Mr Scott Morrison **Prime Minister** Parliament House Canberra ACT, 2600

Firestick Estate Inc.

4 Felicia Rise, Diamond Creek, 3089 secretary@firestickestate.com

29 June 2020

Dear Prime Minister Morrison.

Extreme Bushfire Criminal Negligence

Your Royal Commission looked at Prescribed Burning for three days (16 -18 June 2020). A day earlier, a biased Background Paper was published (15 June). It is in denial about Extreme Bushfires, incomplete, careless and misleading for the Commissioners who are laypersons 1, unlike our expert advisors.

The most important Extreme Bushfire Paper (in terms of human death toll), is not mentioned at all 2.

The Prescribed Burning cost, at "...from under \$100 to \$10,000 per hectare..." 3, is careless, because we received precise figures from the best practice State, WA, which indicate Prescribed Burning costs less than other States fatal bushfire mismanagement and disastrous outcomes.

The Background Paper contains a misleading statement: "...Price and Bradstock (2012), in their analysis of the 2009 bushfires in Victoria where the FFDI was well above 100, found that intensity reductions resulting from prescribed burnt areas up to 5-10 years old would be insufficient to increase the chance of effective suppression" 3a. The words "...up to 5-10 years old..." are not supported by the source material. The graph shows over 90 percent first attack success 4.

The Black Summer fires occurred on relatively low risk days, with a Forest Fire Danger Index of typically 50 or below. Black Saturday had Extreme Bushfires that peaked at FFDI 162, with extreme fire line intensities. rates of fire spread, hourly areas burned, and energy released, that the Background Paper is denying.

Prime Minister, another "...relatively frequent..." 2a 'Black Day' will come, impacting a city "...with thousands of fatalities" 5. You must know "The State has failed to respond... This reflects a general lack of will to do the level of burning necessary for community and environmental protection by reducing the risk of large and intense bushfires" 6, and that you will be blamed for "...abrogating governments' responsibility to manage public lands..." 7. A future claim that you didn't know the threat, will not be accepted. Western Australia knew 50 years ago and fixed it. You must follow suit or be blamed for another massive death toll, with your jailing and/or referral to an International Court, for a crime against humanity, for such "...criminal negligence" 8.

Yours faithfully.

Belinda Clarkson (Secretary) www.firestickestate.com

- 1 Layperson: "someone who is not a member of a particular profession" (Macquarie)
- ² Anatomy of a catastrophic wildfire: The Black Saturday Kilmore East fire in Victoria, Australia, Cruz et-al, 2012. ^{2a} Page 15, see attached
- 3 Background Paper, Page 11, see attached. 3a Page 9
- ⁴ The Overall Fuel Hazard Guide, Third Edition, May 1999, Page 25, First attack success, see attached
- ⁵ firestickestate.com Bushfire Death Trap The Eltham Gateway, Packham & Malseed, 2013, see attached
- ⁶ 2009 Victorian Bushfires Royal Commission, Final Report, VII PART TWO, Page 295, see attached
- 7 firestickestate.com Phil Cheney, Sky News 10 January 2020, see About
- 8 firestickestate.com see Letters, Chief Commissioner of Victoria Police, 18 December 2018, No. 455 & Letter to Prime Minister Morrison, 22 February 2019 No. 496

CC: Governor-General David Hurley AC DSC (Refd), Opposition Leader Anthony Albanese, Cabinet Ministers, US Ambassador A.B. Culvahouse Jr., The Royal Commission into National Natural Disaster Arrangements & Others

Australian Capital Territory New South Wales Northern Territory Queensland South Australia

Western Australia

Chief Minister Andrew Barr Premier Gladys Berejiklian Chief Minister Michael Gunner Premier Annastacia Palaszczuk Premier Steven Marshall Premier Peter Gutwein Premier Daniel Andrews Premier Mark McGowan

Opposition Leaders:

Alistair Coe Jodi McKay Lia Finocchiaro Deb Frecklington Peter Malinauskas Rebecca White Michael O'Brien Liza Harvey

Commissioner Georgeina Whelan Commissioner Shane Fitzsimmons

Commissioner Greg Leach Chief Executive Officer Malcolm Jackman Chief Officer Chris Arnol Commissioner Andrew Crisp Commissioner Darren Klemm

