

FIRE NOTE

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THE STAY AND DEFEND YOUR PROPERTY OR GO EARLY POLICY

THE AFAC POSITION AND THE BUSHIFRE CRC'S CURRENT RESEARCH

In February 2006 the Australasian Fire Authorities Council (AFAC), in collaboration with the Australian State and Territory fire agencies released a position paper that is designed to provide guidance to house holders in relation to both their individual safety, and the protection of their homes in the event of a bushfire.

The guidance set out below represents AFAC's current position in relation to these matters. The position is based on available evidence and experience.

The Bushfire CRC currently has several research projects underway that are designed to improve our understanding of this key community safety component of bushfire management. A summary of these projects is also provided in this publication.

AFAC'S POSITION ON BUSHFIRES AND COMMUNITY SAFETY

PREAMBLE

This paper expresses the Australasian Fire Authorities Council's (AFAC's) position on the safety of residents and their homes during bushfire events. The paper includes principles for national application by member agencies in all Australian states and territories, subject to relevant local legislation and local refinement.

The paper provides guidance on good practice for managing community safety in bushfires, and is supported by sub-papers that expand on key points.

This position is based on available evidence and experience, and may change following further research, including research conducted by the Bushfire Cooperative Research Centre.

PURPOSE

The purpose of this paper is to articulate a national position that provides the doctrine and describes good practice in relation to creating and maintaining bushfire-safe communities throughout Australia.

POSITION

BUSHFIRES ARE A COMMON AND NORMAL OCCURRENCE

Fire is a normal part of Australia's natural environment, and bushfires are a common occurrence during drier periods of the year in most places. The frequency and intensity of fires varies throughout the landscape under natural regimes. Various land uses and land management practices have modified, and continue to modify, natural fire regimes.

BUSHFIRES CAN CAUSE DEATH AND INJURY TO PEOPLE AND ANIMALS, AND DAMAGE TO PROPERTY, THE NATURAL ENVIRONMENT AND OTHER COMMUNITY ASSETS

Bushfires can be dangerous events that threaten life and property. Bushfires that occur on hot, dry and windy days frequently cause significant damage to built assets and occasionally cause loss of life.

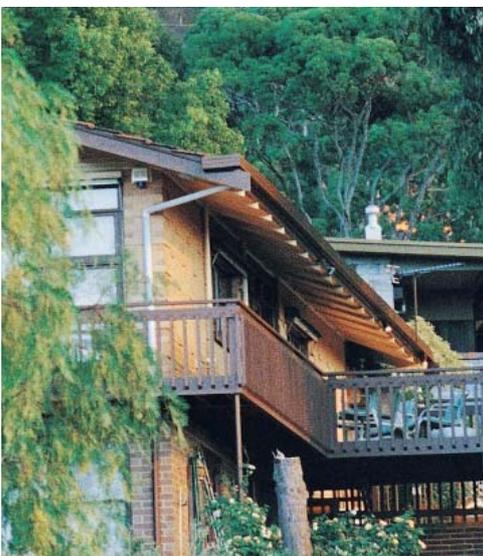
While fire is important to maintain many natural ecosystems, fire of inappropriate frequency and/or intensity can cause damage to natural ecosystems. Inappropriate fire regimes are a threat to biodiversity, water catchments, and air quality and landscape values. Both too much and too little fire can damage ecosystems.

SUMMARY

For those living in areas prone to bushfires AFAC advises;

- properties should be well prepared well before a bushfire arrives;
- appropriately prepared and constructed buildings offer protection during bushfires, reducing the likelihood of bushfire-related injury and fatality;
- fire fighting resources cannot always protect every property. Those planning to stay and defend their properties must be prepared to be self-sufficient;
- a decision to stay and defend a well-prepared property or to leave must be made well in advance of the arrival of the bushfire;

- in planning to leave early decide where you are going, how you will get there, and what 'trigger' you will use to initiate your plan;
- those who cannot, or those who believe they would not cope with a bushfire, should leave well before a fire impacts on an area;
- evacuation at the last minute, ahead of a bushfire, is very dangerous; and
- large scale, mass evacuations of entire suburbs or communities require significant lead times and are unlikely to be conducted. Staying with an adequately prepared property or leaving early before the fire approaches are safer options than waiting for authorities to conduct evacuations.



