

BUSHFIRE DEATH TRAP

THE ELTHAM GATEWAY

*“...trying to set fires,
rather than prevent them”*

*Tim Malseed
David Packham*

2013

www.elthamsdeathtrap.com

“...trying to set fires, rather than prevent them”

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Tim Malseed,

Eltham Gateway resident & corresponding author
timalseed@gmail.com

David Packham,

Adjunct Senior Research Fellow, School of Geography and Environmental Science, Monash University
holleyhill@bigpond.com

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Foreword

Two weeks after Black Saturday, the Prime Minister of Australia was asked in parliament:

“My question is to the Prime Minister, and I recognise that he answered part of this to the member for McEwen earlier. My question relates to the Prime Minister's comments at yesterday's memorial service that successive governments have failed in terms of bushfire management, and also comments made by Wurundjeri elder, Auntie Joy Murphy, from Healesville who said that Aboriginal people historically burned the land every seven years for 'cleansing and regrowth', but Black Saturday was a 'torture of the land'. Prime Minister, could you elaborate on your comment and, given that every inquiry since 1939 has focused on fuel reduction in fire-prone areas, do you believe it is time we learnt from Aboriginal Australians, whose firestick management practices created the bush environment that white Australians are attempting to modify to a landscape that has never existed?” Tony Windsor Independent MP

Prime Minister Kevin Rudd replied to the Question without Notice:

“Given that our Aboriginal brothers and sisters have occupied this continent for 40,000 years, there is great wisdom to be learned. We also need to ensure that that wisdom is combined with that of early pioneering families ... these things need to be drawn together. What we cannot allow to happen is for this to drift on into the future without resolve. As a parliament and as a government we need to bring these things together and to agree on a course of action” Edited

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Bushfire Death Trap - The Eltham Gateway

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Links to support documents - www.elthamsdeathtrap.com

Executive Summary

The Eltham Gateway is part of an Australian metropolitan suburb 18 kilometres from the city centre of Melbourne, the Victorian state capital. On 7 February 2009, Victoria suffered a number of extreme bushfires, which killed 173 people. It became known as “*Black Saturday*”.

This paper's focus is on the most deadly fire on Black Saturday, the East Kilmore bushfire. If the East Kilmore bushfire had continued its devastating passage into the Eltham Gateway as predicted, then thousands could have been killed and in excess of 100,000 people traumatised (see map below).

Six years earlier in 2003, the East Kilmore bushfire was forecast by two expert independent assessments, which were formally presented to the Victorian Government. The authors of these assessments, David Packham and Rod Incoll, were questioned in detail by a formal Victorian Government Hearing Panel. Their expert advice that fuel be reduced to 10 tonnes per hectare (t/ha), was not actioned.

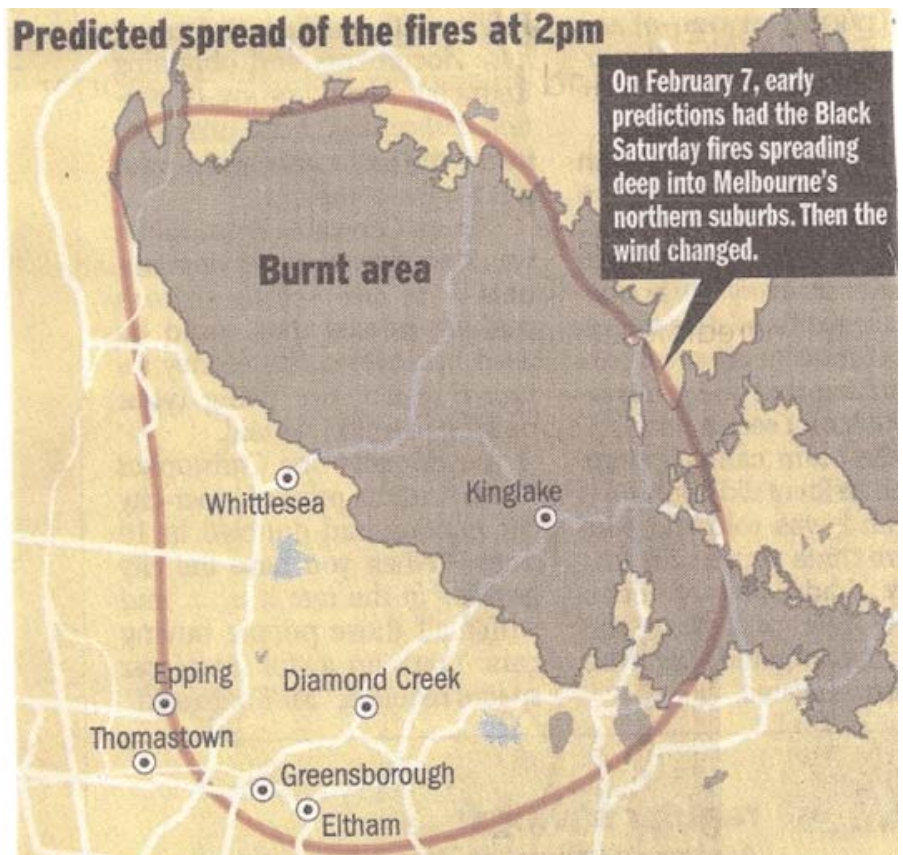
Following Black Saturday's extreme bushfires, the \$90 million Victorian Government Inquiry did not question Packham and Incoll about their earlier predictive assessments. Nor did the Victorian Government Inquiry question those Planning Ministers “...with specific responsibility...” for extreme bushfire mitigation. Further, the Aborigines' culturally entrenched management of extreme bushfire over the millennia was

almost completely ignored and Western Australia's success at avoiding loss of life for 50 years was mentioned, but not recommended. In the opinion of this paper, the Victorian Government Inquiry's deliberations were inadequate about some specific issues of expert advice, responsibility and governance. It was publically labeled a “...*whitewash nobody even noticed*” (Journalist, Andrew Bolt).

Eltham's known history of extreme bushfire mitigation starts with the Aborigines' cool burns, followed by white settlers' use of fire breaks and non-flammable vegetation, and in more recent times, the Victorian Government's down-grading of appropriate extreme bushfire risk management.

From approximately 1980, the Victorian Government has

effectively mandated an increase of landscape level, fuel-generating vegetation in the urban rural interface, increasing the risk of extreme bushfire becoming extreme suburban fire. The uncontrollable risk factors like drought, wind and ignition, often distract the Victorian Government from addressing the one controllable risk factor - fuel, which is made up of dry grass, leaves, bark and twigs. The Eltham Gateway's southerly emergency egress from Victoria's north wind-driven extreme bushfires, is a single, gridlock prone, bridge over Melbourne's main river. The flammable tree shrouded egress route to the bridge will predictably become a death trap in an extreme bushfire, because of the “...*radiant heat load*” (Victorian Government's “*Radiant Heat and Setback Measurements*”, see page 13).



February 2009 - Eltham's predicted catastrophe (The Age 7 June 09)

Executive Summary (continued)

Without a proper local warning structure, and relying on a locally and internationally discredited centralised emergency management system, the Eltham Gateway is set to become an extreme bushfire catastrophe,

with thousands of fatalities.

