



Inquiry into The Incidence and Impact of Bushfires

Submission No.212

**Victorian Association of Forest Industries submission to the House of
Representatives Select Committee on the Recent Australian Bushfires**

Executive Summary

The Victorian Association of Forest Industries welcomes the opportunity to place a submission before the House of Representatives Select Committee on the Recent Australian Bushfires.

VAFI is an industry organisation representing the companies employed in the sustainable harvesting and processing and of timber natural timber from Victoria's State Forest. Currently the industry is going through a significant downsizing as a result of a 30% statewide reduction in sustainable yield and a decision by State Government to cease timber harvesting the Otway Ranges Forest. The industry's future depends upon good management practices in both conservation reserves and multi-use State Forest

The fires earlier this year that burnt approximately 1.1 million hectares of forest in Bogong region of North East Victoria have had an impact on the timber industry, the communities they support and the environment. Timber supplies have been seriously disrupted, valuable resource is at risk, current sustainable yield levels are threatened, and environmental values have been undermined.

The prolonged drought and fuels high and at dangerously low moisture content levels not doubt were contributing factors. However VAFI believes that the State could have been better prepared to handle the situation.

In particular, in VAFI's view, a number of issues have emerged as key to better preparation in the future, including improved initial attack capability, better forest access, skilled and experienced fire fighting personnel, and a more adequate fuel reduction burning program.

VAFI contends that the downsizing of the timber industry in the forest has been a significant contributing factor and that further reduction will only compound these problems.

Conversely, ensuring the ongoing presence of the timber industry in State Forest, and preferably an expansion of that presence, is a legitimate and cost-effective means of significantly supplementing vital forest management and emergency fire fighting resources.

Failure to do so, risks further damage to the environmental, social and economic values of our forests.

VAFI is also concerned about the fire risk within National Parks, because of the lack of access tracks, experienced personnel and fuel reduction burning. This places both commercial forestry activities in neighbouring forest at risk, and also threatens the very values for which the Parks were created. It also leads to a self-defeating and destructive cycle of placing more forest in designated parks.

Disturbance and fire management regimes for existing parks should be identified, costed and properly resourced, preferably before any new parks are created. Disturbance and fire management regimes should be thoroughly identified and costed and demonstrably resourced as part of the evaluation process for any proposed park.

Greater transparency is needed in regard to fuel reduction burning. That DSE targets should be clear for State Forest and Forested National Park, and be described in both hectares and per centage of total area.

Introduction

The fires of 1939 could never happen again – the claim of many during the 1970s, 80s and 90s.

So why did the Bogong fire complex of 2003 develop to an area in excess of 1.3 million hectares from a lightning storm on 8 January to its final capitulation in late February?

Why was this fire allowed to develop and continue to burn for seven weeks when in fact there were few, if any extreme fire weather days, such as occurred in Canberra on 19 January? Certainly we were suffering the effects of a prolonged drought, with fuels at dangerously low moisture content levels, and the weather was generally hot during January and February. So why weren't we better prepared to handle the situation that confronted us on 8 January when this multiple lightning strike situation was little different to those which confronted public land managers in the North East of Victoria in the past; the most recent notable examples being in 1985 and 1986?

VAFI is of the view, following discussions with a number of experienced persons involved in the Bogong fire, that there were some standout reasons why the fire developed the way it did. Fire control experts in Australia are of the opinion that fire management begins well before lightning strikes trigger the first flames¹. They will tell you that the keys to minimising damage to life and property are:

- fuel management;
- easy access, and;
- rapid and efficient initial attack by firefighters who have a high degree of skill and experience in the particular fuel types in which they are expected to work.

These issues are explored in more detail in the following sections

¹ Cheney, P. 2003 "Economic rationalism, fear of litigation and the perpetuation of disaster fires", presented during Session 4: Policy, Institutional arrangement and the legal framework, of **Australia burning – the future of fire**, the ANU Fire Forum, 19 – 20 February 2003 Canberra.