LOSSES CAN BE REDUCED, NOT ALL WILL BE SAVED

Loss can be reduced or avoided in some cases, but cannot be entirely prevented. It is theoretically possible to prevent all loss by bushfire through the total removal of all bushfire fuels across the landscape. Such a measure is not possible in practical terms and is unacceptable to the community. A balance must be struck between measures taken to reduce or avoid loss due to bushfire and the protection of other values.

This compromise involves acceptance of the inevitability of some loss. Governments can assist the community to determine what level of risk it is prepared to accept. Fire agencies can inform governments and communities about these risks. The risk management approach adopted should be consistent with planning for other natural hazards.

Losses can be reduced if buildings are designed, constructed and maintained to resist bushfire. Totally bushfire-resistant buildings could be designed and built, at significant expense. However, other measures such as appropriate building siting and the management of site fuels can provide high levels of protection to less fire-resistant structures.

Appropriately prepared and constructed buildings offer protection to people during bushfires, reducing the likelihood of bushfire-related injury and fatality.

MANAGING RISK AND REDUCING LOSS IS A SHARED RESPONSIBILITY BETWEEN GOVERNMENT, HOUSEHOLDERS AND LAND MANAGERS

Fire agencies and some land management agencies have statutory responsibilities for managing bushfires. However, the steps that householders take to prepare for bushfires are crucial to the protection of their life and property. Fire fighting agencies will provide support and assistance during bushfires when and where possible, but their effectiveness will be compromised if people or properties are not adequately prepared for bushfire.

Householders need to be allowed and encouraged to take responsibility for their own preparedness and safety in bushfires. Fire agencies should support and assist the community to manage and prepare for bushfire, and encourage people to understand fire and to take actions necessary for their own protection and safety.

Education of the community should foster a sense of partnership between residents, neighbours, land-owners and managers, fire agencies and government in terms of bushfire risk management and response. Householders should be provided with knowledge and skills to enable them to prepare themselves and their property adequately to survive a bushfire, and to enable them to decide whether or not they will remain with their property if a bushfire threatens.

FIRE FIGHTING RESOURCES CANNOT ALWAYS PROTECT EVERY PROPERTY

In most circumstances fire agencies will be able to provide sufficient fire-fighting resources to defend threatened properties when bushfire occurs. However, there will be circumstances, such as on days of very high or extreme fire danger, when fire agencies are unable to provide fire-fighting resources in sufficient time and strength to prevent all loss of life and damage to property. Therefore people planning to defend their properties must be prepared to be self-sufficient.

In a bushfire, fire fighting resources are likely to be allocated where they will be most effective, not necessarily where losses are most likely.

PEOPLE NEED TO PREPARE, THEN STAY AND DEFEND THEIR PROPERTY, OR LEAVE EARLY

With proper preparation, most buildings can be successfully defended from bushfire. People need to prepare their properties so that they can be defended when bushfire threatens. They need to plan to stay and defend them, or plan to leave early.

It must be recognised that in limited cases, some buildings, due to their construction methods, construction materials, the site they are located on or their proximity to high and unmanageable fuel loads, cannot for all practical purposes be defended against high intensity bushfires. In these circumstances, householders should be encouraged to relocate early if the intensity of an approaching bushfire is likely to make conditions unsafe.

PREPARE

The most important aspect of preparation for people and their property is the creation and maintenance of a space within which a building can be defended against bushfire embers and radiant heat. Within this defensible space, bushfire fuels must be reduced to prevent or significantly reduce the ability of a fire to burn (and consequently spread to buildings). Other preparatory measures should be taken to minimise the chance of buildings igniting.

Properties should be prepared so that they provide a safe refuge: sheltering from radiant heat and ember attack in a properly prepared building should be the first choice of residents when a bushfire threatens.

Properties should be prepared for bushfire regardless of whether the occupants intend to stay and defend their property or relocate to a place where they feel safer. Proper preparation will improve the safety of firefighters and their ability to defend a building successfully even if the occupants are absent when a bushfire threatens. Well-prepared properties are also more likely to survive in the event that neither residents nor firefighters are available to protect them.