Commissioner Neil Gaughan Commissioner Michael Fuller

Commissioner Katarina Carroll Commissioner Grant Stevens Commissioner Darren Hine Chief Commissioner Shane Patton Commissioner Chris Dawson Forest Ecology and Management xxx (2012) xxx-xxx



Contents lists available at SciVerse ScienceDirect

Forest Ecology and Management

journal homepage: www.elsevier.com/locate/foreco



Anatomy of a catastrophic wildfire: The Black Saturday Kilmore East fire in Victoria, Australia

M.G. Cruz^{a,*}, A.L. Sullivan^a, J.S. Gould^a, N.C. Sims^b, A.J. Bannister^c, J.J. Hollis^{a,d,e}, R.J. Hurley^a

- ^a CSIRO Ecosystem Sciences and CSIRO Climate Adaptation Flagship, GPO Box 1700, Canberra, ACT 2601, Australia
- ^b CSIRO Land and Water, Private Bag 10 Clayton Sth, VIC 3169, Australia
- ^c Bureau of Meteorology, GPO Box 1636, Melbourne, VIC 3001, Australia
- ^d University of New South Wales at the Australian Defence Force Academy, Canberra, ACT 2600, Australia
- ^e Bushfire Cooperative Research Centre, Level 5, 340 Albert Street East Melbourne, VIC 3002, Australia

ARTICLE INFO

Article history: Received 28 October 2011 Received in revised form 21 February 2012 Accepted 28 February 2012 Available online xxxx

Kevwords: Megafire Wildland-urban interface Crown fire Eucalyptus Spotting Pyrocumulonimbus

ABSTRACT

The 7 February 2009 wildfires in south-eastern Australia burned over 450,000 ha and resulted in 173 human fatalities. The Kilmore East fire was the most significant of these fires, burning 100,000 ha in less than 12 h and accounting for 70% of the fatalities. We report on the weather conditions, fuels and propagation of this fire to gain insights into the physical processes involved in high intensity fire behaviour in eucalypt forests. Driven by a combination of exceedingly dry fuel and near-gale to gale force winds, the fire developed a dynamic of profuse short range spotting that resulted in rates of fire spread varying between 68 and 153 m min⁻¹ and average fireline intensities up to 88,000 kW m⁻¹. Strong winds aloft and the development of a strong convection plume led to the transport of firebrands over considerable distances causing the ignition of spotfires up to 33 km ahead of the main fire front. The passage of a wind change between 17:30 and 18:30 turned the approximately 55 km long eastern flank of the fire into a headfire. Spotting and mass fire behaviour associated with this wide front resulted in the development of a pyrocumulonimbus cloud that injected smoke and other combustion products into the lower stratosphere. The benchmark data collected in this case study will be invaluable for the evaluation of fire behaviour models. The study is also a source of real world data from which simulation studies investigating the impact of landscape fuel management on the propagation of fire under the most severe burning conditions can be undertaken.

© 2012 Published by Elsevier B.V.

1. Introduction

South-eastern (SE) Australia has a combination of climate, topography and vegetation that makes it prone to severe wildfires. Fires occur in most years but are generally most extensive and severe following extended drought, typically associated with El-Nino events (Sullivan et al., 2012). This region has a long history of severe fire events, some of which have significantly influenced wildland fire control and land management policy. In the past seven decades catastrophic fire events (defined here as fire in which at least a single day of high intensity fire behaviour occurs and generally results in large area burned with significant destruction of infrastructure and loss of life) have impacted SE Australia in 1939 (Black Friday), 1983 (Ash Wednesday), 2003 (Canberra) and 2009 (Black Saturday). These four fire events have burnt 7.68 Mha of land and caused 390 fatalities, predominantly in the state of Victoria.