The 2012 Victorian Government warning DVD “*Don’t Wait and See*”, predicts horrendous devastation north of the next bridge to the east of Eltham, at

Warrandyte. To avoid that horrendous devastation, this paper recommends the following actions, which are heavy on Victorian Government leadership and light on taxpayer funds.

Recommendations

The Victorian Government should, without further delay:

1. Change the Minister for Planning’s title to “*Planning and Bushfire Mitigation*”
2. Make Law and Policy like “*The Victorian Planning Provisions*”, “*Neighbourhood Character*” and “*Environmental Significance Overlays*” etc. properly consider extreme bushfire.
3. Conduct a landscape level extreme bushfire risk analysis, a minimum of 10 km north and west of the Eltham Gateway, and reduce fuel in all areas, to less than 5 t/ha.
4. Adopt the West Australian prescribed burning guide called “*The Red Book*”.
5. Decentralise the Emergency Response Centre to ensure timely, locally specific information to Eltham Gateway region residents.
6. Address the “*Leave early*” policy, and take responsibility for the risk of landscape level high fuel, and not make individuals and families responsible.
7. Make main emergency access and egress roads leading to the bridge crossing the Yarra River safe from potentially fatal levels of “*radiant heat load*”, in an extreme bushfire.
8. Develop an emergency strategy for the Eltham Gateway. Review a four lane one way egress and a river ford emergency vehicle access.
9. Address roadside and electricity asset hazard trees and ensure flammable trees do not overhang and fall on main emergency egress roads and electricity assets.
10. Draft a format for community participation in micro scale prescribed burning, and monitoring of the biodiversity enhancement benefits.
11. Undertake a probability of survival analysis of houses and gridlocked cars, in the Eltham Gateway, as a database to determine more precisely the risk of extreme bushfire.
12. Collate the data from Recommendations 1 to 11 and develop a strategy that will restore a reasonable degree of safety to the Eltham Gateway residents.

The Eltham Gateway

The Eltham Gateway is part of an Australian metropolitan suburb, on the urban-rural interface of the Victorian State capital city of Melbourne. At 18km northeast of the centre of Melbourne, the suburban area is generally timbered, with some homes being on properties of an acre or larger. The Eltham Gateway is the general area either side of the main road, which extends for about 3km between the bridge over the river and the shopping centre. The area has undulating terrain, with height contours ranging from 20 to over 100 metres. The feature that makes the Eltham Gateway a death trap is the traffic gridlock prone bridges from both north to south and west to east.

The Eltham Gateway is a culturally important area, being the centre of Australia’s mud brick house movement, and a well known arts and craft community with its focal point, the artists colony Montsalvat. A popular miniature railway and a number of significant heritage buildings are also located within the Eltham Gateway. At the southern end and extending to the north, is the Diamond Creek floodplain, with a mixture of sports grounds, parks and native bush. The native bush covered banks are often embedded with housing, that has part canopy cover and extensive fine fuels, sometimes collected on roofs. Community self help initiatives to reduce these landscape level fine fuels to a safer level, is hampered by the Victorian Government.



The Eltham Gateway’s single north to south emergency egress death trap



The Eltham Gateway’s west to east emergency egress death trap

Black Saturday 2009

Black Saturday on 7 February 2009 was Australia's highest fatality extreme bushfire (Engel, Lane, Reeder and Rezny, The Meteorology of Black Saturday, Quarterly Journal of the Royal Meteorological Society, accepted for publication 14 May 2012).

Victoria's human losses on the day were 173 lives and about 10,000 people traumatised. In the Eltham Gateway region, 22% of the municipality was burnt, 41 people were killed, at least 2,000 people traumatised, and extensive economic costs.

A senior Victorian Government firefighter giving **testimony** at the Victorian Government Inquiry set up in the days following the fires, described the early progress of the East Kilmore bushfire:

“...it was actually going to run down through Eden Park right down through Mernda, Doreen, all those sorts of areas (direct line to the Eltham Gateway), but the wind started to swing around. Ken (A Fire Force Captain on reconnoitre) certainly plotted the fire for us. As he drove back to Whittlesea it was actually spotting alongside the car at 100 kilometres an hour. He relayed every few minutes the progress of the fire. But it was a firestorm that he had never seen before”

Black Saturday's extreme bushfire occurred as a result of ignition during extreme temperature, low humidity and high wind conditions. These conditions are combined to make up the Forest Fire Danger Index (FFDI). However, even with an extreme FFDI, there is no fire without fuel. On the day, the landscape-wide high fuel resulted in the fire's extreme

intensity, spread and size, creating convection-driven hurricane strength wind that at times swirled like a tornado. The resulting extreme winds drove burning embers like a red hot sand blaster, making breathing, seeing and hearing near impossible, and stripping clothing, hair and skin off humans and animals.

Any openings in buildings were defenceless under this severe ember attack. Many forest areas burnt at such intensity that they were reduced to blackened spars and sterilised white powder. A number of comparisons, with hundreds of nuclear **bombs** were later used by experts to convey the extreme level of energy released.

The westerly wind change occurred about 6:00 pm, and not the forecast 9:00 pm. If the East Kilmore fire had impacted on the Eltham Gateway and surrounding suburbs, as predicted earlier in the day at the Victorian

Government's centralised Emergency Response Centre, far more deaths, trauma and costs would have occurred.

The reason for this potential disaster was explained by Australia's most informed historian on Aboriginal land care using cool burning. Bill Gammage, who visited the Eltham Gateway in April 2012, is an historian and adjunct professor in the Humanities Research Centre at the Australian National University, and winner of the 2012 Prime Minister's literary award for Australian history. Gammage also won the 2012 Victorian Government Premier's Awards for both Literature and Non-Fiction. Gammage was **asked**: *“In regard to extreme bushfire, in this area of Eltham, how would you rate our risk now, compared with before white settlement?”* Part of Gammage's answer was, *“It's as though you are trying to set fires rather than prevent them”*.



Firefighters surrounded by flame on Black Saturday

The 2009-10 Victorian Government Inquiry

The inquiry was initiated days after Black Saturday. It was reported on by a generally positive Victorian media, assisted by an apparently even larger Victorian Government media management sector. The \$90 million Inquiry did not cross examine the actions of Minister’s for Planning, failed to appropriately acknowledge Aborigines, and paid little regard to Western Australia’s successful extreme bushfire management.

The Inquiry went into forensic detail on response, case histories and the opinions of Victorian government employees. Meanwhile the Victorian Government Planning Minister’s and their Premiers, who had “...the specific responsibility for...” extreme bushfire mitigation planning, did not appear as witnesses.

The Victorian Government were formally advised by experts in 2003 to reduce fuel to 10 t/ha and had not done so. The Victorian Government leaders, former Premier Bracks (2001 to 2007), the then existing Premier Brumby (2007 to 2010), and former Planning Ministers Delahunty (2002 to 2005), Hulls (2005 to 2006) and the then existing Minister Madden (2006 to 2009), did not appear as witnesses at the Victorian Government Inquiry.

