is practically the case in East Gippsland. The understorey of these forests is a dense, aerated layer of flammable fine fuel which combines with high levels of litter fuels and the presence of stringybark with the high potential for generating spot fires to present one of the highest fuel hazards Overall Fuel Hazard level Very High to Extreme - McCarthy, Tolhurst and Ghatto 1999) found in Australian forests.⁴⁶

The purpose of thinning is to improve future sawlog yields from retained trees. It has been already accepted by authorities in Victorian that logging practices in both wet and dry forests elevates wildfire risks, as discussed in section 1.2.2 above.

However thinning operations in eucalypt regrowth forest can substantially change the hazard of the fuel complex and potentially, should wildfire occur, significantly increase suppression difficulty and sever damage to retained trees. The extent and duration of this change to fire risk is an important element in the development of any Fire Protection Plan.⁴⁷

The logging industry already recognises the need to reduce elevated wildfire risks caused by clearfell logging and thinning operations.

The forest industry in East Gippsland depends heavily on protecting both the thinned and unthinned regrowth forests from wildfire, so back in the late-1980's this increased hazard was seen as something that needed to be managed. Fuel reduction burning following thinning was seen as the way to manage of this hazard, however there was a need for this to be carried out with acceptable levels of burn damage to the stems and crowns of retained trees.⁴⁸

Experimental plots and thinning trials in the late 1980's, as part of a study by Buckley and Corkish,⁴⁹ were established in East Gippsland in an attempt to evaluate theoretical strategies to reduce wildfire hazards associated with the practice of thinning.

⁴⁶ 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). Page 33.

⁴⁷ Ibid.

⁴⁸ Ibid, page 34.

⁴⁹ Buckley AJ and Corkish NL. 1991. Fire Hazard and Prescribed Burning of Thinned Slash in Eucalypt regrowth Forest. Fire Management Branch Research Report No.29 Dept of Conservation and Environment 22 pp.

However in practice these trials demonstrated that it was very difficult to reduce elevated wildfire risk without damaging the retained trees or the commercial value of trees thinned for woodchips.

The research found the best course of action was to not conduct fuel reduction burns in thinned dry forests and accept the associated elevated wildfire risk:

It was determined that on balance the least risk to the thinned regrowth was to generally leave these areas unburnt, and this is reflected in the Current guideline (Sebire and Fagg 1997), which also outline strategies to assist in reducing the need to burn in thinned areas. The work of Buckley and Corkish (1991) and Fogarty (1992) is used in this guideline to outline Factors that should be considered where FRB is used in thinned areas.. Thinned regrowth forests and excluding fire has now generally occurred for over a decade.⁵⁰

and

Using the Overall Fuel Hazard Guide (McCarthy et al. 1999), these older thinned stands could be assessed as having an Extreme Overall Fuel Hazard, with Bark hazard at Very High-Extreme. Surface Fine Fuel hazard also at V& High- Extreme and Elevated Fuels at Very High hazard. Additionally the coppice stratum in thinned stands can increase fire risk by contributing to the connective or ladder fuels from the understorey to the canopy. While prescriptions for burning in the wiregrass fuel type have been developed for regrowth forests (Buckley 1993) their application in thinned regrowth has not been evaluated and is considered problematic. As the area of thinned regrowth forest increases at a growing rate and the fine fuel dynamics change it is appropriate to reconsider the application of FRB to these stands as part of any review of the Fire Protection Plan.⁵¹

From a planning point of view it has been accepted that thinning poses an elevated wildfire risk that has been factored into current fire management planning. For safety reasons thinning forests is excluded from Fire Management Zone 1 and 2.

Currently, thinning is not generally conducted in Fire Management Zone 1 areas, as these areas are managed for the protection of human life, property and assets and consequently fuel hazards are kept to lower levels (target Overall Fuel Hazard Moderate over 90% of the FRB area) by frequently FRBs (NRE 1995). Thinning is also restricted in Zone 2 areas, as they are intended to provide long strategic corridors of fuel reduced area which can act as a barrier to large, fast moving wild fires, and consequently are also burnt more frequently (burn frequency generally 5-8 years, target Overall Fuel Hazard High (or less) over 80% of the FRM area). Thinning more generally occurs in Zones 3 and 4, which are seen as having decreased importance from a fuel management perspective.⁵²

Section 1.2.2 above lists the definition of Fire Management Zones and associated management constraints as written into the East Gippsland Forest Management 1995.⁵³

⁵⁰ University of Melbourne School of Forest and Ecosystem Science, above n 46, 35.

⁵¹ Ibid, 36.

⁵² Ibid, 33.

⁵³ East Gippsland Forest Management Plan. Section 5.1 Fire Management.
<http://www.dse.vic.gov.au/DSE/nrenfor.nsf/FID/-8AFD0BCD029264FF4A25679800069271?OpenDocument>

3.3 Discussion and conclusion on thinning

The overall weight of evidence already provided by research, and incorporated into existing management strategies, is directed at trying to reduce the elevated wildfire risk thinning forests creates. Forestry managers have declared defeat on this issue and instead try to quarantine thinning and clearfell logging to areas away from human settlements and assets.

There is no evidence that current thinning or clearfell logging practices are being used to reduce wildfire risk. Instead, to their credit, forestry management is trying to reduce the elevated wildfire risk these practices create and isolate towns and settled areas from the impact.

The call for more research to examine if thinning forests will reduce fire risk (eg ENRC 2008 Recommendation 5.1, see section 4.4 below) is a distraction from the research already gathered.

The native forest logging industry's incorrect promotion of thinning as a means to reduce wildfire risks appears to be part of a public relations campaign to defend against the opposite reality; that clearfell logging and regrowth thinning elevates wildfire risk in the landscape.

4 Critical analysis of ENRC 2008 report findings and Recommendations

We respectfully submit that some of the recommendations and findings of the *Environment and Natural Resources Committee, Parliament of Victoria Inquiry into the Impact of Public Land Management Practices on Bushfires in Victoria* (June 2008)⁵⁴ are false and misleading, namely:

Recommendation

5.1:.....177

That the Department of Sustainability and Environment and its partner agencies conduct or commission research, and a possible trial study, to determine the potential of thinning and other silvicultural practices – whether alone or in combination with prescribed burning – as a means of reducing fuel loads and as a bushfire management strategy in Victoria’s forests.

Finding 2.4:.....116

The Committee finds that there is no evidence of an adverse impact by forestry operations on the level of prescribed burning.