E-mail address: miguel.cruz@csiro.au (M.G. Cruz).

more East fire was the most significant of these, resulting in 70% of the fatalities on the day. It burnt nearly 100,000 ha and destroyed over 2200 buildings in the first 12 h alone. The fire eventually merged with the Murrindindi fire, burning a combined area of approximately 400,000 ha over a period of 3 weeks. Understanding the development and behaviour of the Kilmore East fire is important for a number of reasons. It is a critical step in identifying the factors that led to the scale of this catastrophic fire

The fires that occurred on 7 February 2009 (colloquially known as 'Black Saturday'), represent 44% of the fatalities. Of a total of 316

fires burning on this date, 13 developed into significant incidents

(Fox and Runnalls, 2009) and five resulted in 173 fatalities. The Kil-

and its unprecedented impact on lives, livelihoods and ecosystem components. Despite the diverse adaptation of Australian ecosystems to fire (Gill, 1981a,b), large-scale fires can have detrimental impacts on ecological values. Such a fire converts biodiversity-rich, fine-scale mosaics at a range of seral states into a less diverse landscape, both in terms of species composition and vegetation structure (Adams and Attiwill, 2011). The sustainable management of SE Australian ecosystems requires a landscape level approach to

0378-1127/\$ - see front matter © 2012 Published by Elsevier B.V. http://dx.doi.org/10.1016/j.foreco.2012.02.035

^{*} Corresponding author. Tel.: +61 2 6246 4219; fax: +61 2 6246 4096.

in the lower stratosphere. It is likely that the plume breached the tropopause on the 7 February, as occurred in the 2003 Canberra fires (Fromm et al., 2006). Remote sensing by Siddaway and Petelina (2011) revealed substantial smoke particles in the lower stratosphere at 18–22 km altitudes after 11 February. Fromm et al. (2010) provide a compelling case (20 events between 1987 and 2003) that major forest fires can inject large amounts of smoke into the lower stratosphere, where the combustion products remain for several weeks. This highlights the global nature of major fires.

The fire weather potential witnessed during Black Saturday and the associated level of fire intensity was not unprecedented in south-eastern Australia. The recurrence of large one-day fires, where most damage is done within a period of less than 8 h, is a relatively frequent event in this region of Australia. McArthur (1969) indicated a distinct cyclic trend in seasonal climatic factors that would lead to a significant likelihood of the occurrence of catastrophic fires. The 1939 Black Friday fires (Luke and McArthur, 1978), the Gippsland fires of 1965 (McArthur, 1969), the 1977 Victoria western districts grassfires (McArthur et al., 1982) and the 1983 Ash Wednesday fires (Keeves and Douglas, 1983; Rawson et al., 1983) are cases in point. One can find correspondence between the weather conditions driving some of these fires and those described in this study. Similarly, the fast rates of spread associated with profuse short-range spotting and the transport of viable firebrands over tens of kilometres was documented in some of those events.

The observed fire behaviour highlighted our lack of quantitative understanding of large-scale fire phenomena. Current fire models do not aim to describe such key aspects as the spotting dynamics and fire-atmosphere interactions observed in the Kilmore East fire. The reconstruction of fire propagation provided quantitative data on the behaviour of fires in eucalypt forests under extreme fire potential conditions. The information on fire rates of spread, fireline intensity and energy released, and spotting dynamics provide benchmark data from which existing and future fire behaviour models can be calibrated and/or evaluated.

Despite the importance of the human component in Australia's wildland fire issues, the mitigation of risk from catastrophic fire is essentially a land management problem. Absent or ineffective fuel management will naturally lead to accumulation of high levels of fuel at the stand level and provide landscape-level fuel connectivity that will allow widespread fire propagation. In our description of

the propagation of the Kilmore East fire we did not discuss the effectiveness of various recently burned blocks, either by prescribed burning or wildfire, in circumscribing fire propagation. McCaw (2010) and Bradstock and Price (2010) analysed the effect of fuel reduction burning on the behaviour of the most significant fires occurring on the 7 February 2009. Both presented evidence that recently burned areas (<3 years) had an effect in reducing stand level fire severity. It is unknown if the application of widespread fuel reduction in the years preceding the fire would have had an impact in mitigating the propagation or impact of the fire on the day. Nonetheless, we hope the detailed information in this case study will be useful in the evaluation of the effectiveness of distinct fuel management alternatives in reducing the potential for landscape-scale fire propagation as witnessed during Black Saturday.