Key Issues

Fuel Loads

Forest fires vary in intensity with the moisture content of the fuel, the fuel load and type, and the weather conditions. The intensity of a fuel reduction burn may be less than 500 kW/m with flames about 1.5m tall, whereas the intensity of a fire that scorches the crown of tree-tops in a forest is up to 3,000 kW/m and flames 6m tall. A high intensity forest fire may be up to 7,000 kW/m and over 15m tall, and fires of the intensity of Ash Wednesday may be as high as 100,000 kW/m.

Beyond 2,000 kW/m, there is no prospect of extinguishing the fire regardless of the assets and methods deployed. That is, forest fires can only be controlled at about 2 to 3% of the maximum intensity that fires are capable of reaching in Australia.

Fires grow in intensity at an exponential rate. If all other factors are constant, then less fuel increases the time it takes for a fire to reach higher intensity. Given successful control is more likely if firefighters can get to the fire quickly when the fire intensity is low enough for them to be able to control the fire, less fuel means a greater window of opportunity to control the fire.

Naturally, if there is less fuel on the forest floor then there is less potential for the fire to reach high intensity. There is also considerably less loose fuel to be converted into embers. The presence of embers is the major contributor to fires spotting, and loss of buildings during bush fires.

Controlled low intensity fires in a "mosaic" pattern to minimise the impact on the ecosystem can reduce fuel loads. The higher the intensity of the fire, the greater the environmental impact due the increased fire affected area, soil damage due to exposure to heat, plant deaths, and loss of hollow-bearing limbs and logs.

The Auditor General Of Victoria's report into Fire Prevention and Preparedness, tabled on 8 May 2003 makes the following pertinent points:

- "The DSE's* strategic management of hazard reduction on public land has been poor. The DSE has consistently failed to achieve its own hazard reduction targets, however;
- The significance of this failure cannot be easily assessed, because the DSE does not report on changes to the level of risk associated with the completion or failure to complete hazard management activities."

[And further]

- "Arrangements for managing fuel reduction burning at a strategic level require attention.
- "While a strong process for establishing fuel reduction targets is in place, funding arrangements do not support the achievement of those targets.
- "Achieving fuel reduction targets is likely to require a significant increase in resources, however, the DSE is not in a position to perform rigorous analysis assessing the benefits of any increase. These issues need to be addressed as a priority

*[Department of Sustainability and Environment, the department responsible for managing all forest on Crown land]

Lack of fuel reduction burning has been the subject of much discussion since the fire and although agencies claim that fuel reduction burning is still a priority activity, many in the community doubt that the fuel reduction burning program is adequate or can be compared with what was achieved in the annual burning programs during the 60s, 70s and 80s. It is apparent to most observers that this decrease in fuel reduction burning has occurred principally in National Parks and other reserves.

The Forests and Fire Management Output Group of the Department of Environment and Sustainability responsible for fire control on 8.8million hectares of public land, including areas that fall under the tenures of State Forests and Parks.

Historical data in Table 2 shows that in the 10 years from 1974/75 to 1983/84, the average area of land that experienced fuel reduction burning was almost 225,000 ha per annum². In contrast, the average area burnt in recent times is almost 80,000 ha per annum.

The rate of fuel reduction burning has fallen to about one-third of the average from 20 years ago.

Therefore, we could argue that:

- Fuel loads in forest areas are building to higher levels than a generation ago, and;
- Our firefighting staff are getting one-third of the experience compared to 20 years ago

Table 2 Gross Areas Treated by Fuel-Reduction Burn

Year	Area of Fuel Reduction Burns (ha)
1974/75	165 920
1975/76	204 820
1976/77	188 870
1977/78	164 760
1978/79	98 950
1979/80	345 050
1980/81	477 160
1981/82	167 140
1982/83	62 350
1983/84	370 000
Average	224 500

Table 1 Fuel reduction burn areas to 2001-02.