Finding 5.2:174

That the reduction in the extent of timber harvesting on public land and associated loss of local knowledge and expertise, machinery available for fire prevention and suppression, and a decline in the number and accessibility of vehicle access tracks has had a negative impact on land and fire management, particularly the bushfire suppression capacity of relevant agencies.

⁵⁴ *Environment and Natural Resources Committee, Parliament of Victoria Inquiry into the Impact of Public Land Management Practices on Bushfires in Victoria* (June 2008)
http://www.parliament.vic.gov.au/enrc/inquiries/bushfires/Report/Bushfires_June_08.pdf

4.1 The ENRC ignored the negative wildfire elements associated with native forest logging practices.

The terms of reference for the ENRC 2008 report required the committee to examine if logging practices impact on the scale and intensity of bushfires on public land:

Terms Of Reference

(8) the impact of traditional land uses such as timber harvesting, grazing, four-wheel-driving, hunting, camping, mining and prospecting on the scale and intensity of bushfires and the ability of relevant agencies to respond;⁵⁵

The Parliamentary Committee chose to almost totally ignore and dismiss the adverse impacts of logging practices on elevating wildfire on public land, choosing instead to focus only on the positive aspects.

Within the ENRC 2008 report there is no attempt to investigate, analyse, question or discuss the negative impacts of logging practices that elevate wildfire on public land.

It appears that the advice from Department of Sustainability and Environment (DSE) Submission 168 (page 22) was accepted: that the DSE has everything under control, trust us there is no need to worry!

Timber Industry

The timber industry in Victoria has been closely involved with fire in Victoria's forests since its inception. Initially, timber harvesting represented somewhat of a fire risk, the most prominent example being the findings of a Royal Commission into the 1939 bushfires that pointed to sawmill operations in remote forests contributing to the extensive fires of that season. Now, however, few fire ignitions are reported from this source, and risk is low, as the industry is governed by modern workplace standards, codes of practice and accreditation, and measures such as constraints on days of Total Fire Bans exist.⁵⁶

The ENRC 2008 Report⁵⁷ provided some statistics on fire starts attributed to prescribed burning (includes regeneration burns) and machines (presumably logging equipment), but did not bother to question or inquire if logging practices are involved in fire starts, despite the terms of reference. (For more on fire starts, see section 1.1 above)

DSE submission 168 to the ENRC is totally contradicted by DSE submission 168C which acknowledges that there are negative elements to logging practices that elevate wildfires risk. From submission 168C:

⁵⁵ Ibid, page 1.

⁵⁶ DSE Submission 168 to ENRC 2008 page 22.

⁵⁷ ENRC, above n 54, page 22.

6. What impact has the cessation of timber harvesting had on the likelihood or occurrence of fire?

Anecdotes and records indicate both positive and negative impacts of forestry activities on the occurrence of fire.

There are known instances where forest operators have arrived early on the scene of a fire while traveling to and from work, or, when working in close proximity to a fire, have been able to assist with rapid initial attack and containment through working with other fire and land managers. Having heavy equipment like bulldozers, skidders and excavators readily available has also been significant in the early containment of fires.

There are also instances and records of forest industry activities impacting on starting fires through ignition from machinery and chainsaw operations. Opening new forest roads and tracks increases access, and while this can assist in getting to fires, it can also lead to more ignitions. Close to 25% of human caused fires on public land occur within 100 meters of roads and tracks and nearly 90% occur within one kilometre.⁵⁸

Again DSE puts the proposition they have the situation under control, no scrutiny is required:

The positive and negative impacts arising from forestry activities are manageable if risks and trade-offs are understood and managed.⁵⁹

However at times DSE clearly fails to manage fires started by logging practices; the most recent example being the Cann River wildfire in December 2009.⁶⁰ (Also see our May 2009 submissions, section 2.6 for examples where wildfire has been started by logging practices.)

Conclusion: The ENRC failed to examine the negative role logging practices play in elevating wildfire risk.

⁵⁸ DSE Submissions 168C to ENRC 2008, page 13.

⁵⁹ Ibid.

⁶⁰ See section 1.1 of this submission.

4.1.1. CASE STUDY: Is there still competition for qualified persons to conduct fuel reduction and logging coupe burn offs?

As discussed on pages 35 and 36 of our May 2009 submissions both the Esplin 2003 and the ENRC 2008 acknowledged the historic competition between logging coupes burns off and fuel reduction burning. The ENRC 2008 report takes at face value the advice from DSE and VicForest that the conflict has now been resolved by simply making VicForest pay for logging coupe burn offs.

However it was acknowledged in DSE submission 168 E (page 5) that qualified DSE personnel are effectively 'employed' by VicForest to assist and manage logging coupe burns offs. This may result in a lack of qualified staff to actually conduct fuel reduction burning.⁶¹

In May 2009 the Government announced more money (\$52.7 million) was needed to conduct fuel reduction burns with a focus on training and employing more people.⁶² This indicates that the ENRC 2008 was incorrect; rather that in July 2008 there were still not enough resources available for fuel reduction burning and that post-logging burns may still have been diverting human resources away from fuel reduction burning.

As shown by the 2003 Esplin Inquiry, in the past logging practices have diverted resources away from fuel reduction burning. This is in itself evidence of an adverse impact of logging practices on fuel reduction burning.

Even if it is accepted that DSE and VicForests have now resolved the situation for the moment, we submit that there is still potential for conflict over prescribed burning resources in the future. What if the issue re-occurred? What happens if logging rates increase and more resources are needed to do logging coupes burns in the future? In such a case would extra people be trained for fuel reduction burning? Or would resources again be diverted to conduct logging coupes burn offs leaving fuel reduction burns again under resourced?

⁶¹ DSE submission 168E to ENRC 2008, page 5.

⁶² <http://www.premier.vic.gov.au/component/content/article/6751.html>.

4.2 Finding 2.4: Prescribed Burning

Finding 2.4 - *The Committee finds that there is no evidence of an adverse impact by forestry operations on the level of prescribed burning.*

The ENRC 2008 Report (page 116) states:

The Committee received no evidence of an adverse impact by forestry operations on the opportunities for fuel reduction and ecological burning.⁶³

This statement is false, as discussed above. DSE submission 168C provided evidence that mature regrowth 10 years after logging burn vigorously making prescribe burning more difficult.