The \$90 million Victorian Government Inquiry about the deaths of 173 people even cross-examined two of our local community group leaders, who had no “...specific responsibility

Minister for Innovation, Services and Small Business
Minister for Tourism and Major Events

121 Exhibition Street
Melbourne Victoria 3000
GPO Box 4509
Melbourne Victoria 3001
Telephone: (03) 9651 9900
Facsimile: (03) 9651 9962

Ref: LA329581

Cr Belinda Clarkson
Blue Lake Ward
Nillumbik Shire Council
PO Box 476
GREENSBOROUGH VIC 3088

Dear Cr Clarkson

EXTREME BUSHFIRE MITIGATION PLANNING

Thank you for providing me with a copy of your letter dated 14 October 2011, to the Minister for Planning, the Hon Matthew Guy MP, regarding the responsibility for extreme bushfire mitigation planning.

In recent years, Victoria’s tourism industry has faced a number of natural disasters such as bushfires which have challenged the whole State and had a far reaching and deeply felt impact. I therefore note with interest your support for extreme bushfire mitigation planning.

I also note that the specific responsibility for this matter rests with Minister for Planning, the Honourable Matthew Guy MP, and that you have been in discussions with Minister Guy.

Thank you for bringing this matter to my attention.

Yours sincerely

THE HON LOUISE ASHER MP
Minister for Innovation, Services and Small Business
Minister for Tourism and Major Events

23 NOV 2011

“...specific responsibility...rests with Minister for Planning..”

for...” extreme bushfire mitigation. Meanwhile those who had the power and responsibility for the six years between the independent Packham and Incoll assessments of 2003 and Black Saturday in 2009 were not cross-examined.

Andrew Bolt Australia's most read journalist wrote:

“Why were the Black Saturday guilty not named? The Victorian Bushfires Royal Commission’s final report last weekend is the whitewash nobody even noticed”

“...trying to set fires, rather than prevent them”

The Inquiry stated that in Western Australia “ *There have been no high-intensity, landscape-scale bushfires in these forests (since 1961)...no lives have been lost in forest fires...(and)...this approach has*

better supported biodiversity values”. Despite Western Australia’s record, not one of the Victorian Government Inquiry’s 62 recommendations mentioned Western Australia. Furthermore, Aboriginal success with extreme

bushfire mitigation for at least hundreds and probably thousands of years, was almost ignored. The Prime Minister of Australia’s earlier **plea** “*...there is great wisdom to be learned”*, was not learnt.



Steve Bracks

Premier 1999-2007



John Brumby

Premier 2007-2010



Ted Baillieu

Premier 2010-2013



Mary Delahunty

Planning Minister
2002-2005



Rob Hulls

Planning Minister
2005-2006



Justin Madden

Planning Minister
2006-2010



Matthew Guy

Planning Minister
2010-current

“... the specific responsibility for...(Bushfire Mitigation)...rests with Minister for Planning...”



2013, Unmitigated fuel loads in the Eltham Gateway - dictate bushfire intensity

Eltham’s History of Extreme Bushfire Risk

Aborigines, pre 1835

The primary record of existing conditions before European settlement comes from early white documents. **Analysis** indicates that Aborigines were expert at landscape wide sustainable flora and fauna management, for at least hundreds and probably thousands of years. The principal tools used were embers or fire sticks for ignition and green leafy branches for control. They conducted deliberate, frequent, small fires – which we now call ‘prescribed’ or ‘cool’ burning. *“When we do burning the whole land comes alive again - it is reborn”* (Bill Gammage, *“The Biggest Estate on Earth”*, page 184, Alan and Unwin

2011). In the late 1830’s, early white settlers observed about the areas between Melbourne and Eltham: East of the city, tea-tree and grass alternated up the Yarra until the country became ‘rather over thickly wooded, and with a good deal of underwood, which gives a scrubby appearance’. This was relieved by grass and open forest belts: Richmond was a ‘grassy hill’, Collingwood a ‘grassy forest’, Kew a ‘grassy range’, Bulleen ‘good grassy hills’, Heidelberg ‘an ever-varying succession of lightly-timbered hill and dale, well-grassed downs alternated with groups of tall, handsome

trees’, Doncaster off the river a ‘barren forest of dwarf stringy bark’, about Lower Plenty ‘timber but of indifferent quality.... Swampy Flat’, in the far hills Kangaroo Ground, grass then, forest now (Bill Gammage, *The Biggest Estate on Earth*, page 265/6, Allen and Unwin, 2011). These observations are consistent with many early white records across Australia. They establish that the Aborigines maintained large areas of grasslands with multiple cool burns. As stated in the foreword, Aborigines had great wisdom with fire and avoided the ‘torture of the land’ seen in the last decades.



1890 - Grasslands from Heidelberg to the foothills (Streeton)



2013 - Flammable vegetation from Heidelberg to the foothills

White Colonists/Settlers, 1835 to 1960

Land management initially pursued agricultural and mining objectives on, and accessed through, the lightly timbered Aborigines' grasslands. Elsewhere fire sensitive saplings, which the Aborigines had previously controlled, grew into mature trees.

In the extreme bushfires of 1851, the full implications of the end of Aboriginal land management

became apparent. From then to about the 1960's, varying levels of fuel reduction, cool burning and roadside firebreaks became a rural Victorian custom.

The constant cool burning of excess fuel became part of Victorian rural culture. In residential areas, a fear of extreme bushfire led buyers in new areas to demand the removal of flammable trees, to

allow for the planting of non-flammable vegetation.

Extreme bushfire was primarily a rural problem, where the flammable trees grew. It was not an urban problem where non flammable and well watered vegetation was lush with moist summer fronds and leaves, offering some protection to houses and people from ember attack. They were safer places.



1880's - Plenty Gorge with grassy hills



2013 - Plenty Gorge with hills covered in flammable vegetation

Conservation movement, 1960 to 1983

The Conservation movement began with field naturalists and others, who were later joined by political activists. The movement attracted widespread media support, which helped to demonise responsible extreme bushfire mitigation works with derogatory terms, such as “*slash and burn*” and labelling of deciduous vegetation as “*exotic*”, despite it being non-flammable.

With at times nationalistic zeal, they encouraged the planting of flammable leaf, bark and twig shedding vegetation, called “*natives*”, close to and often overhanging houses. To encourage dry garden “*natives*”, many thousands of tons of garden mulch (extreme bushfire

fuel), was trucked into suburbs, and often placed next to houses, compounding the risk.

Over this period, the risk of landscape level extreme bushfire, increased in small annual increments, until the difference between rural and suburban bushfire fuel levels, became dangerous to residents.

When the Conservation movement came to dominate Victorian government vegetation policy, cool burning was wrongly downgraded. Road reserves became flora corridors, with some tree trunks right up to the paved surface. Many policy makers argued that improved fire fighting capability could overcome increased bushfire

risks. For small controllable bushfires, that was correct, although an unintended by-product of the prompt extinguishing of small bushfires was that it preserved fuels for future extreme bushfires. Improved fire fighting capability often resulted in higher extreme bushfire risk.

The quickly established extreme bushfires of Ash Wednesday in 1983 demonstrated how helpless the Victorian Government was against multiple extreme bushfires. After Ash Wednesday, some people began the individual process of reassessing and documenting, amongst other things, Aboriginal cool burn methodology.

The Greens, 1983 to 2009

The passionate, nationalistic grassroots campaigning by the Conservation movement had changed the Victorian Government’s policies. Cool burning was dangerously downgraded.

The Green movement attracted a new spectrum of supporters, happy to join an established political power base. Discussion about extreme bushfire was generally not welcomed by the Green bureaucrats, and was mostly shut down. For many in government, Green faith replaced reason.