Year	Area of Fuel Reduction Burns (ha)
1997-98	40,000 ¹
1998-99	104,584
1999-00	105,688
2000-01	65,800
2001-02	81,140 ¹
Average	79,442

² Rawson, R., Billing, P. & Rees, B. 1985 "Effectiveness of Fuel Reduction Burning - 10 Case Studies", Research Report No.25, Department of Natural Resources and Environment.

The Fire Management Branch of the Department of Conservation and Natural Resources (which later changed to DNRE, and now DSE and DPI) found that fuel reduction burning was a valuable tool in the suppression of wildfires in heaths and woodlands³.

The level of fuel reduction burning carried out in recent years raises the following questions:

- Why the target area of fuel reduction burns is so low compared to the average area burned 20 years ago?
- What is an appropriate area to be burned for fuel reduction every year?
- Is there really a conflict between burning for fuel reduction and burning for environmental reasons?

Traditionally fuel reduction burning has been carried out by forest personnel in State Forest for community protection as well as protection of forest assets, such as the valuable alpine and mountain ash forests of Central and Eastern Victoria, which is the mainstay of the future of our hardwood timber industry.

During the fire this year an estimated 20,000 ha of this valuable resource in State Forest was destroyed in the recent fire, pointing to one outcome of the current level of fuel reduction burning.

As public land has been progressively transferred to National Park and reserves over the past 20 years, less and less fuel reduction burns have been undertaken on an annual basis. This trend must be reversed and if necessary legislation put in place to ensure adequate fuel reduction burns are undertaken to protect our many assets.

VAFI believes greater transparency is needed in regard to fuel reduction burning. That DSE targets should be clear for State Forest and Forested National Park, and be described in both hectares and percentage of total area.

Further there is a need to ensure that appropriate levels of fuel reduction burning are clearly identified and resourced for all existing National Parks and State Forest. Such regimes should be clearly described and costed and funding sources identified as part of the process for establishing new Parks.

³ Grant, S.R and Wouters, M.A. 1993 "The effect of fuel reduction burning on the suppression of four wildfires in western Victoria", Research Report No. 41, Fire Management Branch, Department of Conservation and Natural Resources.

Skilled & experienced fire fighters with local knowledge

The intelligent use of controlled fires cannot be conducted without a trained and experienced workforce. This workforce is also the backbone of human resources when major conflagrations occur.

The Auditors report states:

- "It takes up to 15 years for an officer to build up the proficiency required to manage a large multi-agency response to a wildfire. Much of the State's wildfire expertise is in DSE."
- "However, the DSE has an ageing work force, and many of its key fire management personnel are approaching retirement age. Without effective succession planning, the State's capacity to respond to wildfire emergencies may be jeopardised. Long-term work force planning will be essential to ensure that future needs are met."

From these statements it is clear that fuel reduction burning is essential, that level at which it is occurring is inadequate by the State Government's own standards, and that its ability to support this activity in the future is threatened due to a lack of experienced personnel.

VAFI contends that there is a close relationship between the presence of a viable native forest industry and fuel management; rapid fire-fighting access and the provision of a skilled workforce

The number of departmental personnel with a real knowledge and understanding of the bush has drastically reduced in recent years, since the demise of the Forests Commission in 1984 and the downsizing of the hardwood timber industry in the North East.

Prior to 1985 a District Forester, one or more assistant foresters, 4 or more forest overseers and between 6 and 15 permanent crew were attached to 8 Forest Districts in the North East (Corryong, Tallangatta, Beechworth, Myrtleford, Bright, Benalla, Mansfield and Alexandra). These personnel (some 150+) knew their "patch" well, including areas of National Park and other reserves, and were well equipped to handle a fire situation with the assistance of National Parks and other personnel.