Young regrowth (less than 10 years of age) often carries low fuel loads following harvesting (provided the area has been previously slash burnt). As fuel loads increase with time since establishment more moisture is trapped under the developing forest canopy, making these areas relatively safe from fire under moderate, and sometimes high, fire danger conditions. However, more mature regrowth does burn vigorously as fire danger increases, and there are periods in the forest growth cycle where regrowth is both flammable and susceptible to damage by fire. While in this flammable and vulnerable state, the presence of regrowth makes managing prescribed burning more difficult. Patchy regrowth from minor forest uses is most difficult to protect.⁶⁴

This evidence was ignored. These observations are backup by scientific research, as outlined in section 1.2.3 of these submissions.

As discussed in section 1.2.3 of these submissions, logging within fire management zones 1 and 2 is banned as planning under the Forest Management Plan has already accepted regrowth after logging is a fire hazard difficult to manage.

Why did the Parliamentary Committee not follow up with more questions? For example they could have asked pertinent questions such as:

Q: What levels of fuels reduction burning occur within areas with a history of logging?

Q: Are fire management zones 1 and 2 appropriate? Have the size and location of fire management zones 1 and 2 been compromised in favor of maximising the areas available for logging.

Q: Does logging in wet, moist or dry forests make fuel reduction and general fire management easier or harder?

⁶³ ENRC, n 54, 116.

⁶⁴ ENRC 2008 DSE Submissions 168C page 13.

4.3 Finding 5.2 ENRC falsely blamed National Parks for logging industry decline.

Finding 5.2.

That the reduction in the extent of timber harvesting on public land and associated loss of local knowledge and expertise, machinery available for fire prevention and suppression, and a decline in the number and accessibility of vehicle access tracks has had a negative impact on land and fire management, particularly the bushfire suppression capacity of relevant agencies.

Read on its own, Finding 5.2 does acknowledge the fact there has been a decline in the timber industry workforces. However what is in dispute is the analysis and justification to reach this conclusion, that National Parks and reserves are the main reason for this decline:

The reduction of timber harvesting on public land in recent decades was the traditional land use most commonly identified by stakeholders as having negative implications for bushfire severity and the ability of agencies to respond.⁶⁵

This Parliamentary Committee decision seems to be based on the idea that those who talk loudest must be correct.

As noted in the overview of stakeholder evidence... a significant number of stakeholders stated that the restrictions placed on forestry operations in public native forests had increased the risks associated with bushfires, due to the loss of a workforce with a significant degree of local knowledge, skill and experience in bushfire prevention and suppression.⁶⁶

Despite inputs for conservation groups, it was the advice and views of Timber Communities Australia (TCA) , Timber Towns Victoria (TTV) the Victorian Association of Forest Industries (VAFI) and National Association of Forest Industries (NAFI) which were extensively referenced as fact.⁶⁷

Advice from Tolhust and David Evens⁶⁸ acknowledged that a reduction in the size of the logging industry had occurred. However they did not finger point National Parks in the same way TCA and TTV and VAFI and NAFI clearly did.

The Parliamentary Committee is clear that it did not independently check the validity of claims made by pro-logging groups. They decided to simply assume the claims by these industry groups be fact.

⁶⁵ ENRC, above, n 54, 169.

⁶⁶ Ibid, 171 – 172.

⁶⁷ Ibid, 163, 172, 174,175.

⁶⁸ Ibid, 165.

A detailed analysis of the extent and causes of the decline in the area of public native forest available for timber harvesting is beyond the scope of the current report. The main reason for this decline is the process of land tenure change – that is, an increase in national parks and other conservation reserves – which has occurred in recent decades and which has effectively brought timber harvesting to an end in various areas of public native forest.⁶⁹

This view adopted by the Parliamentary Committee ignored advice other agencies that contradicted claims made by Timber industry groups.

The land and fire agencies acknowledged the need for a degree of access to public land for traditional land uses but also noted the bushfire risks associated with some uses and the need for regulation. While the agencies provided little evidence of the extent of the decline in traditional land uses, in general they did not endorse the view that the decline had contributed to the scale and intensity of recent bushfires or that it had detracted from the ability of agencies to respond.⁷⁰

As discussed within our May 2009 submissions,⁷¹ and section 2.4 above, the largest single cause of job losses has been the previous unsustainable levels of logging to meet market demand, industry rationalisation and mechanisation to stay competitive.

In 2002 the State Government substantially cut back logging rates and rationalised the industry. No additional areas of forest were reserved in 2002 under the Our Forests Our Future policy. An Auditor General's Report found that 175 applications to exit the industry under the OFOF cut backs were received, and commented this was an oversubscription of industry participants wanting to exit the industry:

A total of 175 applications for assistance were received. Applicants included harvest and haulage contractors, secondary processes and business providing ancillary and support services to the timber industry.⁷²

Yet the Parliamentary Committee falsely nominated the OFOF process as one that reduced the areas available for logging when it clearly did not.⁷³

Some of the more significant developments which have reduced the area of State forest available for timber harvesting in recent decades include:

the Victorian Government's Our Forests, Our Future strategy, which introduced a reduction in sawlog volumes of approximately one third across the state in 2002;

4.4. Recommendation 5.1: Thinnings

⁶⁹ Ibid 169.

⁷⁰ Ibid, 165 -166.

⁷¹ See page 31.

⁷² Auditor General Report May 2005. Section 9 Administration of the contractor assistance program, 181.

⁷³ ENRC, n 54, 170.

Recommendation 5.1.

That the Department of Sustainability and Environment and its partner agencies conduct or commission research, and a possible trial study, to determine the potential of thinning and other silvicultural practices – whether alone or in combination with prescribed burning – as a means of reducing fuel loads and as a bushfire management strategy in Victoria's forests.

Section 3 of this submission details how thinning operations elevate wildfire risks.

Recommendation 5.1 could promote an expansion of commercial thinning under the guise of reducing fire risk on public land despite the established evidence and fire management strategies that acknowledge thinning makes the wildfire threat greater for both wet and dry forests. (See section 3 above.)

