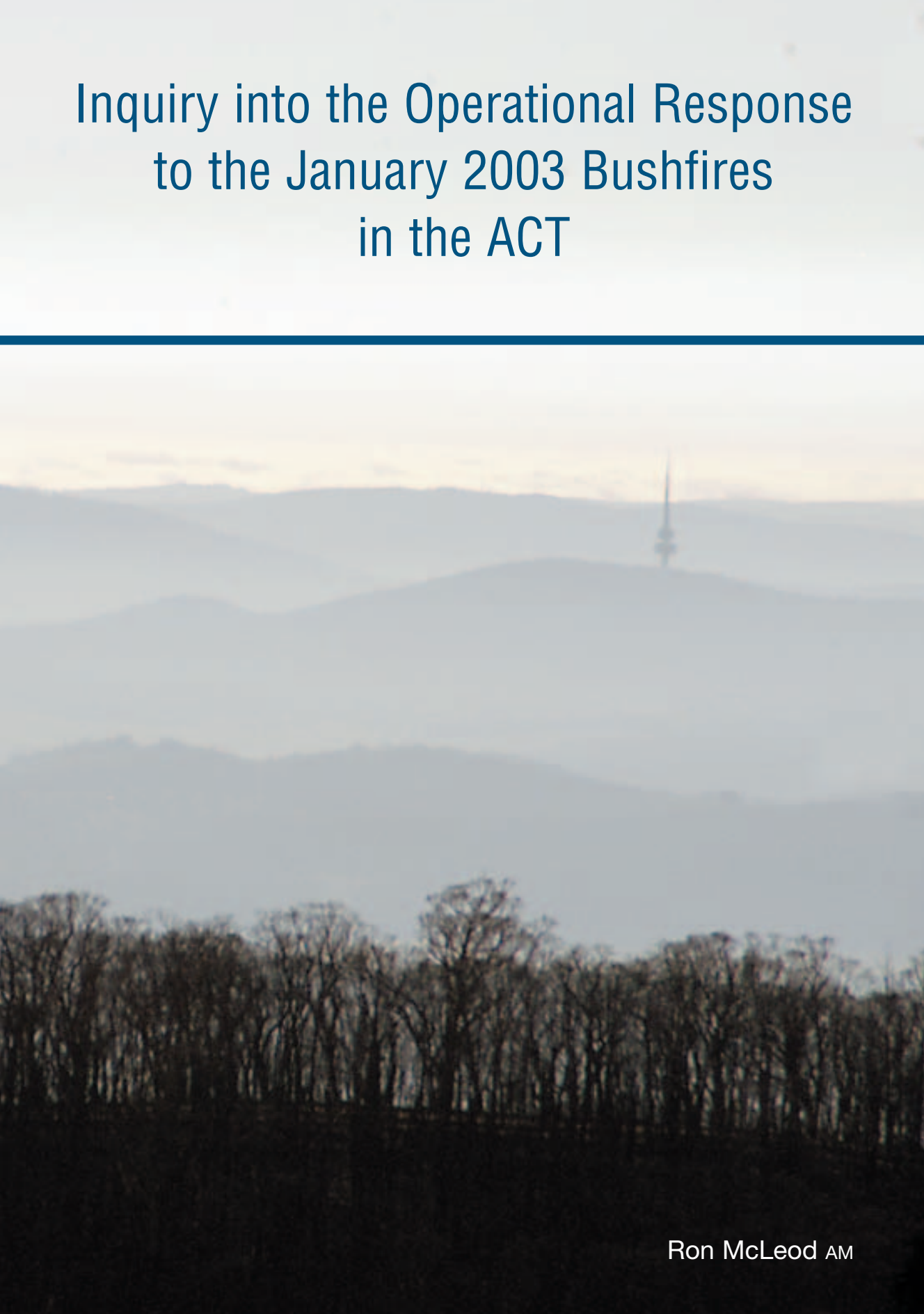
Inquiry into the Operational Response to the January 2003 Bushfires in the ACT