Acknowledgements

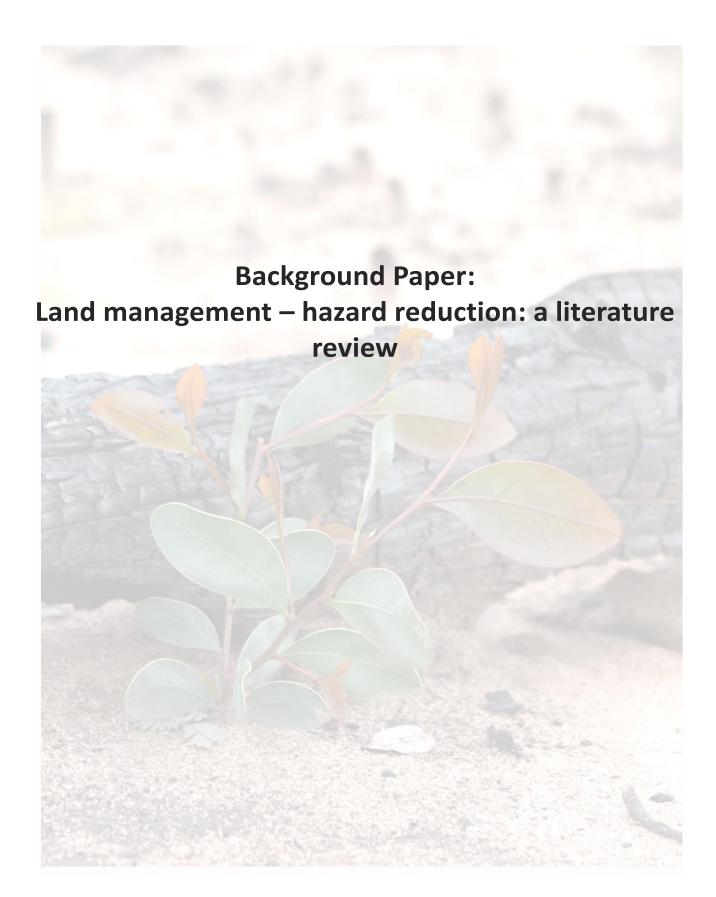
The reconstruction of a fire of the magnitude of the Kilmore East fire would not have been possible without the support of a large number of people and agencies. We would like to thank the following individuals and groups for their invaluable assistance in this work: Andrew Bennet, Nic Gellie, Owen Salkin, Liam Fogarty, Kelsy Gibos, Steve Grant and Gary Dash (Vic. Dept. of Sustainability and Environment); Greg Mattingley and Tony Fitzgerald (Parks Victoria); Tim Wells, Fabian Crowe, Adam Jenkins and David Nicolls (Country Fire Authority); members and staff of the following CFA brigades: Arthurs Creek, Badger Creek, Christmas Hills, Clonbinane, Dixons Creek, Flowerdale, Healesville West, Kilmore, Kinglake West, Kinglake, Reedy Creek, St Andrews, Strath Creek, Toolangi, Wallan, Wandong, Warrandyte North, Whittlesea, Yarra Glen and Yea; Graham Mills (Bureau of Meteorology); district and regional officers of the CFA; staff of Melbourne Water (Wallaby Creek Catchment Depot); Lachie McCaw (WA Dept. of Environment and Conservation); Glenn Newnham, Anders Siggins, Margo Andrae (CSIRO); Mark Moloney and Adam Forehan (Victoria Police); Bushfire CRC. Thanks are extended to Al Beaver, Stuart Matthews, Marty Alexander and two anonymous reviewers for constructive critique and thoughtful comments on this paper.

Appendix

Table A1Reliability rating for weather, fuel and fire spread observations for wildfire case studies. Adapted from Cheney et al. (1998).