The VAFI submission to Royal Commission refers to Recommendation 5.1.⁷⁴

Recommendation 5.1 was made with no evidence, something the parliamentary committee admitted:

The Committee was provided with little evidence regarding the effectiveness of timber harvesting in mitigating the scale and intensity of bushfires.⁷⁵

The Parliamentary Committee reference Lindenmayer and Parks Victoria statements and research which dismiss the idea that logging practices actually help in any way to reduce wildfire risks.⁷⁶

DSE refers to USA and Europeans studies regarding thinning but makes no commitments that thinning is of any value in Australia. DSE does not refer to studies and practices already conducted in Australia:

It is something we will be looking at in the future — whether actually physically thinning the forest will actually reduce fuel loads. It is not definitive, and there is work going on with it.⁷⁷

Yet the recommendation was written as positive affirmation that logging practices though thinning assist in wildfire suppression when in fact the evidence and current planning assumes they have an overall negative impact. The recommendation fails to acknowledge existing research and management practices in Tasmania that already accept thinning elevates wildfire risks. (See Section 3 above.)

⁷⁴ Page 51, VAFI submission to Royal Commission.

⁷⁵ ENRC, above, n 54, 176.

⁷⁶ Ibid.

⁷⁷ Ibid, 177.

5 Rainforests act as natural fire breaks

This section provides further material to support our May 2009 submissions⁷⁸ that rainforest plant communities have a natural resistance to wildfire and that this assists wildfire suppression efforts.

5.1 Observations from field Trips

MWCN conducted various field trips conducted in May and June 2009 to determine the impact of fires started on Black Saturday on Cool Temperate Rainforests that grow among the wet ash forests of the Central Highlands.

Appendix B Figures B3-B9 provides photographic evidence of rainforest stands that have been affected by various intensities of wildfire.

The following observations were made:

- Under moderate to high fire behaviors, rainforests were behaving like natural wildfire breaks; the core areas had not been burnt or scorched (See figures B3,B4,B5,B6). The vegetation within these core areas was green and unaffected by fire. This supports the analysis of Google Earth imagery **Appendix B Figures B1 & B2** (which were also shown in our May 2009 submissions).
- The general observation was that the myrtle trees (rainforest trees) that were affected by fire had generally been browned off by fire (scorched) but had not combusted. Such behaviour shows that for rainforest canopy trees such as myrtles, they do not readily ignite hence do not contribute additional fuel to an already established wildfire. Much of the understory vegetation has also behaved this way. (See **Appendix B Figures B3 & B4**).
- It appears that fire loses intensity as it enters rainforest stands. The larger the rainforest stand, the harder it is for fire to burn/scorch the whole rainforest stand. The greater the size and intensity of the approaching fire the further it would penetrate. Fig B3 and B6 show impact of high to extreme fire activity. **Appendix B Figures B4 and B5** show impact of moderate fire activity.
- There were instances where small stands of rainforest myrtle crowns had combusted under the most extreme wildfire conditions. It appears rainforests myrtles would only combust under these extreme conditions. (No photos available).
- Under moderate to high fire conditions, streams or water courses did not act as fire breaks. However where rainforest vegetation grows along streams the fires were often stopped from burning riparian vegetations. (**See Appendix B Figure B5**).

⁷⁸ See section 2.7 of May 2009 submission.

- By July 2009, five months after the fires, coppicing of trees was observed to have started to grow on myrtle trees that had been severely scorched (See **Appendix B Figure B7**). In general this coppice was at ground level. It was observed, for the majority of myrtle trees affected by fire, the root structure had survived and the trees were regrowing. Hence the rainforest has not been killed off but was in fact beginning to re-establish on site again. Once the rainforest has reestablished, the degree of fire resistance that was there prior to the fires will have been re-established. How long this will take is not clear.
- There appears to be a lack of understanding that rainforests stop wildfires by evidence that rainforests were bulldozed to make fire breaks during the Black Saturday emergency at the Acheron gap. (See **Appendix B Figure B8 & B9**.)

The above observations confirm the established scientific research by experts as discussed in section 2.7 of our 2009 submissions to the Royal Commission.

Also see section 5.3.6. of *2009 Victorian February fire. A report on driving influences and land tenure* by Chris Taylor.⁷⁹

5.2 Feedback from Department of Sustainability and Environment.

Conversations with various DSE field officers confirm that there is 'unofficial' acknowledgment that the natural fire resistance characteristics of rainforests plant communities can assist fire fighting efforts.

- Conversation with DSE officer Steve Henry (Orbost) who helped fight the Bunyip fires. Henry mentioned that rainforest stands were utilised as a natural fire breaks to control the extent of back burning operations.
- Conversation with Nigel Brennan (DSE Powelltown) who mentioned that the prescriptions to construct fire breaks in the Central Highlands avoid cutting through rainforest stands as this is considered to be counter productive.

5.3 Impact of Logging practices on Rainforests

Cool Temperate Rainforests are recognised under the Flora and Fauna guarantee Act 1988 as a threatened plant community. The Rainforest Action Statement⁸⁰ includes a strategy to protect Cool Temperate rainforests. This strategy acknowledges that logging practices can threaten rainforests.⁸¹ The threat from logging practices includes 'changes to rainforest micro climate' which may make rainforest drier and more fire prone.

⁷⁹

<http://vnpa.org.au/admin/library/attachments/PDFs/Reports/2009fires/Fire%20Report%20Lo%20Res%20140909%20lo.pdf>

⁸⁰ Action Statement No. 238 released June 2009

[http://www.dse.vic.gov.au/CA256F310024B628/0/E7EA435E8BA3EF89CA2575DD0007D8D2/\\$File/238+rainforests+and+myrtle+wilt+2009.pdf](http://www.dse.vic.gov.au/CA256F310024B628/0/E7EA435E8BA3EF89CA2575DD0007D8D2/$File/238+rainforests+and+myrtle+wilt+2009.pdf)

⁸¹ Ibid, 10.

Hence logging practices may be reducing the natural fire resistance of rainforests and reducing the natural fire resistance within ash forested landscapes where logging is permitted. Under this Action Statement is a requirement to investigate threats to rainforests as a way of establishing if current protection measures are adequate.⁸²

However there is no requirement to investigate if rainforests assist in reducing wildfire risk in the landscape.

5.4 Conclusions

We respectfully submit that the Royal Commission should recommend an investigation and/or research into the potential for rainforests to reduce and/or suppress wildfire in wet ash forests.

This study should investigate the potential for the establishment of natural rainforest wildfire breaks and the best management of rainforest and the surrounding non-rainforest forest ecosystems to maximise the rainforest's natural ability to suppress wildfires. The role of logging practices in reducing and undermining the ability of rainforest to act as natural wildfire breaks needs to be including in the investigation.

⁸² Ibid, page 15 Actions 1-4.

APPENDIX A

2009 Black Saturday wildfire impact on logging coupes in State forests.

**Field trip photos
March – May 2009**

Note: higher resolution photographs can be supplied if requested.