An unprepared property is not only at risk itself, but may also endanger neighbouring properties if it contributes to a bushfire's intensity. Fire fighters may not defend unprepared properties.

STAY AND DEFEND

Buildings are more likely to survive a bushfire if someone is there to protect them.

While fire agencies will strive to provide firefighting crews to protect properties during a bushfire, in some circumstances the fire agency may have insufficient resources to assign a crew to every threatened property. It is particularly during these times that well prepared people can take action to save their properties.

Most buildings lost in bushfires ignite from small fires caused by sparks and embers. These ignitions often occur immediately before, during, or up to several hours after, the passage of the main fire. By extinguishing small initial ignitions, people of adequate mental, emotional and physical fitness, equipped with appropriate skills and basic resources can save a building that would otherwise be lost in a fire.

If people remain to defend adequately prepared homes, losses and community disruption can be reduced.

Education of the community should include providing residents with the skills, knowledge and confidence they need to remain and protect their homes when a bushfire threatens.

GO EARLY

People should decide well in advance of a bushfire whether they will stay with their homes to defend them or leave if a bushfire threatens. They need to be provided with sufficient information to enable them to competently make this decision. Key factors to be considered include:

- whether the home is adequately constructed, maintained and prepared to withstand the impact of a fire at its expected intensity;
- contingency plans in case a fire is more intense than expected, or if the building catches fire and cannot be extinguished;
- and the physical, mental and emotional fitness of the people to cope with the impact of a bushfire.

If planning to leave early, people must decide where they will go, how they will get there, and what trigger they will use to initiate their plan (for example, vulnerable family members may be relocated to a safer place on days of high or extreme fire danger, even if no fire is burning in the locality).

People who plan to leave early must recognise that on days of very high or extreme fire danger, bushfires may break out nearby and spread at a rate that provides very little time to relocate.

It needs to be emphasised that people do not necessarily have to go far to be safe, a neighbouring property may be capable of providing a safe refuge.

Relocation to an adequately prepared place within the immediate vicinity often involves less disruption than travel to a more distant location, allows people to return quickly to their own property, and can be less distressing for those involved.

PEOPLE WHO CANNOT COPE WITH BUSHFIRE SHOULD RELOCATE WELL BEFORE THE FIRE IMPACTS THEIR LOCATION

Due to physical, mental or emotional incapacity to cope with the circumstances, some people would be safer well away rather than attempting to remain with their homes if threatened by fire.

Particular attention needs to be paid to providing for vulnerable residents who may need or wish to be relocated ahead of a bushfire. Plans need to be made well in advance to cope with the expected numbers and special needs of vulnerable populations. Particular consideration must be given to the needs of people who are relatively immobile due to age, disability, injury or illness, who have special medical needs (e.g. respirators, dialysis) or require the care of others (e.g. people with mental disabilities).

Vulnerable people living in areas where warning times may be very short should consider relocating permanently.

LAST MINUTE EVACUATIONS ARE DANGEROUS

Evacuation at the last minute ahead of a bushfire is dangerous. Smoke, noise, heat, flames, fire-fighting vehicles and panic all make fleeing in a vehicle or on foot dangerous. The risk of being overrun by fire is very real and has resulted in numerous fatalities. People caught in the open are likely to face severe and often fatal levels of radiant heat. All things being equal, people are safer in houses than in cars in a bushfire, and safer in cars than in the open.



It is much safer for people to remain in buildings than flee in the face of an approaching fire.

Education of the community must focus on encouraging people to prepare and stay in their homes as a fire approaches, rather than to flee at the last minute.

MASS EVACUATION IS NOT THE FAVOURED OPTION

Provided that adequate preparations have been made, it is better for people to remain with their homes than to be relocated to an evacuation point.

Large scale, mass evacuations of entire suburbs or communities require significant lead times, which are often unavailable. They are difficult to organise and execute efficiently, and involve significant disruption to people and communities. Large scale evacuations demand intensive management of issues such as shelter, feeding, transport, safety, communications, hygiene, medical needs, housing of pets and personal belongings. Mass evacuations can increase the tendency to panic.