Rating	Weather	Fine fuel moisture content	Fuel complex	Rate of spread
1	Nearby (<25 km) meteorological station or direct measurements in the field with high quality instruments, and/or validated modelled wind field	Point measurements made at time of fire and extrapolated to fire area taking into account topographic effects	Fuel characteristics inferred from a fuel age function developed for the particular fuel type/area	Direct timing of fire spread measurements i.e. IR scans, aerial observations, observed reference points with photographs
2	Meteorological station within 50 km of the fire with no local effects (i.e. terrain, vegetation) on the wind field, and/or partially validated modelled wind field	Single point measurements within or in the vicinity of fire area	Fuel characteristics inferred from a visual assessment or measurements of nearby unburnt forest	Reliable timing (within ± 15 min) of fire spread by field observations with general reference points
3	Meteorological station within 50 km of the fires but there are local effects on the wind field or the data not representative of the fire area. Meteorological station >50 km of the fire, reconstruction of wind speed for fire site. Unvalidated modelled wind field	Estimation of fuel moisture through validated models taking into account topographic effects	Fuel characteristics inferred from a fuel age curve for a forest type of similar structure	Reconstruction of fire spread with numerous cross references
4	Spot meteorological observation near the fire	Estimated fuel moisture for nearly (<25 km) meteorological stations	Fuel characteristics typical of equilibrium level in the representative fuel type	Doubtful reconstruction of fire spread
5	Distant meteorological observations at locations very different to fire site	Estimated fuel moisture for distant (>50 km) meteorological stations	Qualitative fuel type description	Anecdotal or conflicting reports of fire spread

Please cite this article in press as: Cruz, M.G., et al. Anatomy of a catastrophic wildfire: The Black Saturday Kilmore East fire in Victoria, Australia. Forest Ecol. Manage. (2012), http://dx.doi.org/10.1016/j.foreco.2012.02.035



Russell-Smith, 2020; Tolhurst and McCarthy, 2016; Tolhurst, 2003; 2007; AFAC, 2015; McCaw, 2013; Price and Bradstock, 2012).

There is however uncertainty about the extent to which prescribed burning generates positive ecological impacts. This uncertainty stems from the uncertainties discussed above about the effectiveness of prescribed burning in reducing the extent and intensity of bushfires, particularly in extreme fire weather. Some evidence suggests that the measurable effect of reduced fuel on unplanned fire severity is limited (see for example Price and Bradstock, 2012). Other research indicates a broad scatter of fire severity data within their results, indicating that fire severity at any point in the landscape is a result of many interacting factors (see, for example, Tolhurst and McCarthy, 2016).

Costs of prescribed burning

There are costs associated with all types of fuel management. In the case of prescribed burning, these can be placed in four broad categories: resource costs from prescribed burns; damage costs from fire escapes; smoke-related impacts; and environmental impacts from burns.

Resource costs refer to the labour, equipment, fuel and other costs associated with undertaking prescribed burns. There is limited information on the resource costs of prescribed burning in the published literature, although several studies have found that they are highly variable, ranging from under \$100 to \$10,000 per hectare, depending on the location and associated risks (see, for example, Florec et al., 2019; Penman and Cirulis, 2020; Bradstock et al. 2012; Gibson et al., 2016).

Prescribed burning comes with risks of fire escapes, which can lead to deaths and injuries, and adverse impacts on property, infrastructure and other assets (McCaw, 2013). There are a number of documented cases in Australia where damaging fires have been caused by escaped prescribed burns. For example, a prescribed burn in Lancefield-Cobaw, Victoria in 2015 broke containment lines and destroyed several homes, fence lines and more than 3000 hectares of farmland and forests (Independent Lancefield-Cobaw Fire Investigation Team, 2015). In 2011, an escaped prescribed burn close to Margaret River in Western Australia led to the destruction of 32 houses and other infrastructure, and burned out more than 3,400 hectares of land (Keelty, 2012).