While there was plentiful expenditure on containing small to medium bushfires that do little damage, the absence of

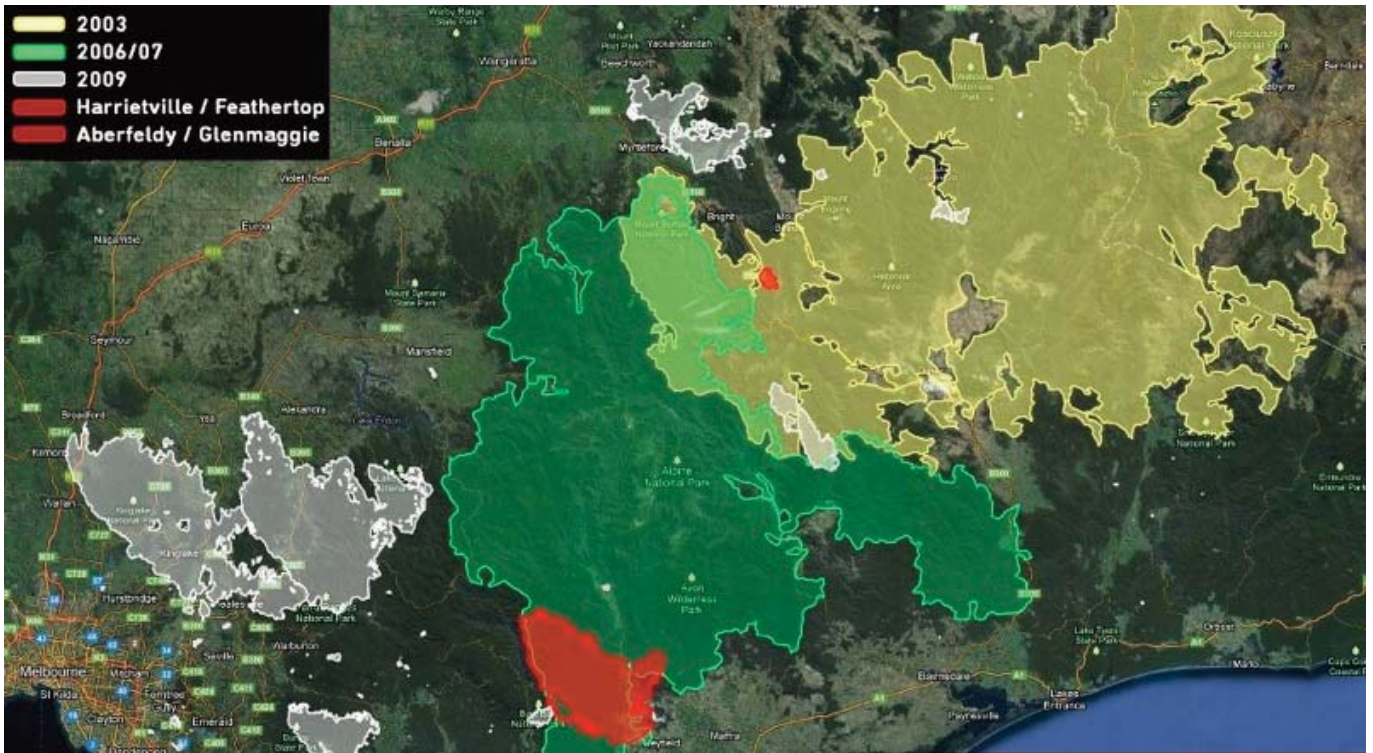
appropriate expertise on the killer extreme bushfires made the problem worse.

From 1960 to 2009 the risk of extreme bushfire in the Eltham Gateway, crept almost unnoticed, higher until it became worse than for many hundreds, if not thousands of years.

Over 50 years, the small annual increments in extreme bushfire risk levels approached a potential significant disaster stage. A high level of environmental damage has been caused, not only by Black Saturday’s extreme bushfires, but also by the earlier and much larger 2003 and 2006/7 bushfires in Victoria’s north-east mountain areas. Millions of tonnes of alpine soil

has been reduced to river silt, compromising Victoria’s water supplies, and tens of millions of small animals were incinerated. Those high intensity bushfires have left rock where there was soil and the “*torture of the land*” is extensive. The Green dominated Victorian Government’s **net biodiversity values** continue to go up in smoke. Meanwhile Western Australia has undertaken 50 years of careful macro management of extreme bushfire fuel, protecting the soil, small animals and without a single loss of human life. This proves that respect for Aboriginal net biodiversity values, deliver large scale environmental and human benefits.

“...trying to set fires, rather than prevent them”



Victoria's destructive high intensity bushfires since 2003



Creating a greener future for Victorians

The Victorian Government is supporting practical environmental action by planting two million trees across Victoria between 2012 and 2014.

Trees are vital for a healthy environment as they provide shade, clean the air and help cool the environment. They also provide habitat for animals and plants and help protect our water catchments.

The 2 Million Trees Project will plant 1.5 million trees in parklands and other public open space in metropolitan Melbourne and half a million trees along waterways in regional Victoria.

The 2 Million Trees Project is supporting tree



planting projects run by councils, schools, community and Landcare groups, committees of management and other public land managers. Tree planting projects need to deliver a public benefit and demonstrate value for money. The attached fact sheet sets out the criteria to qualify for support for tree planting projects.

<http://www.dse.vic.gov.au/conservation-and-environment/biodiversity/2-million-trees>

Victorian Government planting flammable trees in suburbia, without mention of fuel mitigation

Eltham Gateway’s Extreme Bushfire Threat

Local Laws and Policies

For at least the last three decades, the Victorian Government has mandated fuel producing vegetation policies, without a complimentary fuel mitigation policy. This process has led to the existing high fuel levels in our urban rural interface

suburbs. Those policies have effectively encouraged multiple-storey, flammable vegetation planting around, and at times over houses. In extreme bushfire conditions, some of this vegetation burns so rapidly that it appears to explode.

Local Laws and Policies like “Neighbourhood Character” and “Environmental Significance Overlays” protect extreme bushfire fuel generating vegetation, encouraging the landscape wide planting of this vegetation.

Fuels

Fuel is the only factor we can mitigate. It is made up from dry grass, leaves, bark and twigs of less than 6 millimetres in diameter. The increase in fuel quantity exponentially increases an extreme bushfire’s intensity. Without fuel, ignition would not lead to flame and existing flame would not be sustained. With less fuel, fast-moving uncontrollable extreme bushfire’s are gradually reduced to slow-moving, controllable bushfires (See Incoll chart). Within the Eltham Gateway, the high fuel is made worse by flood debris and concentrations of candlebark. The Eltham

Gateway’s river and creek parkland and road reserves cover about 70ha, of which about 30ha is forested. In many places within the Eltham Gateway the native bush parks have reached equilibrium maximum fuel, probably ranging from 25 to 35 t/ha (Simmons and Adams (1986), Fuel dynamics in an urban fringe dry sclerophyll forest in Victoria. Australian Forestry 49 (30) 149-154). These fuel levels in Eltham are classified ‘extreme’, and as demonstrated on the chart below, would result in ‘Fires not controllable’, at relatively low FDI (Natural Resources and Environment “Overall Fuel hazard Guide” May 1999).