Today the number of experienced departmental forest personnel throughout the North East is probably less than 40, who now, more often than not, find themselves working under the direction of Parks Victoria personnel in a campaign fire situation.

This shortfall in forest staff has not been made up by Parks personnel, because they do not have the understanding and knowledge of the bush generally that their predecessors in the forest service.

In addition to manpower, each of the old forest districts had one or more heavy bulldozers and graders, in addition to the smaller specialised fire fighting dozers, but all of these larger machines, all well suited to fire combat work, have been sold off.

Prior to 1985 hardwood timber mills were located at many locations throughout the North East, e.g. Corryong (2), Mitta Mitta, Granite Flat, Wodonga, Yackandandah, Glen Creek, Eurobin, Mt Beauty, Porepunkah, Wangaratta, Stanley, Benalla, Mansfield (many) and Whitfield – to name a few. All of these mills, and others to the south, had logging crews working in the forest, many in remote areas, with men and heavy machinery ready and

able to fight forest fires. Today, of the above mills, we have remaining Corryong (1), Mansfield (1), Benalla and Whitfield, with only a fraction of the available fire fighting force available.

This drain of experienced fire fighting personnel and equipment cannot simply be replaced with numbers of casual summer fire fighters and hired machines to achieve the same fire fighting capacity, as the critical bush and fire fighting experience components are missing.

As a condition of operating the forest, the industry is required to supply its bulldozers and transport machinery and operating personnel to fight the fires, particularly in regard to creating instant access for fire crews and creating fire breaks.

These crews provide considerable local knowledge, experience in using heavy equipment in rugged bush terrain, and experience on fire control. They present a valuable resource that is made even more valuable by its ready availability. Further they are an 'on-tap' resource that is only paid for when deployed, and as such its ongoing maintenance and upgrade is not a constant drain on the public purse

During the fires in January some 83 bulldozers and crews supported the fire fighting effort. It is anticipated that almost half may exit the industry as a part of the industry downsizing following from the review and subsequent reduction of the sustainable yield

This presents a major problem of resourcing future fire fighting efforts. Additionally, the downsizing of the industry is also likely to impact on the level and type of equipment maintained by DSE full time. Removal of harvesting from the Otways will almost certainly leave little work and little reason for DSE to retain the two bulldozers it currently uses to support its commercial forestry operations.

Experience in fire control

The lack of experience in actual fire fighting control of personnel was, in VAFI's view, another factor contributing to the inability to control the recent fires. With the increased use of aircraft for fire control, and other improved technology, the number of forest fires that develop into major fires that require significant manual input has decreased, e.g. there have been no major forest fires in the North East between 1985 and 2003; hence the opportunity for personnel to gain experience in fire control has decreased.

As a consequence the main opportunity for fire fighters to gain experience with high intensity fires is by use of prescribed fires for slash burning following logging operations or broad area fuel reduction burns. But the curtailment of hardwood logging in the North East and the reluctance in recent years to carry out fuel reduction burns has resulted in these opportunities disappearing. Gary Morgan, DSE Chief Fire Officer, at a recent seminar stated that staff who had undertaken such regular fire work were better equipped to handle forest fires.

The lack of experience was demonstrated on numerous occasions during the Bogong fire

If timber production continues to be constrained then it is expected numbers across the rest of the State as per the North East. At the time of writing regional departmental briefings were occurring in regard to downsizing. While it is unclear the numbers that might be employed if National Parks are created, the predilection of Park administration to cool burn is considerably less than that of State Forest administration. Compounding both the fuel-load reduction and emergency response effectiveness problems. Consequently there is considerable risk that these areas will face the same fire disaster due to a shortfall in expertise when confronted with an inevitable fire situation.

Inability to aggressively attack the fire

This lack of experience was demonstrated on a number of occasions in the recent Bogong fires, with crews at times pulling out of areas where they would not have in the past. In VAFI's view, this suggests a lack of local knowledge both at the front line and at the planning level.