Thomson dam area. Example of 5 year old regrowth after clearfell logging reveals that a young, dense even-aged 'plantation' of young trees has established. This area was not burnt by Black Saturday fires.



Thomson Dam area: 17 year old clearfell logging regrowth: young, dense even-aged 'plantation' of young trees has grown with a high stand density. This area was not burnt by Black Saturday fires.



This 4 year old re-growth coupe in the Acheron gap area did not burn under moderate fire conditions.

This photo taken in May 2009 in the Acheron Gap State forest area. Coupe number: 08/309/009/001

Fire was at a moderate ground level with no crown burning of mature forest. Most ash trees were not killed and are assumed not to be subjected to salvage logging operations.

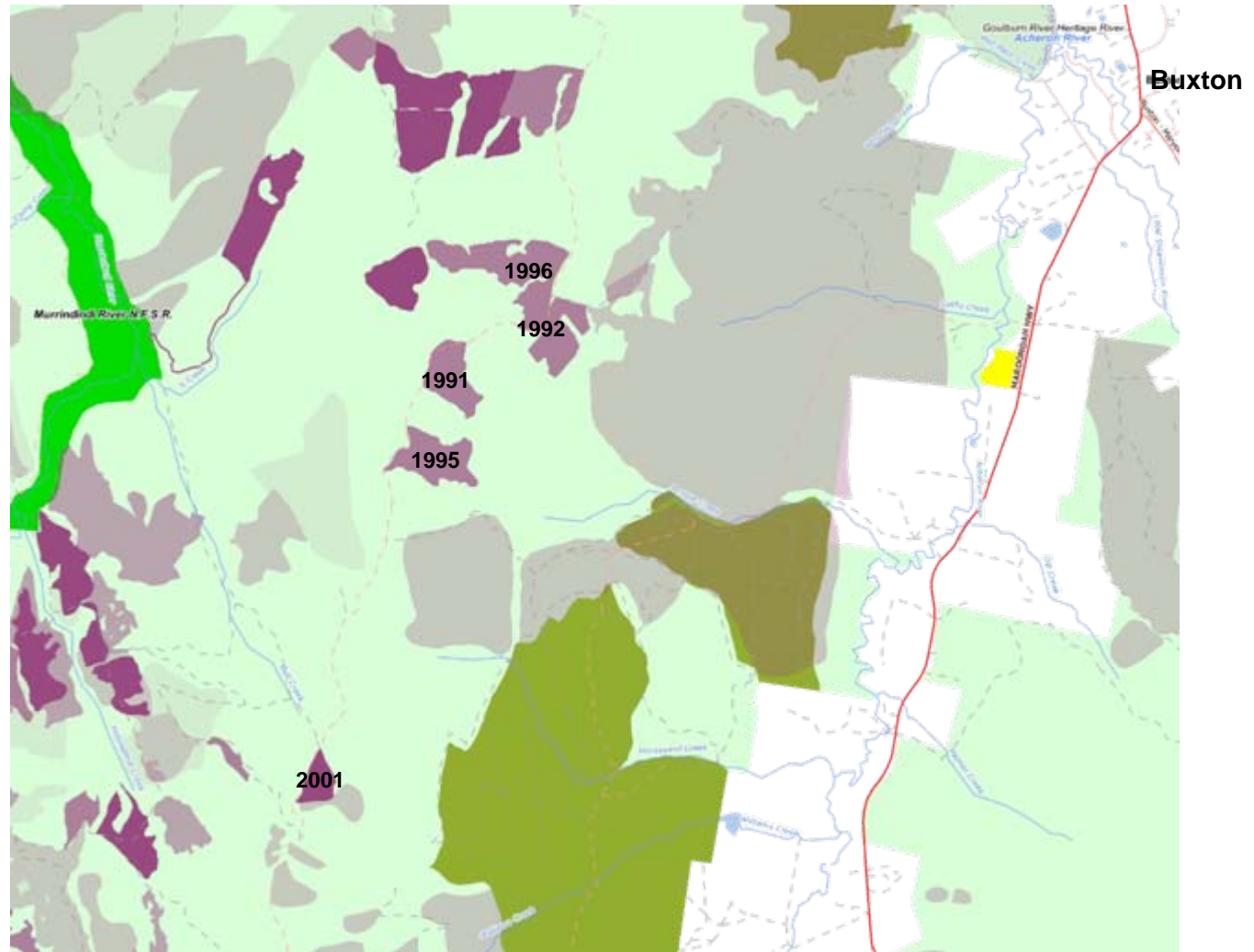


Investigation of re-growth on five logging coupes burnt on Black Saturday (7 February 2009) in the Toolangi State forest area where the Murrindindi fire complex severely burnt native forests. Toolangi area was burnt a few hours before Marysville.

All photos taken on 29th March 2009 of coupes clearfell logged in 2001, 1995, 1991, 1992 & 1996.

Toolangi State Forest.

Purple represents areas already clearfell logged



**2001 logged ash regrowth coupe (08/307/002/0022). Looking east towards Buxton / Marysville.
Black Saturday fire has crown-burnt all the eight year old regrowth. Crown-burning is evidence of
a very hot fire.**



2001 logged ash regrowth coupe (08/307/002/0022). Looking north. Fire has crown burnt eight year old ash regrowth except blackwood in the foreground.

Note the mature forest that has not been clearfell logged in the background did not crown-burn.



1995 logged ash regrowth coupe (08/307/503/0020). Looking north.

Fire has severely crown-burnt 14 year old ash regrowth. Note nearby mature ash forests also crown-burnt.



**1991 logged mixed species regrowth coupe (08/307/503/0006). Looking East.
Fire has severely crown-burnt 20 year old mixed species regrowth.**



**18 year old logged mixed species regrowth coupe (08/307/503/0006) in background. Looking east.
Nearby mature forest in foreground did not crown-burn.**



13 year old logged regrowth coupe (08/299/979/0023) left of car crown-burnt. (looking north)
17 year old regrowth coupe (08/306/503/0007) right of car did not crown-burn.



13 year old regrowth coupe (08/299/979/0023) looking south of last photo (right hand side crown-burnt). Left hand side includes 1992 logged regrowth coupe and mature forest that did not crown-burn.