There is extensive literature on the linkages between particulate pollution and respiratory illnesses. As fires are a source of particulate pollution, there is a risk that prescribed burns (and bushfires) can lead to adverse health effects, particularly amongst vulnerable populations. Consistent with this, several Australian studies have found positive associations between vegetation-fire smoke exposure and adverse health outcomes (see, for example, Haikerwal et al., 2015a; 2015b; Dennekamp et al., 2015; Dennekamp and Abramson, 2011; Horsley et al. 2018, Borchers et al. 2020; Broome et al., 2016). However, there is uncertainty about the extent of the effect, particularly where exposures are episodic. Several of these studies have indicated that the health impacts of prescribed burning must be evaluated in the wider context of the adverse impacts, including on health, of unplanned fire activity (e.g. Broome et al., 2016). In addition to the health impacts, smoke from prescribed burns can have adverse impacts on some industries, including viticulture and apiaries. This has led to conflict in some areas. For example, McCaw (2013) describes how vineyard owners in Western Australia initiated legal proceedings to recover commercial losses attributed to impacts of smoke from prescribed burning. The court ultimately ruled it would be unreasonable to impose a duty of care to avoid smoke damage to wine grapes on a public authority charged with fire management responsibilities and biodiversity conservation functions; a decision upheld on appeal. From an ecological perspective, the impact on plants from smoke generated by biomass burning and the toxicology of smoke from biomass burning on any form of native fauna have been identified, amongst other areas, as requiring additional study (see for example Bell and Adams, 2009).

The findings of research into the environmental impacts of prescribed burning are variable (see for example, Bowman et al. 2013; AFAC, 2015). There is some evidence of adverse environmental consequences, for example, the loss of obligate seeding plant species in some areas (see, for example, Cullen and Kirkpatrick, 1988; Harris and Kirkpatrick, 1991), changes in species diversity (Bradstock et al., 1998; Tolhurst, 2003), and increases in carbon losses to the atmosphere (di Folco et al., 2011; Bradstock et al., 2012b). However, several studies have highlighted the need for greater longitudinal analyses of the

2012, McCarthy and Tolhurst, 2001, Price and Bradstock, 2012; Tolhurst and McCarthy, 2016). For example, Price and Bradstock (2012), in their analysis of the 2009 bushfires in Victoria where the FFDI was well above 100, found that intensity reductions resulting from prescribed burned areas up to 5-10 years old would be insufficient to increase the chance of effective suppression. Tolhurst and McCarthy (2016) similarly found that the effects of prescribed burning in assisting fire suppression declined substantially when the FFDI exceeded 50.

Other studies have found that prescribed burning (and other fuel reduction methods) can reduce the intensity of bushfires under extreme conditions (see, for example, McCaw, 2013; Sneeuwjagt, 2008; Bradstock et al., 2010; Price and Bradstock, 2010). For example, McCaw (2013) highlights evidence that, under severe weather conditions and extreme fuel dryness, fire intensity was reduced within prescribed burnt areas and for a distance of up to several kilometres downwind of them, even where the extent of area burned by a bushfire was not arrested by prescribed burning activity. Studies that have utilised spatial data have also found that, under extreme weather conditions, the probability of crown fire (an indicator of intensity) in eucalypt forest is significantly reduced for up to 5 years after previous fire (Bradstock et al., 2010, McCaw, 2013).

Effect on fire extent

Fire extent (also known as fire scale) refers to the total amount of land burned as a result of an unplanned fire. Researchers often use the concept of 'leverage' to study the effect of prescribed burning on the extent of bushfires. Leverage refers to the ratio between the area saved to area treated; in other words, the unit reduction in wildfire resulting from one unit of prescribed burning (Loehle, 2004; Price et al., 2015).

A number of studies have found that prescribed burning can minimise the extent of unplanned fire (see, for example, studies by Cheney, 2010; Boer, et al., 2009; Price et al., 2015, Sneeuwjagt, 2008). For example, using 52 years of fire history in the dry eucalypt forests of southwest Western Australia, Boer et al., (2009) found that every four units of prescribed burning resulted in a one unit reduction in the extent of bushfires (i.e. a leverage ratio of approximately 0.25).

Other leverage studies have found more variable results. For example, Price et al. (2015) explored the leverage ratios across 30 bioregions in south-eastern Australia over a 25 year period and found similar leverage ratios to Boer et al. (2009) in two of the bioregions: New England Tablelands (0.36) and North Coast (0.29) in New South Wales. However, they found significantly lower leverage ratios in the Sydney Basin (0.16) and Australian Alps/South Eastern Highlands (0.09) bioregions and no or a negative leverage effect (prescribed burning increased wildfire extent) in the remaining 26 bioregions. Several other studies have similarly found a limited relationship between prescribed burning and the extent of bushfires (see for example, Price and Bradstock, 2010; Price and Bradstock 2011; Cary et al., 2009).