These pockets of extreme fuel in the middle of the Eltham Gateway are vulnerable to multiple ignition by spotting from the Plenty Gorge. The 900ha Plenty Gorge is a Victorian Government designated high fire risk parkland, located some 6km to the northwest (ie upwind). As landscape level fuel has not been reduced in the Plenty Gorge and Eltham Parklands, this paper concludes that during extreme bushfire conditions an ignition would rapidly become a crown fire extending into the tops of trees (10,000 Kilowatts per metre).

FIRE DANGER CLASS	LOW	MOD		HIGH		VERY HIGH		EXTREME			
FDI	5	10	15	20	25	30	40	50	60	80	100
FUEL t/ha											
5 t/ha	75	150	225	300	350	425	575	700	850	1125	1400
10 t/ha	300	600	900	1150	1450	1700	2250	2800	3350	4450	5550
15 t/ha	675	1350	1950	2625	3225	3825	5700	6375	7650	10125	12600
20 t/ha	1200	2400	3600	4800	6000	7200	9600	12000	14400	18200	23900
25 t/ha	1750	3750	5625	7500	9375	11250	15000	18750	22500	30000	37500

FIRES CONTROLLABLE

FIRES NOT CONTROLLABLE

Rod Incoll’s Kilowatts per metre of fire front intensity chart

Winds

Historically, the winds driving the killer extreme bushfires in Victoria come from the north and later in the day veer around and come from the south west (Luke and McArthur. Bushfires in Australia, Page 89, Australian Government Publishing Service Canberra, 1978).

The hilly terrain and extensive trees within the Eltham Gateway will attenuate the winds in the lower areas, while the ridge tops will be exposed. The wind component of the Forest Fire Danger Index in the Eltham Gateway will be around half of

that measured at Melbourne airport.

On Black Saturday, the Forest Fire Danger Index at the airport was around 200, meaning that it would have been around 100 at the Eltham Gateway.

Drought

Extended drought, which dries out the landscape, precedes extreme bushfire in Victoria. A strategic threat related to drought, is that gum trees shed leaves and bark relatively quickly,

potentially doubling the available fuel (Simmons and Adams [1986]). The moisture indicator most used for bushfire purposes, is the Keetch-Byram Drought Index. In the urban rural interface, drought

time moisture is further reduced by Victorian Government water restrictions, resulting in previously lush vegetation around homes becoming dry and ready to burn.

Timing

It is worthwhile noting that extreme bushfires, causing a significant loss of life, have occurred between the second week of January and mid-February. These fires are; “*Black Friday*” on 13 Jan 1939, “*Hobart 67*” on 6 Feb. 1967, “*Ash*

Wednesday” on 16 Feb 1983, and “*Black Saturday*” on 7 Feb 2009. Historically, there was a similar day to Black Saturday 158 years earlier, “*Black Tuesday*” on 6 Feb 1851. In Australia’s Capital city, over 500 suburban homes were destroyed in the “*Canberra*

Bushfires” on 18 Jan 2003. This paper concludes, that the threat is only potentially disastrous during January and February. The low FFDI, elevated fuel, uncontrollable bushfires in 2013, suggest a longer threat period in future.



High fuel generating vegetation near Eltham Gateway’s River



House embedded in flammable native vegetation near Eltham Gateway’s Creek

Emergency Egress

The Eltham Gateway has many emergency egress problems, which combine to create a high level of risk. The area’s natural southeasterly emergency escape route, is blocked by a river with a single bridge, which is prone to gridlock even in good conditions. Under high heat, smoke and life threatening conditions, the bridge is almost certain to completely gridlock . The next bridge to the east is about 13 km away by road, while to the west at about 7 km by road, a southerly turn of the river allows multiple-route suburban egress. That means the Eltham Gateway’s bridge is the only escape route in 20 km of road. With only this one bridge to

escape the region, people will be trapped and surrounded by flammable vegetation lining the roads (see photo below).

The Victorian Government admits in its *Bushfire Neighbourhood Safer Places Assessment Guideline*, that during an extreme bushfire the safe distance from a extreme fuel hazard is 140 metres.

The Guidelines states:
Radiant Heat and Setback Measurements

To provide initial direction to CFA staff and others in assessing the suitability of potential Neighbourhood Safer Places, the following guidance is provided:

Neighbourhood Safer Places must meet the following criteria for radiant heat load:

1 - *If a Neighbourhood Safer Place is an open space the maximum potential radiant heat impacting on the site must be no more than 2kw/m².*

2 - *If a Neighbourhood Safer Place is a building, the maximum potential radiant heat impacting on the building must be no more than 10kw/m².*

By way of example, Neighbourhood Safer Places adjoining extreme fuel hazards, this equates to a separation distance from the fire hazard of:

greater than 310 metres from the outer edge of the NSP for an open space; and greater than 140 metres from the outer edge of a building to the fire hazard.

It is acknowledged that for NSPs abutting less than extreme fuel hazards this separation distance may be reduced so long as the criteria for maximum radiant heat impact are met.



Eltham Gateway’s Emergency Egress - A “...radiant heat load” death trap

Roads Designed to Gridlock

The Victorian Government accepts that people will be gridlocked in cars close to flammable vegetation (*“Don't wait and see”*). Despite the Victorian Government's scientific evidence on the *“...radiant heat load”* generated by trees, the main access and egress roads are lined

with old, diseased and dead trees. These trees fall over the paved surface and crush cars in normal storms. In the hurricane strength winds created in an extreme bushfire, most roads will become blocked. At the passage of the fire front, many trapped vehicles will be unable to go

forward or back. Due to the amount of high fuel adjoining the roads paved area, those trapped people in cars will either perish, or face varying degrees of trauma, during those desperate minutes of *“...radiant heat load”*.



Eltham Gateways Main Road blocked in normal storm conditions (DV Leader 6 September 2012)

“Leave Early” Policy

The Victorian Government's *“leave early”* defence against extreme bushfire, with its uncertainty of agreed emergency procedures, is untested. The Victorian Government has put the responsibility of leaving early

onto *“families and individuals”*. When an extreme bushfire has the potential to involve schools, disabled, elderly, sick, unaccompanied children and those without transport; untested procedures will

predictably lead to a scaled up version of the disaster that occurred in less populated areas on Black Saturday. Media images at the time did not convey the full horror.

Precedents

Australian cities that have had extreme bushfires impact their suburbs are Hobart (1967), Canberra (2003) and Bendigo (2009). Perhaps most directly relevant to the Eltham Gateway, is a town called Macedon, about 60 km from Melbourne.

An analysis of the circumstances surrounding the loss of life in the 1983 Ash Wednesday extreme bushfires found that 85% of lives lost were outside houses, with half of them being on roadways.

Clearly the fuel conditions of the road reserves are a vital factor in

bushfire deaths. Thirty years later, the roadsides in the Eltham Gateway area are equally unsafe, or worse. Many are thick with flammable native bush and some are narrow, with just enough or no passing room for large vehicles. They are not survivable in an extreme bushfire event.

Death and Trauma Risk

The Eltham Gateway has the potential to be a firefighter's worst nightmare. That is, landscape wide fire in an urban context of hidden accelerants, gas bottles and panicked people driving erratically, blocking access and egress.

The Victorian Government has admitted in a 2012 DVD, the single tree-shrouded escape route across the next bridge in Warrandyte, 13km to the east of the Eltham Gateway, would in all probability become impassable.