Salvage logging

The mature forest shown in this picture, did not crown-burn, and is now a salvage logging coupe:
08/306/503/0001



General observations for ash type forest re-growth on clearfell logged coupes burnt on Black Saturday

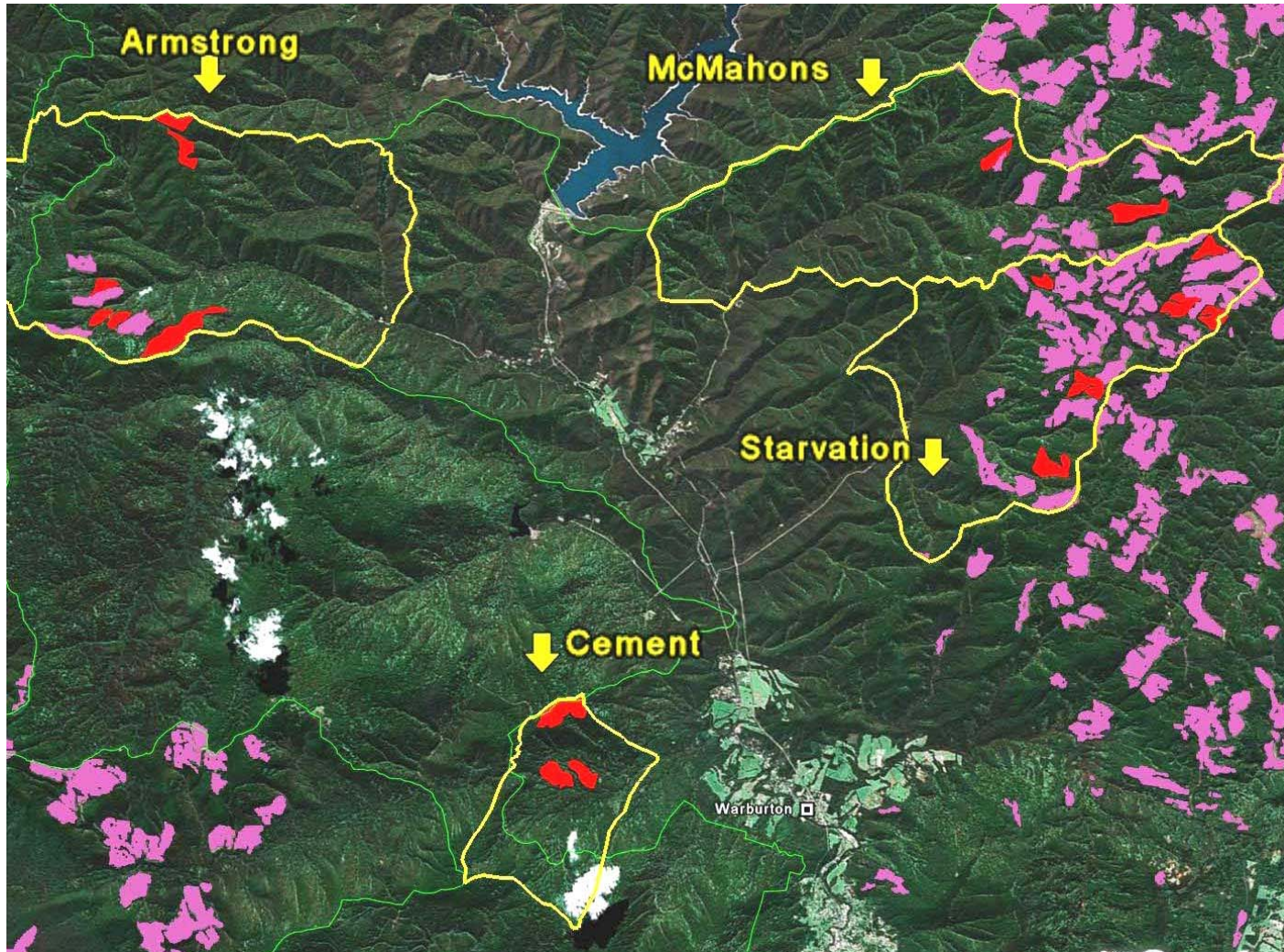
Observations:

- Clearfell logging coupes over nine years old tended to burn vigorously. Logged coupes in the path of the Black Saturday fire storm were severely crown burnt.
- Regrowth on clearfell logging coupes tended to crown-burn easier than mature forest which had not previously been subjected to logged.
- Clearfell logging coupes only a few years old may have a degree of temporary fire resistance that disappears as the re-growth matures.


The field observations strongly support the scientific evidence that the clearfell logging in wet ash forests elevates wildfire risks in the landscape. (See section 1.2.1)


Extensive logging has occurred in the upper Yarra sub-catchments (Starvation and McMahon's) and logging is spreading into new areas (Cement and Armstrong).


Has this logging elevated the wildfire risk in the Melbourne water supply catchments?



Key to Google Earth image overlays.

