

4. CONCLUSION: IMPLICATIONS FOR THE ROLE OF FIRE MANAGEMENT AGENCIES

Managing the threat of major bushfires is becoming increasingly complex. With the emergence of urban-bush interface communities, issues such as the efficacy of mass evacuation, the development of effective warning systems, and the creation of self-reliant and resourceful communities will need to be confronted and resolved. The growing community desire to conserve our natural environment will need to be reconciled with fuel reduction burning, firebreak construction and other environmental modification strategies. The limitations of traditional fire suppression and prevention strategies under disaster conditions will need to be more widely understood by practitioners and communities alike.

In the face of these challenges, the sophisticated fire management agencies of the future will need to be able to draw upon a diverse but integrated mix of strategies to effectively manage the bushfire threat. These strategies may include:

- an efficient fire control capability, based on quick response to outbreaks of fire, before they become major conflagrations;
- extensive fuel reduction burning programs that recognise the relationship between fire and biodiversity;
- the development of strategies by communities for reducing their vulnerability to bushfires, in a way that accounts for their differing lifestyles, environments and values;
- an influential involvement in land-use planning processes to ensure development is sensible and sustainable; and
- standards which ensure that buildings constructed in areas susceptible to extreme fire behaviour incorporate bushfire protection features.

The most appropriate mix of strategies for any particular community or region will vary enormously. For example, fire management agencies charged with protecting traditional rural communities will employ substantially different fire protection strategies than those agencies concerned with urban-bush interface communities, plantations or national parks.

Therefore, to develop the most efficient and effective capability for reducing the threat of bushfire, fire management agencies will need to: (a) understand the factors that contribute to the vulnerability of any particular community or region, and (b) the extent to which various fire management agency strategies are able to reduce this vulnerability.

Traditionally, the options for reducing the bushfire threat have been confined by the notion that hazard is influenced only by features of the natural environment. Broadening our understanding of hazard to include all factors that make a particular community or region vulnerable to bushfire, including those less tangible factors such as the extent to which a community understands the bushfire threat and the resulting survival strategies developed by that community, will dramatically increase the options of fire management agencies. This will ensure that the strategies employed by fire management agencies reflect the increasingly complex nature of the bushfire threat.

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SUMMARY OF STATE AND FEDERAL REPORTS ON MAJOR CONFLAGRATIONS

A number of reports have been produced or commissioned by state and federal governments to investigate major conflagrations:

1. Stretton, L.E.B. 1939. *Report of the Royal Commission to Inquire into The Causes of and Measures Taken to Prevent the Bush Fires of January, 1939, and to Protect Life and Property and The Measures to be Taken to Prevent Bush Fires in Victoria and to Protect Life and Property in the Event of Future Bush Fires*. Melbourne: Government Printer, 41pp.

Commissioned after the 1939 Black Friday Fires in which 71 lives were lost, and one-tenth of the land area of the State was burnt, this report and its recommendations were very influential in laying the foundation of fire prevention and suppression operations carried out by fire management agencies in Victoria. In fact, the recommendations still form the underpinning of the legislation concerned with the management of bushfire in that state: the *Country Fire Authority Act 1958 (Vic.)* and the *Forests Act 1958 (Vic.)*.

2. Rodger, G.J. 1961. *Report of the Royal Commission Appointed to Enquire into and Report upon the Bush Fires of December, 1960 and January, February and March, 1961 in Western Australia*. Perth: Government Printer, 63pp.

This report examined 29 large fires in the South-West Land Division of Western Australia which together burned 964,000 acres. The most significant of these were the Dwellingup Fires which destroyed many buildings in the town of Dwellingup. No lives were lost. The report contains 27 recommendations, and was significant in providing the inspiration for the Western Australian Department of Conservation and Land Management's extensive fuel-reduction burning program.

3. Chambers, D.M. & Brettingham-Moore, C.G. 1967. *The Bush Fire Disaster of 7th February, 1967: Report and Summary of Evidence*. Hobart: Government Printer, 38pp.