The DVD titled **“Don't Wait and See”** cautions: *“...there is a very, very real possibility that they (residents) won't be able to leave this area in times of a major bushfire”* and *“should we have a motor car collision anywhere on those bridges, those 8,000 people or so, trying to flee, are going to find it extremely hard”*.

In 2009 Packham was **interviewed** on television about the risk to life from future extreme bushfires. The focus of

the nationally broadcast television interview, was the Eltham Gateway's region. Packham stated that future extreme bushfire fatalities could be *“measured in the thousands”*. Six months after the Packham interview the Victorian Government leader, Premier Brumby, used the words *“thousands of lives”* in a television **interview** in relation to potential fatalities on Black Saturday. Strangly, this dramatic increase in the predicted deaths risk assessments, by both an Australian political leader and an internationally recognised bushfire expert, was not repeated or further commented on by the media.

During 2011 to 2012, Cr Belinda Clarkson copied some mainstream media, numerous formal written **requests** to the Victorian Government seeking a response to this ten-fold increase in risk assessments. Whilst the media showed no interest, the Victorian Government's response

appeared ambiguous. However the Government did agree to accept Cr Clarkson's proposition *“...that the specific responsibility for... (extreme bushfire risk mitigation planning)...rests with Minister for Planning...”*.

If fuels and roads remain as they are (see below), then thousands of lives will be lost from the *“...radiant heat load”* when another extreme bushfire, similar to the East Kilmore fire on Black Saturday, impacts on the Eltham Gateway.

The time frame for this significant bushfire disaster is any dry summer drought period, within the next 50 years. If the 1 to 50 relationship between deaths and trauma is consistent with Black Saturday, then a 100,000 plus trauma casualty toll could be expected. The disaster in this gridlock trapped suburban area will occur after ignition 10 km's or more to the northwest, coincides with a 50 or higher Forest Fire Danger Index and high fuel.



*Extreme bushfire disaster
fuels in the Eltham Gateway*



*Extreme bushfire disaster
roads in the Eltham Gateway*

Extreme Bushfire Emergency Warnings

Prior to 2:00pm on Black Saturday both the Chief Scientist at the Victorian Government Emergency Headquarters and a Senior Fire Officer on the ground near East Kilmore, **predicted** the fire would impact on Eltham. No warning was given to residents. Centralised Emergency Centres worldwide, have a high warning failure rate (Herman B. Leonard. George F. Baker, Jr. Professor of Public Management, John F. Kennedy School of government, Harvard University. Evidence for the Victorian Bushfires Royal

Commission, 2009. “Organizing Response to Extreme Emergencies”, April 25 2010).

This paper is of the view that people planning to access and egress through the Eltham Gateway, cannot assume the Victorian Government will properly process a timely warning. The existing centralised Victorian Government Emergency Response Centre, would most likely fail to issue a timely warning, as occurred for some areas on Black Saturday.

Without timely warning, last minute, panicked emergency access and egress road traffic, is likely to slow to a standstill during the worst “**...radiant heat load**”.

With potentially 30,000 people warned late or not at all, attempts to cross the Eltham Gateway’s main river bridge, in extreme “**...radiant heat load**” and smoke conditions, will predictably lead to complete gridlock.

Extreme Bushfire Cost

Deaths

At 2,000 deaths, the compensation cost to the Victorian Government would be about \$7.457 billion. However, when combined with other costs like response, insurance, government expenditure, timber asset and inquiry etc, the total

cost escalates to \$50 billion (based on the findings of the Victorian Government’s Inquiry. Final Report Volume 1 p.243). Associate Professor Neville Norman from the University of Melbourne (PhD Cambridge University), addressed this paper’s concern regarding cost

and commented “*I have read the documents thoroughly...I have a paper on valuation that might help...the RC’s (the Victorian Government Inquiry) estimates are miles too low*” (See “*Difficult Valuations*”).

Trauma

On Black Saturday the death/trauma ratio was about 1 to 50. At 2,000 deaths, the trauma numbers could be about 100,000. Trauma ranges from

shock to **third degree burns** and suicidality. After talking on site with the Operations Director/Director of Nursing at one of Victoria’s largest hospitals,

this paper concludes the mortuary and trauma numbers would overwhelm the Victorian Government’s healthcare system.

Mental Health

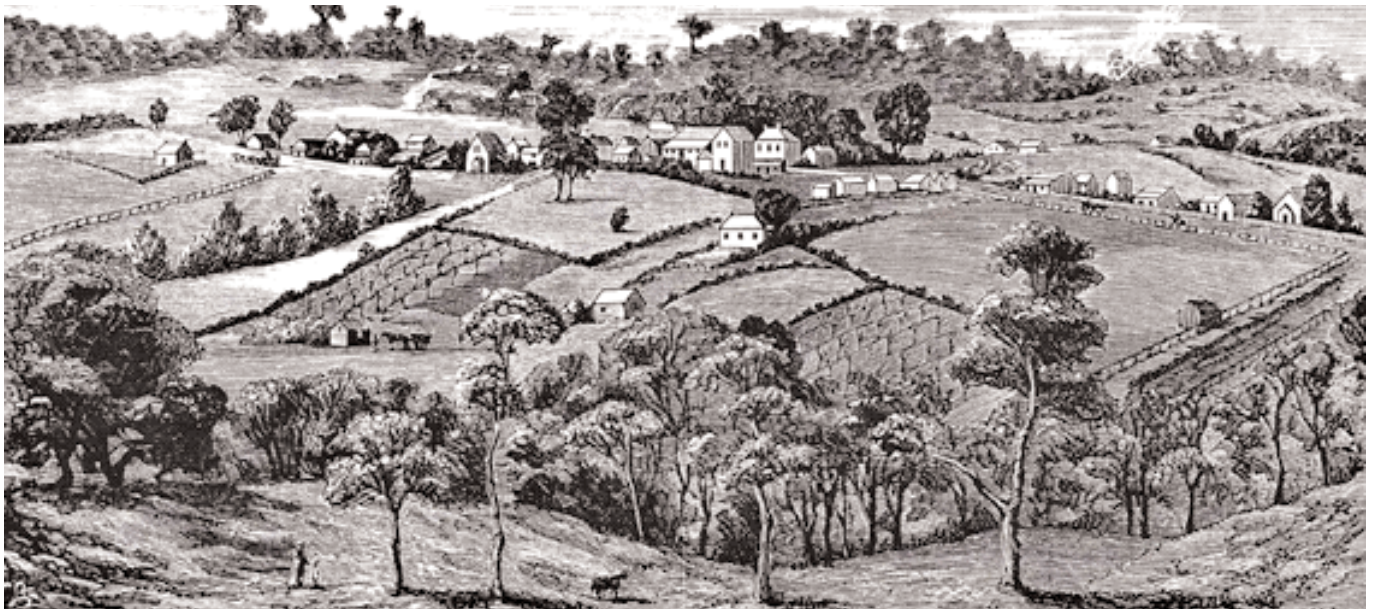
Clinical and forensic psychologist Felicity Dunne addressed this paper’s concern about the potential mental health

ramifications of an extreme bushfire impacting the Eltham Gateway, and commented “*There would be an*

overwhelming acute and chronic mental health impact on the State of Victoria”.