It was evident that an extremely cautious approach was taken throughout the entire fire effort and brings into question the level of experience and confidence of our fire fighting personnel.

While VAFI appreciates and fully supports concerns about safety – and the Linton inquiry has highlighted the responsibility of decision makers in this regard – it is deeply concerned that for reasons of lack of experience, senior fire personnel may lack the necessary confidence and experience to make appropriate decisions regarding crew deployment.

The media has suggested this lack of aggression is linked to the focus of the fire fighting effort, which was to protect private property assets. VAFI is disappointed that the focus on private property assets appears to have led to a markedly reduced willingness to devote resources to protect the valuable commercial alpine ash forest assets. In excess of 20,000 ha of production alpine ash forest was burnt, possibly significantly affecting the supply of sawlogs for the next 80 years.

Initial Attack & Aircraft

As stated earlier, fires can only be controlled when they have a low intensity and this occurs in their initial stages. Therefore, controlling fires in their initial stages is critical.

During the fires of 2003, there was an apparent reluctance/inability to take early effective action to deal with lightning strikes in remote areas. The lack of access roads may well have been a contributing factor.

DSE now depends heavily on air attack to deliver fast and effective initial attack on remote fires. Cranes are most effective when working in multiples so that the turnaround time is reduced. The Bell helicopters are excellent in the right conditions for stumps, flare-ups, working on fire fringes and securing the safety of ground crews. Bombers are useful for dropping retardant in line-building and foam for crew safety and support. All forms of aircraft are only effective in the early stages of fire growth in the right weather conditions. They have low effectiveness in smoky, low visibility conditions, or high wind. They should be seen as complementing ground crews, not replacing them. If fire-fighters rely too heavily on aerial suppression then they limit their opportunities for control because aircraft are not suitable for every fire situation.

Reliance on air attack risks failure in a multiple-fire situation like that which occurred in 2003 unless it is supported by a determined ground attack by experienced forest fire fighters.

The ground attack was clearly unsuccessful in these fires and reflects the lack of experienced fire fighters required to do the job. Good forest access and local knowledge by fire fighters is critical and both of these were found lacking.

Aerial suppression can be very effective only at certain stages of the fire. For instance, cranes are excellent during first attack and may even extinguish small fires, but a ground crew is still required to follow-up and check the fire.

Initial Attack & Access

If aircraft cannot be relied upon in every fire situation, then the responsibility for control falls to ground crews.

Ground crews are only effective if they can get to the fire, and that means maintaining a system of roads capable of carrying firefighting vehicles.

A reduction in forest access due to the closure or lack of maintenance of roads and tracks, many of which were built by the timber industry at its own cost, is a major concern. This situation has been allowed to develop through both lack of funds for road and track maintenance and “green” pressure to restrict access to areas of (now) park and reserve.

The contribution by the timber industry to forest access is considerable. The DSE Vic Forests financial performance report on its website states:

- Roothing recoups are collected from the logging industry to establish and maintain access roads to logging areas.
- The recoups are levied on the volume of sawlogs, residual logs and pulpwood sold. Although the volume of residual logs and pulpwood sold during 2001/02 decreased, the roading levy was increased in 2001/02 and largely offset the reduction in volumes.
- The revenue raised for roading was just over \$13 million for both 2001/02 and 2000/01

Removal or downsizing of the industry will inevitably lead to fewer access roads in the forest. It is anticipated that unless new funding sources are found, road funding in the Otway Ranges will drop from \$300,000 per year to in the order of \$40,000, following the withdrawal of the timber industry.