This Judicial Inquiry investigated the bushfires of Hobart and surrounding districts which killed 62 people. The Inquiry was concerned only with ascertaining the facts surrounding the fires, the authors emphasising that they were not required to express their own opinions or make recommendations.

4. Barber, E. 1977. *Report of the Board of Inquiry into the Occurrence of Bush and Grass Fires in Victoria*. Melbourne: Government Printer, 213pp.

This comprehensive review of the 1977 Western District Fires was particularly influential in focussing attention on agency fire prevention responsibilities in Victoria, including those of the State Electricity Commission. Its recommendations have significantly influenced Regional and Municipal Fire Prevention Committee functions in Victoria. However, the report is careful to stress that the author was concerned with the specific locale in which the 1977 fires occurred, i.e. the grasslands west of

Melbourne. The numerous recommendations apply most appropriately to this particular type of ecosystem and its associated bushfire threat.

5. Miller, S.I., Carter, W. & Stephens, R.G. 1984. *Report of the Bushfire Review Committee on Bushfire Preparedness in Victoria, Australia, following the Ash Wednesday Fires 16 February 1983*. Melbourne: Government Printer, 174pp.

This comprehensive report was the first to deal extensively with the urban-bush interface threat. As a result, the authors have expanded their focus beyond traditional fire prevention and suppression issues to include such issues as community preparedness, warning systems, the efficacy of evacuation, and disaster management planning. The report includes 26 recommendations.

6. Standing Committee on Forestry. 1984. *The 1982/83 Bushfires: Implications for national cooperation and coordination based on direct State and Territory forest service experience*. Canberra: Australian Forestry Council, 19pp.

This short report includes 25 recommendations. The focus of the report is largely restricted to developing national arrangements for addressing those fire management issues that have an impact on forestry activities.

Other major reports investigating aspects of fire prevention and suppression include:

House of Representatives Standing Committee on Environment and Conservation. 1984. *Bushfires and the Australian Environment*. Canberra: Australian Government Publishing Service.

Lewis, S., Cheney, P. & Bell, D. 1994. *Report of the Fire Review Panel Conducting a Review of the Department of Conservation and Land Management's (CALM) prescribed burning policy and practices and Wildfire Threat Analysis*. Perth: Department of Conservation and Land Management.

Senate Standing Committee on Industry, Science, Technology, Transport, Communications & Infrastructure. 1994. *Disaster Management*. Canberra.

Tasmanian Fire Review Committee. 1994. *Review of Vegetation-Based Fire in Tasmania*. Hobart.

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PART II: ESSENTIAL ELEMENTS OF A NATIONAL BUSHFIRE PREPAREDNESS STRATEGY

Referring to the conclusion of the review of all state and federal reports on major conflagrations over the last 50 years (Part I of this report), the following are identified as essential elements of a national bushfire preparedness strategy:

1. FIRE CONTROL CAPABILITY

1.1 Interstate Support

Guidelines for movement of resources across state boundaries. Procedures for utilising national assets for the transportation of personnel.

SITUATION: Australian Fire Authorities Council (AFAC), through its Chief Officers' Consultative Committee, is preparing Mutual Aid arrangements for operations between State/Territory fire services. This will be done in consultation with Emergency Management Australia (EMA) to ensure State/Territory/Federal emergency management arrangements are compatible.

1.2 State Emergency Management Plans

Development of State emergency management plans for coordination of the movement of interstate resources in wildfire and other major emergency situations.

SITUATION: This is an issue for EMA/National Emergency Management Committee (NEMC) to address.

1.3 Command and Control Systems

Implementation of a nationally unified approach to fire and incident management, e.g. AIIMS-ICS.

SITUATION: EMA has agreed to sponsor the development of guidelines in line with issues addressed by Federal/State Ministers as a result of their meeting in December 1994.

1.4 Broaden AFAC's position paper entitled "Use of Aircraft for Firebombing in Australia" to further detail a position on the role of aircraft covering all operational applications during wildfire.

SITUATION: AFAC, through its Research and Development Committee, is reviewing its position on use of aircraft in support of fire operations, to take into account the large capacity airtanker option demonstrated by the Russians at the Avalon Airshow, in March 1995.