“...trying to set fires, rather than prevent them”

The images below, a wood engraving from 1884 and a photograph from 2013, show the same Eltham location and demonstrate the increase in extreme bushfire flammable flora, with the later image obscuring from view a large increase in residential density.



1884 - Eltham, a bushfire defensible zone



2013 - Eltham, a potential bushfire disaster zone



The future - another Inferno, this time in the Eltham Gateway

Recommendations

The Victorian Government should, without further delay:

1. Change the Minister for Planning's title to *“Planning and Bushfire Mitigation”*
2. Make Law and Policy like *“The Victorian Planning Provisions”*, *“Neighbourhood Character”* and *“Environmental Significance Overlays”* etc. properly consider extreme bushfire.
3. Conduct a landscape level extreme bushfire risk analysis, a minimum of 10 km north and west of the Eltham Gateway, and reduce fuel in all areas, to less than 5 t/ha.
4. Adopt the West Australian prescribed burning guide called *“The Red Book”*.
5. Decentralise the Emergency Response Centre to ensure timely, locally specific information to Eltham Gateway region residents.
6. Address the *“Leave early”* policy, and take responsibility for the risk of landscape level high fuel, and not make individuals and families responsible.
7. Make main emergency access and egress roads leading to the bridge crossing the Yarra River safe from potentially fatal levels of *“radiant heat load”*, in an extreme bushfire.
8. Develop an emergency strategy for the Eltham Gateway. Review a four lane one way egress and a river ford emergency vehicle access.
9. Address roadside and electricity asset hazard trees and ensure flammable trees do not overhang and fall on main emergency egress roads and electricity assets.
10. Draft a format for community participation in micro scale prescribed burning, and monitoring of the biodiversity enhancement benefits.
11. Undertake a probability of survival analysis of houses and gridlocked cars, in the Eltham Gateway, as a database to determine more precisely the risk of extreme bushfire.
12. Collate the data from Recommendations 1 to 11 and develop a strategy that will restore a reasonable degree of safety to the Eltham Gateway residents.

Conclusion

This paper concludes that unless landscape-level fuel is reduced, a significant extreme bushfire disaster in the Eltham Gateway will occur during a dry summer drought period, within the next 50 years.

With at least 30 years of inappropriate extreme bushfire planning, combined with limited or no emergency egress for trapped people, thousands of people will die in the Eltham Gateway and potentially 100,000 people will be traumatised. The event will occur with existing or projected higher fuel loads, on a Forest Fire Danger Index of 50 or

above, after ignition 10 km or more to the northwest of the Eltham Gateway.

The extreme bushfire behaviour will create extensive ember spotting that will repeat the experience of Black Saturday, though this time occurring in a residential area with people trapped by a river and creek.

In the car-gridlocked Eltham Gateway area and at least 10 kms to the north and west, a reduction of landscape level extreme bushfire fuel to reduce the “...radiant heat load”, must be actioned by the Victorian Government without further

delay. In addition, the government must more widely inform residents of their existing personal threat level.

The Aboriginal stewards of this land managed to maintain a healthy and safe environment up to 1835. More recently the Western Australian Government has shown how it can be done without loss of life and with minimal property damage. The Victorian Government must now follow Western Australia’s example and provide the leadership to ensure an extreme bushfire like Black Saturday does not enter the Eltham Gateway.



Packham’s 2003 timely warning, 120 metre high flames near East Kilmore (Photo A. Sewell - 1998)

Appendix: Rationale for paper

David Packham is an internationally recognised extreme bushfire expert. His family fought and saved their house from the 1983 killer extreme bushfire, called Ash Wednesday. In 2009, over 50 hours before Black Saturday's largest bushfire, the East Kilmore fire was ignited, Packham emailed the first detailed **warning** (4:46 am on Thursday 5 February 2009). Within hours, that warning was widely distributed throughout Australia. At 11:47am on 7 February, the East Kilmore ignition occurred, about 50 km north-north-west of Eltham. As Packham had correctly forecast in detail, not 50 hours before, but six years earlier, an ignition in that specific

area was the Eltham regions biggest extreme bushfire risk.

Tim Malseed and his family have been residents of the Eltham Gateway for 30 years. They want to continue to live there in reasonable safety, without the ever increasing fear during the fire season, of an extreme bushfire like Black Saturday.



David Packham, 50 years of expertise, with practical acumen - (The Sun 22 February 1983)

In 1999 a Nillumbik Ratepayers Association (NRA) Director publicly predicted *"Uncontrollable fire...threatens settlements..."*.

In 2001, a former Victorian Government fire prevention officer of 30 years' experience, publically stated that the Victorian Government are *"...forcing him to develop a burn your own house down kit..."*.

In 2003, the NRA asked Packham to assess the bushfire risk of the greater Eltham Region. Packham's **assessment** was followed by an independent second **opinion**, from a former Victorian Government Chief Fire Officer, Rod Incoll. Both the Packham and Incoll assessments were **endorsed** by the Victorian Government's bushfire force, which stated *"...both of the independent experts have considerable and appropriate expertise in the subject matter."* The Victorian Government questioned Packham and Incoll at a formal hearing, where they made it clear that unless fuel was reduced, catastrophic fire was inevitable. There was no further response by the Victorian Government to the NRA's expert bushfire assessments.

In 2009 on Black Saturday the Eltham Gateway residents were physically unaffected by the extreme bushfires, and not informed of the predicted spread of the fires into Whittlesea, Diamond Creek, Greensborough and Eltham.

Eleven days after Black Saturday, NRA member and Victorian State Government Councillor Belinda Clarkson and others were advised by a Victorian Government employee that *"...Council's insurance cover may be at risk if any employee (or Councillor) suggests that this Nillumbik Council or any previous Nillumbik Council has in any way been at fault in relation to the*

Time will tell with vegetation policy

THE Ash Wednesday bushfires were devastating for Victorians (February 16, 1983). Seventy-six people were killed, 2463 homes and 1000 buildings destroyed. Three million stock, 20,000 km of fencing, 1.5 million bales of hay and 350,000 hectares of land were also burnt. The financial cost was estimated at \$440 million (CSIRO booklet, *Building in Bushfire Prone Areas*, 1993).

Ninety per cent of the rainforest of the Royal National Park, Sydney, was burnt in a fierce fire on January 6-8, 1994.

The South Australian arid zone fires of 1974-75, burned 120 million hectares and destroyed the mosaic of various aged plants necessary for the survival of small mammals, 23 species of which have been exterminated in the fire regime of the past 40 years.

In Hobart, 1967, in 1½ hours more than 1000 homes were burned

LETTERS

and 70 people died. Hundreds of others were injured.

Uncontrolled fire not only threatens settlements, but also native animals and fire-sensitive bush. Australia now has a regime of raging wildfires. This raises the question: "Should Nillumbik be revegetating with Aboriginal fire flora, or returning to a self-sustaining, relatively fire-free pre-Aboriginal ecology, at least in our urban fringes?"

Many rainforest species still exist in Tasmania. Four local rainforest species — two native pines, pittosporum and holly — are actually reviled as "weeds".

The Coroner's report on the East Sydney bushfires blamed local councils for encouraging residents to plant inflammable flora close to their houses. This is exactly what Nillumbik's Indigenous Vegetation Policy does.