State forest 
catchment boundary

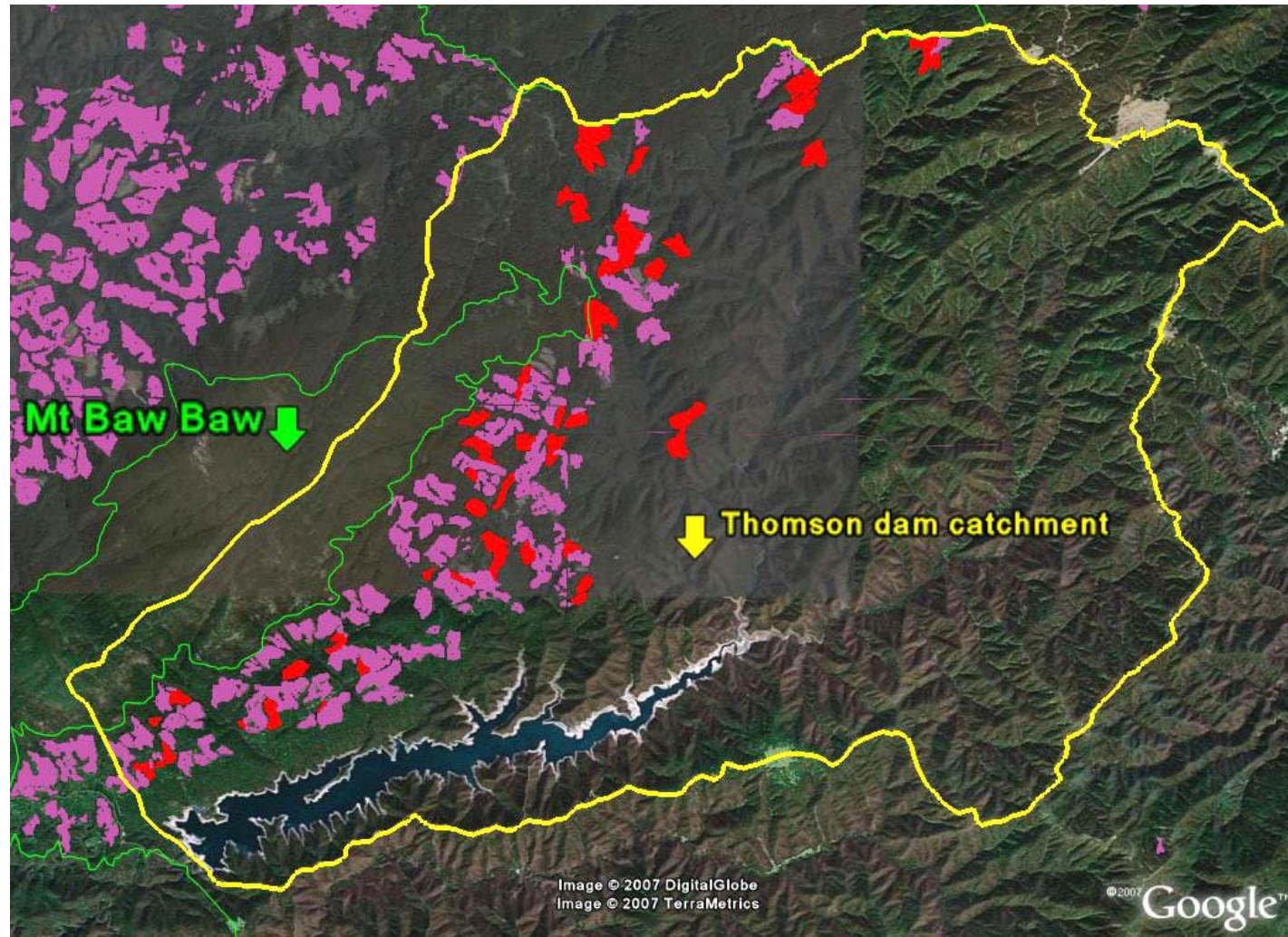
Areas already
clearfelled logged 

Planned clearfell
logging (to 2011)
does not include
salvage logging. 

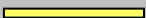
Analysis of State Forest in the Thomson catchment shows logging is concentrated in the high rainfall slopes of Mt Baw Baw.


Figure A13


Has this logging elevated the wildfire risk in the Melbourne water supply catchments?



Key to Google Earth
image overlays.

State forest 
catchment boundary

Areas already
clearfell logged 

Planned (to 2011)
clearfell logging 

APPENDIX B

2009 Black Saturday wildfire impact on Cool Temperate Rainforests in the Central Highlands.

Field trip photos May & June 2009

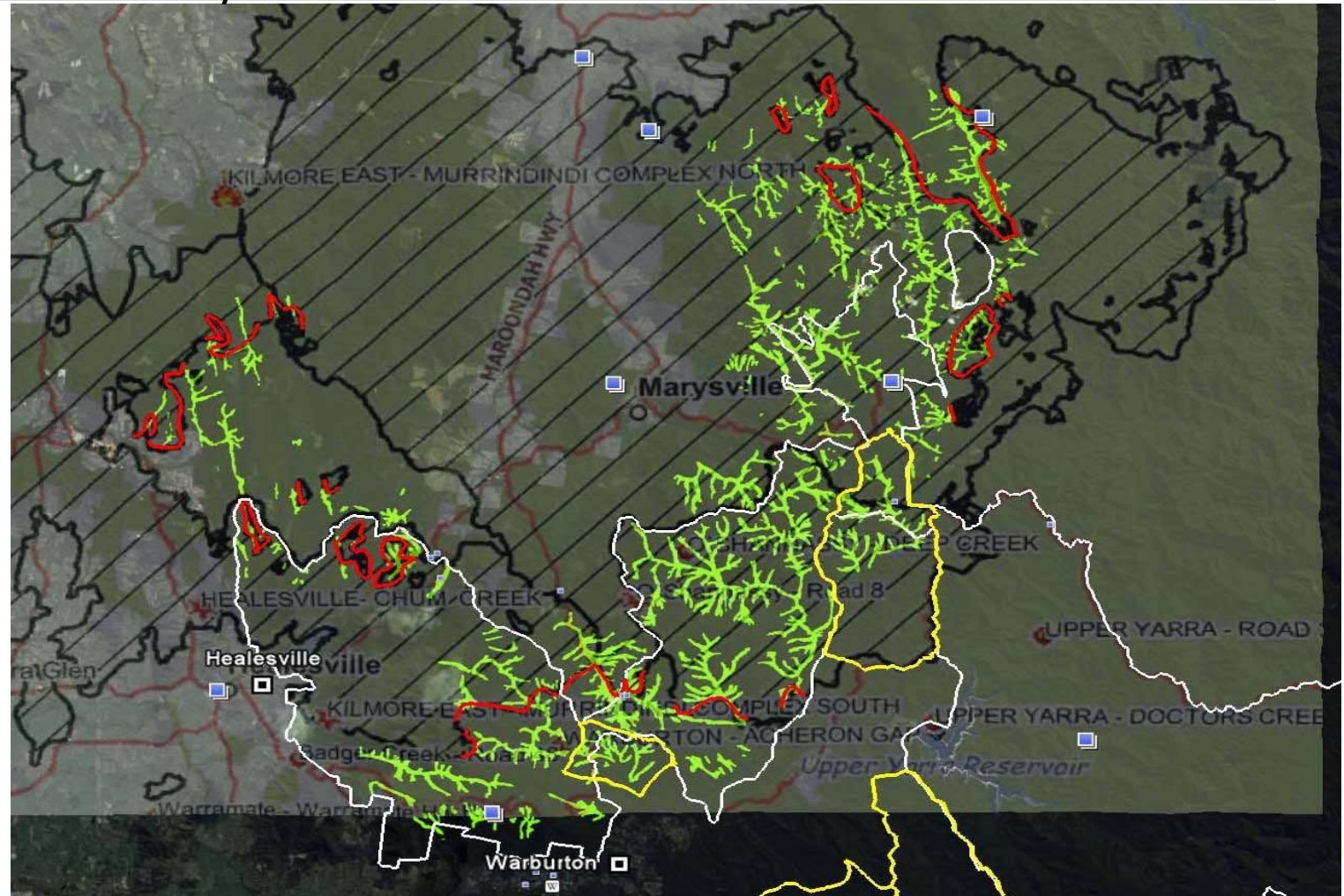
Note: higher resolution photographs can be supplied if requested.