The findings from a number of studies suggest that the influence of prescribed burning on fire extent is reduced when the fire burns under strong winds, low humidity or during drought (e.g. Price and Bradstock, 2010; 2011). There is also evidence that the extent of bushfires is spatially variable and heavily influenced by non-fuel related variables such as weather and ignition management efforts (e.g. Cirulis et al., 2020; Cary et al., 2009).

A number of studies have suggested that strategically locating prescribed burning areas within the landscape can reduce the area that needs to be treated to achieve a given reduction in bushfire extent (e.g. McCaw, 2013; Price and Bradstock, 2010; King et al. 2006; Loehle, 2004).

As with fire intensity, there is divergent evidence and debate about the role of prescribed burning in influencing fire extent under extreme conditions (AFAC, 2015). A significant body of research suggests that weather is a stronger influence on the extent of unplanned fire than fuel loads or previous area burned (see for example Price et al., 2015; Cirulis et al., 2020; Cary et al. 2009; Penman et al. 2011; Penman et al. 2013; Price and Bradstock, 2011; Boer et al., 2009). However, several studies suggest that, even under extreme conditions, fire extent can be effectively reduced by prescribed burning (see for example, Grant and Wouters, 1993; Attiwill and Adams, 2013). An argument made in support of this proposition is that prescribed burning can provide windows of opportunity where small fires can be extinguished or controlled





Natural Resources and Environment

AGRICULTURE

RESOURCES.

CONSERVATION

LAND MANAGEMENT

Overall Fuel Hazard Guide

Third Edition

May 1999



Fire Management

First attack success

Overall fuel hazard and its implications for first attack success and/ or the need for an extended first attack effort.

Data from a study into first attack effectiveness by NRE in the period 1991/92 - 1994/95 (McCarthy and Tolhurst 1998) indicate the following probabilities of (normal) first attack success (e.g. 6 crew, 1 or 2 slip-ons, 1 D3/D4) for given Overall Fuel Hazard levels and FDIs. Extended First Attack (>10 crew, large tankers and slip-ons, D6 dozer/s, aircraft etc.) may be required to improve success rates at low to moderate FDIs on Very High and Extreme Overall sites, and at high to very high FDIs on High Overall sites.

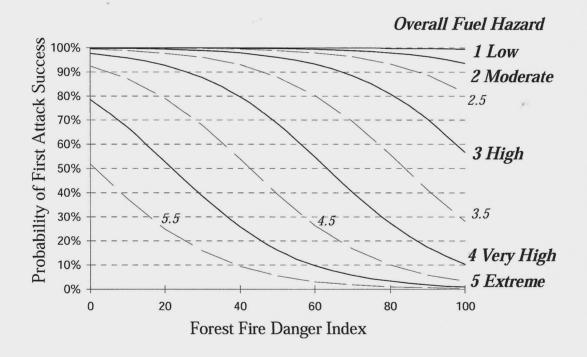
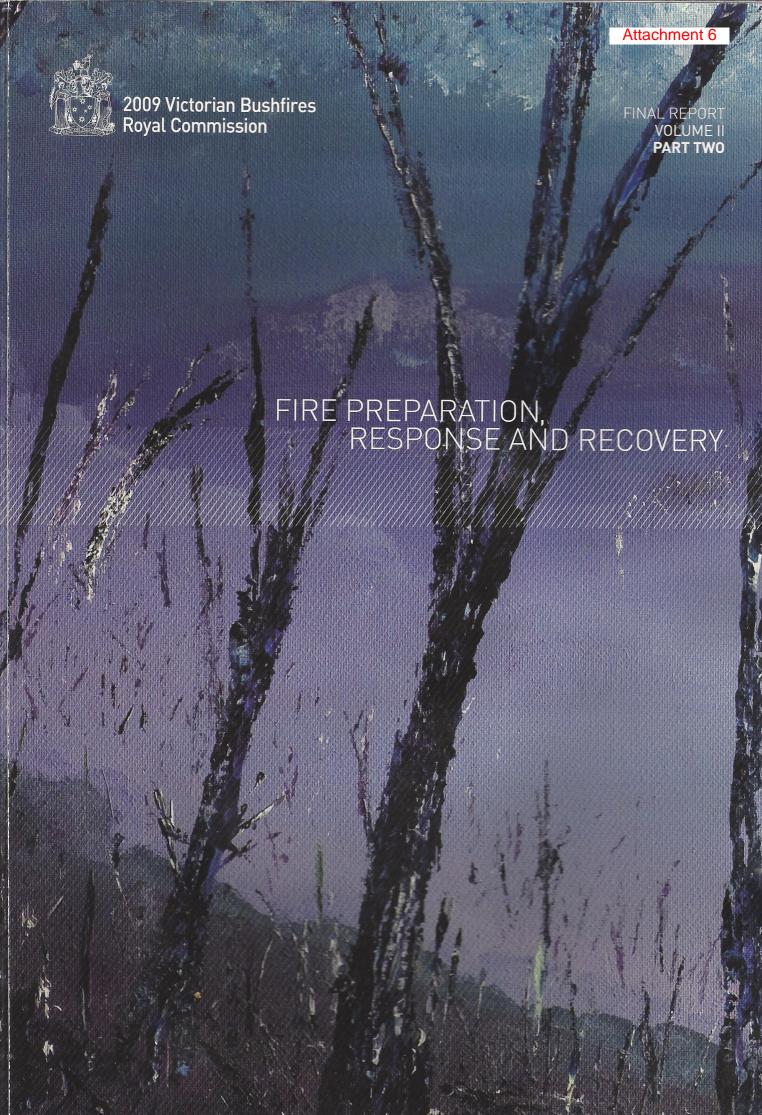