Increasing influence of green issues

VAFI is concerned that the increasing influence of environmental lobby groups has led to an increase in conservation regulations and practices that impede efficient fire fighting efforts to the detriment of forest values and personnel safety. During the fires, participants in the fire effort reported examples of impediments created by regulations and practices focussed on conservation at the exclusion of other considerations— particularly in Parks Victoria’s jurisdiction – including:

- In a Mullundung State Forest, a dozer operator was stopped by an officer from crossing the road into a flora and fauna reserve to follow the fire, and was only allowed in one hour later, by which time the fire had escaped.
- Parks’ back burning fire trails have in many cases only allowed to be one dozer blade in width – compared to at least two in State forests – allowing the fires to jump, and creating unsafe situations for personnel.
- Operators were not permitted to cross streams or to put in side cuts again allowing fires to get away.
- Prescribed burns are not done to the same degree in parks as they are in State forests, as forests are listed as valuable assets requiring protection. In VAFI’s view, this is because of the pressure applied by environmental lobby groups to limit any human interference.
- There is some ambiguity on back burning. The Flora and Fauna Guarantee has listed regular burning as a threatening process on the one hand, while the Department of

Natural Resources and the Environment and Parks said in a 2002 report that the lack of adequate burning was threatening biodiversity in many areas.

Commercial Impact on the industry

An immediate impact of the fires was the reduction, and at some times complete halt to harvesting operations, while crews were decade to the fire-fighting task. In many instances this was for weeks at a time. While the Government paid for equipment and personnel deployed, the remainder of the harvesting and haulage team was idle.

Additionally a number of mills faced critical timber supply issues.

It is estimated that in excess of 20,000 ha of production alpine ash forest has been burnt, although it is understood that some of this forest was burnt at low intensity and that the forest may have survived.

The Land Conservation Council Melbourne Study 2 Final Recommendations 1994 estimated the value of products ex the mill gate from mountain ash forests, a close relative of alpine ash, that had regrown from the 1939 fires was worth \$234,000 per ha in mill door products and \$500,000 per ha at point of consumption.

This value cannot be directly translated to the burnt alpine ash forests as these forests are much slower in growth, but more valuable in wood quality. Furthermore some of the forests burnt are still young regrowth. However this suggests that the area burnt would have several billion in potential forest products at the point of consumption.

Some of this will be salvaged but subsequently there will be a significant impact on the sustainable supply of sawlogs until the regrowth from the 2003 fires reaches millable age in around 80 years. The final impact of these fires on timber production is not yet known, but it is possible that the 100,000 m³/yr of sustainable supplies of D+ sawlogs from the Tambo and North East Forest Management Areas will be cut substantially – possibly this could be in the order of half reducing State-wide supplies by almost 10%.

Conclusion

VAFI is of the view that major fires like the recent Bogong fire will continue to occur in the future if we are not prepared to address the fundamental problems :

- rapid and effective initial attack capability
- good forest access
- a body of skilled and experienced fire fighting personnel and equipment
- an adequate fuel reduction burning program.

Our aerial attack capability and other technological improvements made in recent years will allow agencies to get on top of most fires in most situations, but as demonstrated in 2003, will not solve the problem of a multi fire situation. Instead a holistic approach is needed.

We need to ensure that we have an appropriate the presence of experienced and skilled forestry personnel and in-forest workers, such as those involved in the timber industry, and particularly an adequate fuel reduction program.

The most extensive and valuable native forest resource in Victoria is east of the Hume Highway. It is imperative for the future protection of this forest, as well as adjoining National Parks and associated communities and townships, that the remaining timber industry in Central and Eastern Victoria be maintained and, if possible, expanded.

With the devastation of the ash resource caused by the recent fires it is difficult to see the hardwood industry revitalised in the North East in the short term. The recent cut back in sustainable yield will see a further 50% reduction in forest operations in East and Central Gippsland in the near future, the industry in the Wombat Forest decimated and a total close down of the industry in the Otways by 2006.

The most positive move the Government can make towards providing the nucleus of a future experienced forest fire fighting force is to ensure there is no further cut back in forestry and the native forest hardwood industry to at least retain what we have left of that valuable fire fighting resource.