Notwithstanding, it is recognised that there may be limited occasions where selective early relocation of vulnerable people may be appropriate. Any such relocation should be planned for and carried out well ahead of the fire. Planned and orderly relocation well ahead of the fire is always preferable to last minute emergency evacuation.

THE DECISION WHETHER TO ORDER EVACUATION SHOULD BE MADE BY THE LEAD FIRE COMBAT AUTHORITY

Ideally, people should make the decision of whether to stay or go for themselves. However, there will be cases where ordered evacuation will be considered by the authorities, overriding individual choice in the interests of public safety. The lead fire combat authority is the best placed to decide whether evacuations should be ordered. Where legislation confers on the police service the power to order evacuation, a formal agreement should be developed between fire agencies and police to specify procedures for consultation should ordered evacuation be contemplated.

Adequately prepared and resourced people should not be forcibly removed from adequately prepared properties.

Forcible evacuation of residents who resist should not be pursued at the cost of missing out on notifying others, or where this would unreasonably endanger the lives of police officers or others.

ROAD ACCESS MUST BE CAREFULLY MANAGED DURING FIRE EVENTS

Roads can be very dangerous during bushfires due to smoke reducing visibility, fallen trees and power lines, panicked drivers and the risk of fire overrun. Road use should be carefully managed to ensure safety and unimpeded access for fire fighting vehicles. As far as possible, access should

be maintained for residents and landowners, and denied to sightseers. Access to roads should only be limited while conditions are unsafe, and access reinstated as soon as possible to allow people to return to their properties, and infrastructure providers to restore essential services.

Access should be managed by police on the advice of the fire agency. Safety is the overriding concern, but every effort should be made to allow residents and landowners to reach their properties before the fire impacts and as soon as possible after the fire has passed.

IT IS ESSENTIAL FOR PEOPLE IN THREATENED COMMUNITIES TO HAVE READY ACCESS TO ACCURATE INFORMATION TO ASSIST IN DECISION MAKING

Access to accurate and timely information during periods of high fire danger and fire events is crucial to enable people to make appropriate decisions concerning their safety.

Information for threatened communities should be gathered by the fire agency and distributed through a variety of media appropriate to the situation, such as radio, television, newspapers/magazines, local newsletters, internet sites, recorded/staffed telephone messages, direct contact, and leaflet drop. Fire agencies need to provide the media and the community with information that is accurate, relevant, adequate, consistent, useful and timely. Sufficient information should be provided to allow householders to make an informed choice as to whether to stay and defend their properties or relocate elsewhere.

As the print and electronic media are a primary means of providing information to the community, and media organisations have a legitimate right to information regarding fire events, fire agencies should facilitate their access to relevant information and fire events. Fire agencies should manage media access to firegrounds to provide for the safety of media crews.

FIRE EMERGENCY PLANS SHOULD BE DEVELOPED FOR ALL AREAS WITH A BUSHFIRE RISK

Fire plans and strategies to provide for community safety should be developed for all areas with a bushfire risk. Fire agencies, local government, land managers and other stakeholders should collaborate to ensure appropriate and effective plans are in place well in advance of the bushfire season. People do not necessarily make logical or rational decisions in times of stress; plans will help ensure rational decisions are made. Plans must provide contingencies for a range of possible outcomes.

LAND USE PLANNING SHOULD BE USED TO ENHANCE COMMUNITY RESILIENCE TO BUSHFIRE

Bushfire considerations should be incorporated into every phase of land development from land use zoning and subdivision design, to building siting and design, access provisions and landscaping.

Planning for protection from bushfire should happen at all levels – there should be a continuum of planning from the national, state and local levels through to householders. Planning, particularly at the community and individual scale, can have significant benefits for community safety. The use of relevant legislation to facilitate such planning and preparation is supported.

FIRE AGENCIES SHOULD SUPPORT COMMUNITY RECOVERY

Planning for effective community recovery from bushfires is an essential component of bushfire management. Fire agencies should facilitate and support the recovery of communities and infrastructure. Establishment of a sense of partnership between the community and fire-fighting agencies is essential for successful recovery after bushfire events.

BUSHFIRE CRC RESEARCH

The Bushfire CRC is currently conducting several projects which are designed to enhance community safety during bushfires. Particularly relevant projects include:

PROJECT C6 - 'STAY AND DEFEND OR GO EARLY' POLICY

The essence of the current AFAC policy is that people should prepare themselves and their properties and stay and defend when a bushfire is likely, or leave the area well before the fire is likely to arrive.