Figure 2. Probability of first attack success



called for the government to fund DSE to enable it to increase its workforce and skill levels to enable it to carry out higher levels of prescribed burning.¹³⁹

Similarly, the Australian Workers Union supports increased prescribed burning. Mr Cesar Melhem, the State Secretary, described it as an important tool for reducing fuel loads and minimising the incidence and intensity of bushfires. The union strongly supports an annual 385,000-hectare rolling target.¹⁴⁰

DSE has continued with a 130,000-hectare target for prescribed burning, despite the recognition by it and others that a substantial increase in such burning is necessary for community protection. DSE has not been held accountable for this. The State has failed to respond to numerous recommendations and provide the necessary resourcing for increased prescribed burning. This reflects a general lack of will to do the level of burning necessary for community and environmental protection by reducing the risk of large and intense bushfires.

The Commission considers that a target of 5 to 8 per cent prescribed burning of public land is necessary for community safety and would not pose unacceptable environmental risks, particularly if priority is given to the dry eucalypt forests referred to by the expert panel.

RECOMMENDATION 56

The State fund and commit to implementing a long-term program of prescribed burning based on an annual rolling target of 5 per cent minimum of public land.

RECOMMENDATION 57

The Department of Sustainability and Environment report annually on prescribed burning outcomes in a manner that meets public accountability objectives, including publishing details of targets, area burnt, funds expended on the program, and impacts on biodiversity.

7.4.4 COSTS

If the community is to understand and appreciate the benefits that accrue from prescribed burning, it must have an understanding of the costs and be able to compare those against the costs associated with fire suppression. The expert panel referred to the importance of this information being available.¹⁴¹ Professor Bradstock noted that the rudimentary nature of current information 'imposes a major impediment to informed decision-making about prescribed fire'.¹⁴²

Mr Wilson said he had been in his current job, as Secretary of DSE, for six months and is committed to being able to provide information on the cost of prescribed burning, but he was currently unable to provide a figure to the Commission. He stated that he had been advised that it was a 'vexed issue'. 143 Yet, the Code of Practice requires that the department record its expenditure on prescribed burning. 144

The Commission finds it inexplicable that, despite recommendations since 2003 to report the costs associated with prescribed burning, DSE (or its former entity) is unable to provide this vital information. If the current cost is not recorded and reported, it is difficult to understand how future funding, resources and increases in prescribed burning can be properly assessed and allocated. There is also the important question of public accountability—not just of the efforts and resources applied, but also of the goal set by government and reflected in its annual budgetary allocations.