Fireguard began in places like Osborne Rd, North Warrandyte, because fire brigades refused to risk their lives when roads are too narrow and indigenous vegetation too dense. By setting up phone-trees the residents rely on early warning to fight their own fires.

If firestorms occur at night, as happened at Macedon township, people had two minutes to escape after a warning phone call, by which time the duco on cars was already blistering in the heat.

I'm scared of fire. I've lived through three of them in Eltham: 1962, 1969 and 1983. I've surrounded the north and west of my house with water-laden trees and ground covers, orchards and veggie gardens, most of which the indigiphiles label "weeds". These will all probably die in a fire, but hopefully my home and I will survive. Time will tell.

June English,
Godalmin St,
Eltham.

The NRA issues a public warning (Diamond Valley News 1/12/1999)

Your Opinion

The development of legal, land-use boundaries, by now the world is full of bushfire-prone areas.
Mark Thomas
10th June

Fire hazards build

I REFER to a letter from June English back in October in which she claimed the shire was in fact promoting the increase of fire hazards by way of some new guidelines they were looking to put into place.

At the time I thought the claims were pretty far fetched and decided to wait and see the outcome.

Unfortunately for the community in general and the people being directly targeted with these dangerous and stupid requirements at the moment, June was not only detailing a pretty scary situation but was in fact understanding the fact.

I have recently become aware of a person trying to build on a one acre treed block in North Eltham that has been grazed by cows and then more recently by horses for many years.

The trees on the block are quite large gums and he has been banned from removing any of them to build safely but is being forced by the shire to build in underneath them.

The environment/planning staff are even telling him to build double storey in order to disturb less ground area and fit in better beneath these large trees!!

As if it isn't bad enough being forced to redraw the plan four or five times to try and fit in under these trees, they refuse to accept any responsibility for the damage which would be caused from the big branches we all know drop from time to time.

Letters to the Editor

SEND: Your letters to:
The Editor, Nillumbik Mail,
PO Box 265, Eltham, 3095

PHONE: 9439 2699

FAX: 9439 2611

Email:
nillumbikmail@connect.net.au



Please ensure you sign the letter and give your full name, telephone number and address for verification purposes - a pen name will be printed if required. Anonymous letters will not be accepted for publication. The publisher reserves the right to edit letters.

The latest little gem is that he has now been told to plant another 150 major trees and shrubs around the house on this one acre block.

It is obvious the people he is dealing with are not from this area and have no concept of what damage a fire can do.

They have not learnt any lessons from the devastation of Ash Wednesday in 1983 and are forcing him to develop a 'burn your own house down kit' in an area that is still subject to ember attack from a fire north of Allendale Rd. Being directly adjacent to an overhead mains transmission easement, the property itself is still in fact subject to direct involvement from a grass fire on the easement area.

As a former Fire Prevention Officer with more than 30 years of emergency experience, the current practices of this organisation concern me greatly as time will tell.

Bernie Murray
Research

A local expert issues a public warning (Nillumbik Mail 17/1/2001)

bushfires”. Put simply, now that the NRA and Clarkson had been proven right about the Victorian Government’s vegetation policy being disastrous, their whistleblowing had to stop.

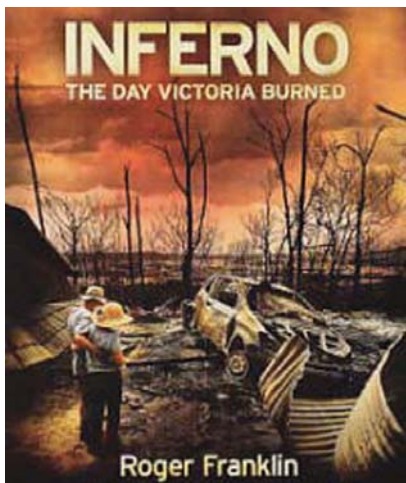
Four weeks after Black Saturday a newspaper letter suggested to Malseed, Clarkson was being bullied (**check Bolt blog**). This bullying led to Malseed assisting Clarkson, who was clearly a beleaguered whistleblower on extreme bushfire issues.

Following Clarkson’s caution, Malseed commissioned Packham to inspect the Eltham Gateway. Packham’s advice led to Malseed forming the opinion that the Victorian Government’s management of extreme bushfire mitigation was a shambles.

In mid 2009, *“Inferno - The Day Victoria Burned”* (by Roger Franklin), WAS the first of many books published about the fires. The book referred to the NRA’s expert assessments *“...the threat of catastrophic fire was dismissed with what now seems a culpable disregard for life and safety”*.


In June 2011, the Australian Senate was **told** *“Cr Clarkson’s has stood up for her community...”*.

In 2013, extreme bushfire fuel loads appear to be worse than ever.



2009 - *“...culpable disregard for life and safety”*

From: Bill Forrest
Sent: Wednesday, 18 February 2009 12:43 PM
To: Councillors
Cc: Andrew Port; Conal Creedon; Margaret Abbey; Vin McKay
Subject: Media and public comment on the bushfires


Media_Release_Bush fires.pdf

I've recently received correspondence from the MAV (who are also our insurance brokers) in relation to this matter which includes the following:

"The MAV has also had advice that the media are talking to any local government employee (and Councillor) who is prepared to discuss bushfire related matters. These conversations may have a range of impacts on the Council and the individual which are neither intended nor contemplated at the time they take place. Accordingly the MAV is in the process of considering privilege and media policies that should be adopted by councils and will provide you with further information on these shortly."

I remind Councillors and I am reminding all staff that the Council's public position is contained in a media release dated 12 February, which I have again attached to this email.

In plain English, what the MAV is saying is that Council's insurance cover may be at risk if any employee (or Councillor) suggests that this Nillumbik Council or any previous Nillumbik Council has in anyway been at fault in relation to the bushfires.

Media protocols are in place for both Councillors and officers and I would request that these are complied with. I will forward further advice from the MAV as soon as it is received.

Bill Forrest | Chief Executive Officer
Nillumbik Shire Council | Civic Drive (PO Box 476) | Greensborough Vic 3088
Ph: 9433 3100 | Fax: 9433 3166 | bill_forrest@nillumbik.vic.gov.au

Email from Nillumbik Shire Council CEO to all Councillors after Black Saturday

DVL 11/3/09 (38)

Check Bolt blog

AUSTRALIA suffers its greatest natural disaster in our history. Nillumbik – the shire suffering the greatest number of deaths – has its first council meeting since that horrific day where men, women, children and babies died.

One councillor at that meeting tries to move a motion to have the State Government suspend native vegetation laws and policies

until the commission delivers its findings and recommendations (the only body able to do this), so that concerned families may do “bona fide clearing legally”.

The flippant article reporting this extremely important debate is relegated to Page 7 under the headline “Up for a scrap ...”. The journalist obviously does not understand English when he translates Cr Clarkson’s “bona fide” to carte blanche?

As for Cr Young’s outrageous comments, apparently for him, Cr Clarkson asking the chief executive for the truth translates to harassment?

I suggest you all go to the *Herald Sun*’s Bolt blog “fiery debate” from March 2.

There you will be directed to a transcript of the meeting, and also get an idea of what Australians think about the display of weak, do-nothing councillors at that most important meeting for the Nillumbik community, who actually want leaders.

**Natalie Woodley,
Diamond Creek.**

“...asking...for the truth translates to harrassment?”



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