Google Earth map showing the location of rainforest stands (light green lines) with a map showing the extent of the Kilmore and Murrindindi fire (black cross hatch).

The red lines represent where the edge of the fire coincided with rainforest stands.

The white line is the National Park boundary.

This map suggests that rainforests can act as a natural fire break.

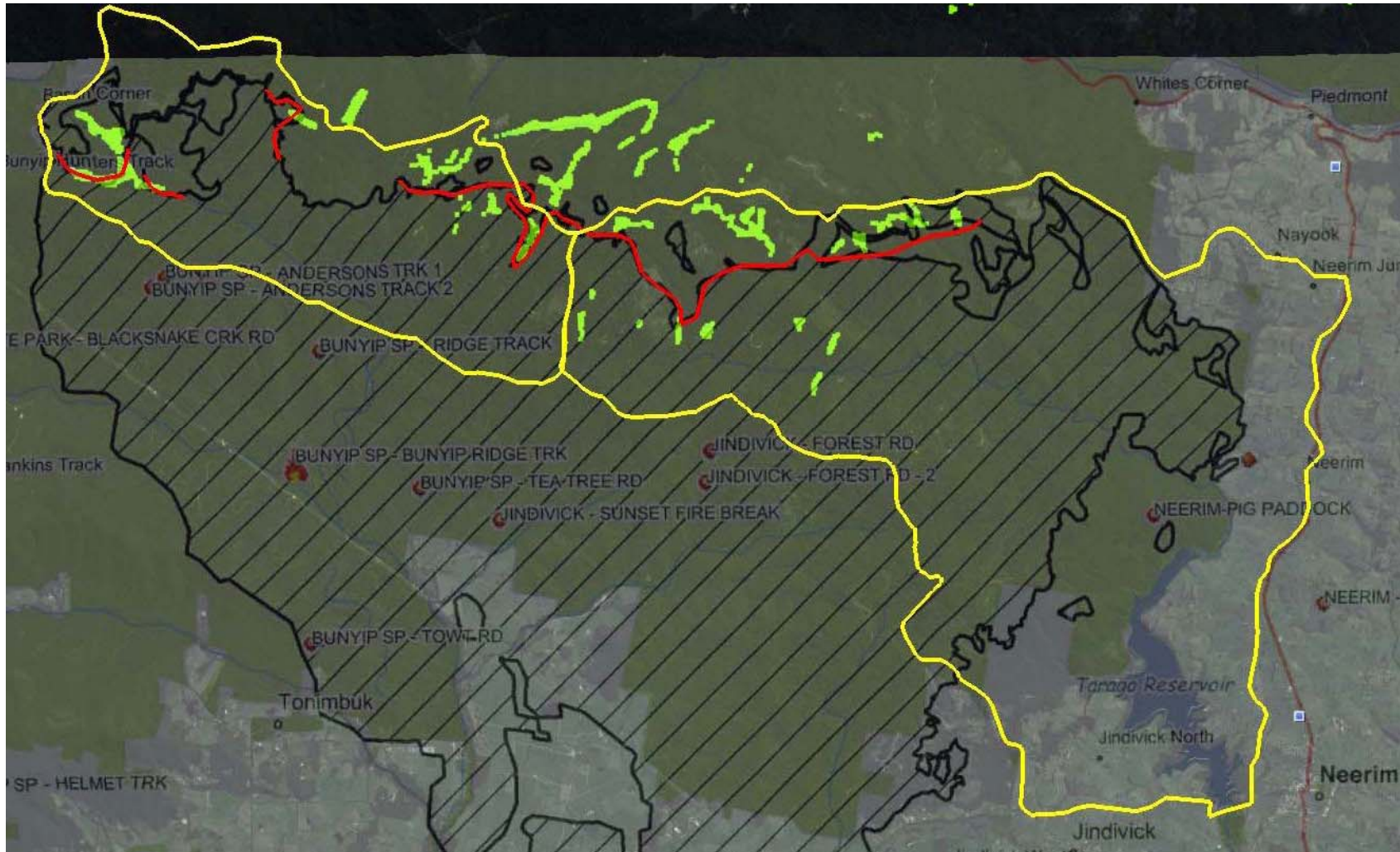


Google Earth map shows the location of rainforest stands (light green lines) with a map showing the extent of the Bunyip fire (black cross hatch).

Figure B2

The red lines represent where the edge of the fire coincided with rainforest stands.

This map suggest that rainforests can act as a natural fire break.



Black Saturday (severe) wildfire near Camberville (Culvert walk) in the Armstrong catchment has only partially burnt the rainforest stand. Myrtle beech trees and tree ferns on LHS now browned off. Rainforest vegetation did not easily combust despite being subjected to extreme radiant heat that caused severe crown scorch within the large rainforest stand.



Example of moderate fire stopped by cool temperate rainforest rainforest vegetations, Acheron gap area. Myrtle beech trees did not combust (LHS of photo) despite being subjected to moderate crown scorch.



Acheron Gap area. Example of moderate fire burning up to the edge of a stream shown in (LHS photo). However the fire failed to burn small stand of cool temperate rainforest growing along the same stream (RHS photo). Therefore a stream does not stop fire, but rainforest can.



Photo taken from road to Lake Mountain about 10 km from Marysville (see car top RHS of picture).

Severe Black Saturday wildfire has crown scorched rainforest stand. However the central core of rainforest is still green and alive (LHS centre of photo) despite extreme fire conditions that destroyed nearby Marysville. Myrtle beech trees did not combust. This rainforest community has survived although has diminished in size. Over time the rainforest will spread again.



Almost every myrtle scorched or burnt had coppice at ground. This indicates this rainforest species can regenerate from an existing trees rather from seed.

Over time the fire resistance of the original rainforest will be restored provided another fire does not occur.



Example of fire break bulldozed through a rainforest stand at the Acheron Gap, constructed during the Black Saturday emergency. Normally firebreaks are not made through rainforest.



Combustible debris left after firebreak construction will undermine the ability of rainforest stand to resist wildfire.

Damaged myrtle trees are now vulnerable to myrtle wilt dieback disease.