This research project is working to identify impediments to the effective implementation of the current policy, and to suggest improvements. In addition, the project is examining ways of integrating the policy with other important factors in bushfire risk management. The project has compiled the evidence base behind the policy and has documented the associated legal situation across Australia.

The legal aspects are complicated because of the number of jurisdictions involved, the range of relevant fire and emergency service legislation, and the recent changes through legislation to the law of negligence. The global literature on evacuation has also been reviewed. Overseas material is however, of limited assistance because the 'Stay and Defend or Go Early' policy is not widely used outside Australia, although there is currently much interest in the approach.

Clearly, consistent evacuation policy positions that are well understood by emergency services personnel, the media and the public will result in more effective management of bushfires, and increased community safety.

Research has demonstrated that a well-prepared house can provide protection from fire, and that the presence of people prepared to defend the property is the most significant factor in determining its survival.

Currently, case studies of recent fires where there were significant issues surrounding evacuation or staying are being evaluated. The cases are being drawn from both Australia and from overseas.

Researchers are using a case study approach to assess the current AFAC policy based on the extent to which it meets the requirements of emergency services while also reflecting the choices people are likely to make during a major fire. As well as a comprehensive literature review, workshops with fire and emergency agencies, interviews, surveys and focus group interviews are being conducted.

The issue of evacuation is critical in major emergencies for several reasons, including:

- Early evacuation generally contributes to increased personal safety. However emergency managers must consider associated legal, political, social and logistical issues;
- There is extensive evidence that bushfire property losses are likely to increase if evacuation occurs;
- Late evacuation may put people in greater risk than if they had stayed in the house during a fire.

Bushfire Firenote No. 6 examines the legal issues of 'Stay and Go' and community warnings further.

PROJECT C7 - EVALUATING BUSHFIRE COMMUNITY EDUCATION PROGRAMS

This project is undertaking a comprehensive analysis of current Community Education Programs regarding bushfires. The effectiveness of these current programs is being assessed using a number of tools.

Fire agencies recognize that public safety and protection of assets during bushfires depends to a large extent on the community's capacity to respond effectively to the risk from bushfire events. This project is designed to advance the capability of fire agencies to evaluate the effectiveness of community safety and education programs. The project is designed to produce a cost-effectiveness model of the impact of current and future community safety programs.

PROJECT D1 - BUILDING AND OCCUPANT PROTECTION

Houses destroyed in bushfires often survive the fire front but are burned down during the following hours, due to wind-borne burning debris (ember attack). Well prepared house-holders who both stay and defend their homes as a bushfire passes, or who return to their homes once the fire-front has passed can often save their houses without endangering their lives.

This project is developing an improved awareness of the issues surrounding building loss in bushfires. Current research is providing insights into key elements of building design including: the use of timber decking; window glazing; fire resistant vegetation; external water sprays; roofing and external cladding; non-combustible fencing; and the management of domestic gas supplies on the property.

The project is designed to directly benefit communities living in the urban/bush interface.

Recently, investigations into the role different types of fencing can play in helping to defend homes against the threat of bushfire confirmed previous anecdotal evidence that solid, non-timber fencing offers the best relative protection for home owners. The full results of this research are being used by the CRC and the CSIRO to influence the development of building codes and planning guides used in bushfire prone areas. The research is also being used to assist residents to assess the relative risk of their properties, and in the development of education programs for local communities.

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Bushfire Cooperative Research Centre

Level 5/340 Albert Street
East Melbourne VIC 3002

Telephone: 03 9412 9600 | www.bushfirecrc.com
Bushfire CRC is a national research centre part of the Cooperative Research Centre (CRC) program, formed in partnership with fire and land management agencies in 2003 to undertake end-user focused research.

Australasian Fire Authorities Council

Level 5/340 Albert Street
East Melbourne VIC 3002

Telephone: 03 9418 2388 | www.afac.com.au

AFAC is the peak representative body for fire, emergency services and land management agencies in the Australasia region. It was established in 1993 and has 26 full and 10 affiliate members.