1.5 Develop minimum national criteria for response times and response capabilities for agencies responding to wildfire incidents.

SITUATION: Following discussions between Federal/State Ministers, AFAC has formed a working party to develop a national approach to Standards of Risk Management (formerly Standards of Fire Cover).

1.6 Implement the national training competencies for fire ground operation and management.

SITUATION: National Competency Standards have been completed and are used by all Fire Authorities and other public/private sector agencies.

1.7 Develop minimum Occupational Health & Safety standards covering protective clothing for wildfire as well as safety and survival requirements on the fireground.

SITUATION: A major research project covering the occupational safety and productivity of bushfire suppression crews is currently being carried out by Worksafe Australia. The project is jointly funded by the Rural Industries Research and Development Corporation (RIRDC) and AFAC and is due for completion in November 1995. AFAC through its Research and Development Committee is also working to develop a national standard for protective apparel for the structural and wildfire environment utilising the results of scientific research.

1.8 Develop minimum standards for appliance and minor equipment requirements to ensure standardisation and compatibility.

SITUATION: The Federal/State Ministers have discussed the issue, and AFAC, through its Research and Development Committee is working on this matter. However, while minimum standards will be developed, the size of equipment holdings by the individual agencies and budgetary constraints dictate that it will take time to achieve the desired commonality across Australia. In the interim, the agencies have agreed to maintain sufficient adaptors, etc., for effective interagency operations.

Additionally, there is an ongoing assessment by AFAC of what the market has to offer e.g. 'Freightliner' vehicle for large urban pumpers, and OKA (WA) vehicles for wildfire attack.

1.9 Develop minimum standards for communications equipment to ensure commonality and compatibility.

SITUATION: Federal/State Ministers have considered this issue as it extends beyond the fire agencies. The National Communications and Information Systems Advisory Group which reports to the NEMC, and includes fire agency representation, has been established to consider this matter.

1.10 Develop the application of real-time fire modelling based on the Geographic Information System as an aid to fire management and control.

SITUATION: Several of the agencies are developing real-time fire modelling based on Geographic Information Systems. AFAC will monitor developments and coordinate nation-wide implementation as appropriate to local needs and as funding allows.

1.11 Develop the application of a wildfire threat model based on the Geographic Information System which defines the level of risk and hazard and promotes a common standard.

SITUATION: Several of the agencies are developing/have developed such models. AFAC is also represented on Standards Association Committee BD/64, Construction in Bushfire-Prone Areas, where a GIS model that identifies level of risk is being considered.

1.12a. Research fireground performance with a view to improving the application of strategies and tactics as well as resources.

SITUATION: Being addressed by individual agencies, as national and international studies on fireground performance are proposed or undertaken.

b. Co-ordinate the practice of independent research via tertiary institutions and private practitioners.

SITUATION: Currently, there are individual agency links with tertiary institutions for this purpose. AFAC is currently considering how it might coordinate these arrangements to achieve maximum cost effectiveness.

c. Develop, promote and co-ordinate research required to improve fire ground performance.

SITUATION: Following discussions between Federal/State Ministers, AFAC has formed a working party to develop a national approach to Standards of Risk Management (formerly Standards of Fire Cover). As a matter of course, these issues will either be covered by this working party, or identified for further work by AFAC.

1.13 Develop the application of a minimum national standard for wildfire investigation.

SITUATION: The importance of fire investigation in the structural fire environment is well recognised and implemented by the agencies. Standards are being developed for the rural environment, and training being developed/delivered as part of the Australian Fire Competencies.

- 1.14 Identify and promote through the interchange of personnel, personal development of officers and firefighters, improved communications and co-operation between agencies.**

SITUATION: This issue actively pursued by the agencies, both nationally and overseas, and a proposal to consolidate an international firefighters exchange program is being developed by AFAC.

- 1.15 Communicate to all agencies the current developments and emerging trends in resourcing, equipment, techniques etc., in order to promote best practice methods.**

SITUATION: A core function of AFAC, which is achieved through its organisational structure i.e. the Council and its various Consultative Committees.

2. MANAGEMENT OF THE NATURAL AND BUILT ENVIRONMENTS

- 2.1** Develop minimum standards for fuel reduction and conservation burning as well as the application of hazard reduction in the urban/rural interface. The AFAC position paper entitled "Rural Fire Management" is the appropriate basis for this.

SITUATION: Links between AFAC, the agencies, CSIRO and Standards Australia help facilitate the desired outcomes in this area.

- 2.2** Development of a national standard for buildings in bushfire prone areas.

SITUATION: This matter is effectively dealt with by the Australian Standard on Construction in Bushfire-Prone Areas.

- 2.3** Develop the application of Geographic Information Systems to map and identify areas of high fire risk for the introduction of the national standard on buildings in bushfire prone areas. Develop minimum standards for controlling development in these areas.

SITUATION: As stated earlier, Standards Australia Committee BD/64 is considering this matter in the course of its review of the Australian Standard for Construction in Bushfire-Prone Areas.

- 2.4** Conduct, promote and coordinate the research into fire ecology, effectiveness of fuel reduction burning, the role of fire in land management and improving the understanding the techniques for such activities.

SITUATION: Nationally, the land management agencies address this matter as a matter of course. AFAC, through its Rural Fire Management Consultative Committee, has developed national positions on such matters as "Rural Fire Management", "Protection of Life and Property Against Wildfire" and "Managing Smoke in Planned Burning".

- 2.5** Develop an agenda of fire research requirements and deficiencies and then seek and co-ordinate contributions from tertiary institutions and private practitioners.

SITUATION: AFAC has the view that it needs to develop a national research agenda. This will be achieved by identifying research requirements, identifying the resources required for that research, identifying what relevant research is being conducted external to the agencies, both nationally and internationally, and forming partnerships with research institutions.

2.6 Develop, facilitate and promote a process to ensure all state and federal agencies are meeting their responsibilities with respect to the fire prevention aspects of land management.

SITUATION: A matter for each of the States/Territories and the individual agencies, and refers to compliance with legislative responsibilities/provisions, emergency management plans and local applications.

3. COMMUNITY PREPAREDNESS

- 3.1 Develop and promote the concept of the community taking more responsibility for their own safety. Agencies to provide necessary support through participative education and awareness programs.**

SITUATION: AFAC is developing a national agenda for ratification by its member agencies. It is anticipated that outcomes will include an understanding by the various agencies of how to address local needs and, where possible, have generic material prepared and published for use nationally.

- 3.2 Promote a greater involvement of local community participation in emergency management planning.**

SITUATION: AFAC, and the agencies recognise the importance of community participation. Because emergency management arrangements need to be wider than just fire, State and territory emergency management committees need to be involved. On a national level, EMA involvement will also be important.

- 3.3 Develop and promote a national attitude towards fire safety and the family home acting as a refuge.**

SITUATION: AFAC position paper "Protection of Life and Property Against Wildfire" addresses this matter.

- 3.4 Research the development of more efficient and effective community warning systems and follow up by targeting awareness campaigns within potentially high risk areas (fire, flood, cyclone etc.).**

SITUATION: AFAC/EMA currently considering a partnership approach to this matter. A standard approach to community warning is required which would also cover wildfire.

- 3.5a. Develop, promote and coordinate sociological research into the community's perception and response to the bushfire threat.**

b. Seek input from tertiary institutions and private practitioners.

c. Develop and apply results through awareness and community involvement programs.

SITUATION: The agencies recognise the importance of this matter and a number of independent studies have been commissioned with the results being pooled by AFAC for use nationally.

- 3.6a. Develop minimum standards for the introduction of community involvement programs, where appropriate, in high risk areas. The programs should promote involvement in emergency management planning, community action and preparedness as well as an individual's responsibilities and accountabilities.**
- b. Investigate and identify the differences in effectiveness of widespread advertising versus the development of the community group process. Influence the allocation of appropriate resources.**

SITUATION: Considerable emphasis is placed on community preparedness by all agencies, utilising programs such as "Community Fireguard". However, there are substantial opportunities for broadening the approach.