Ron McLeod AM

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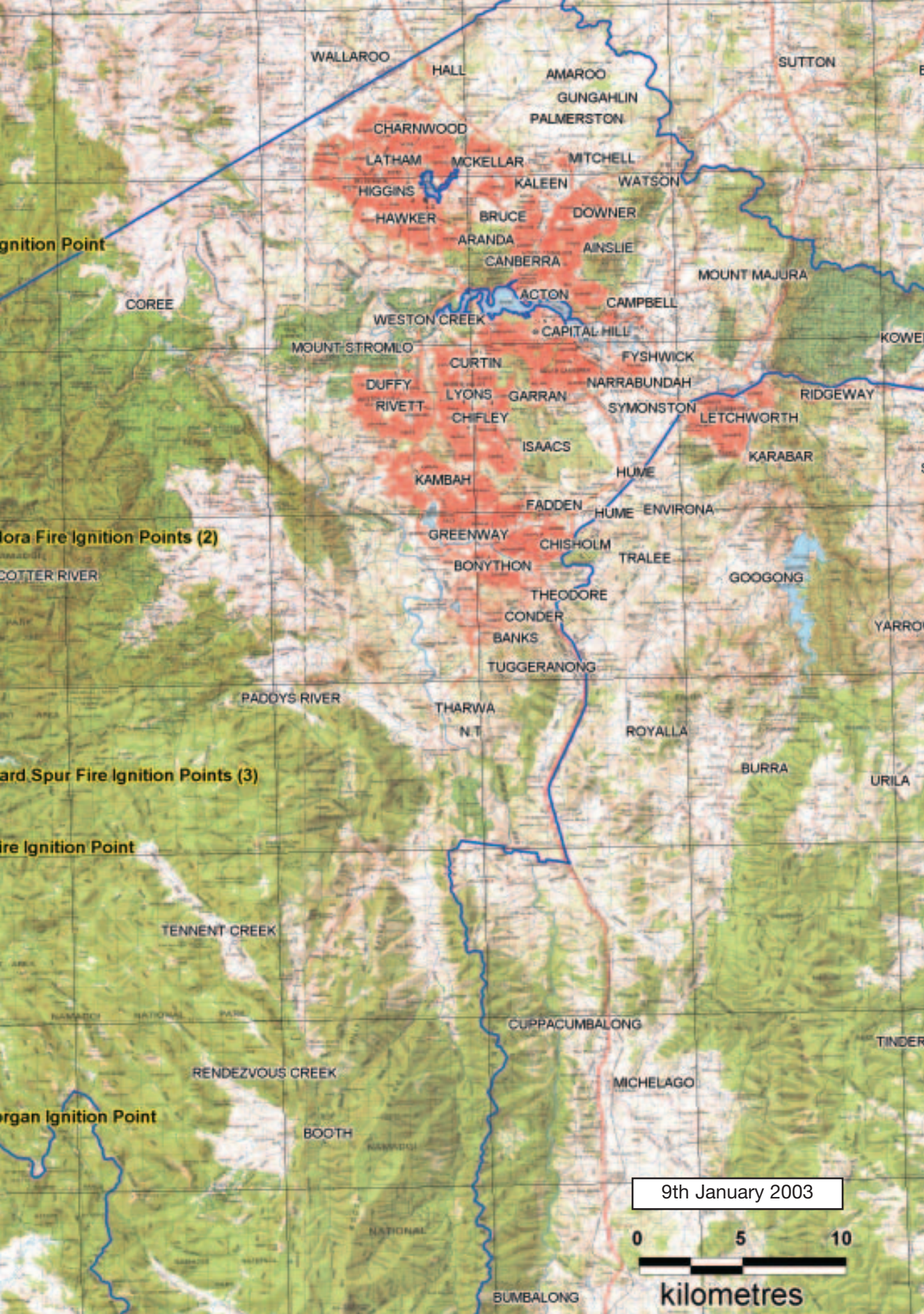
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Inquiry into the Operational Response to the January 2003 Bushfires in the ACT

Ron McLeod AM

1 August 2003

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Maps on the front and rear inside covers of the report were provided courtesy of the NSW Rural Fire Service. The Inquiry has not independently verified the fire related information on the maps.

Mr Jon Stanhope MLA
Chief Minister
ACT Legislative Assembly
GPO Box 1020
CANBERRA ACT 2601

Dear Chief Minister

I have pleasure in passing on the report of the Inquiry I conducted, in response to the terms of reference you provided.

The report deals with all of the matters I considered were important but it was not possible to address every matter raised with me during the Inquiry. My approach was to concentrate on those issues that suggested the possibility that they may be related to systemic weaknesses in the emergency management arrangements in place in the ACT. In this way, my report focuses on matters that may warrant direct attention by the Government, and by the agencies responsible for dealing with the fires and their aftermath.

The submissions and comments I received from members of the community, and from other sources, were extremely helpful to the Inquiry. Especially where they added weight to general themes or trends that emerged, they were particularly useful in identifying possible weaknesses in current practices and approaches.

I have thanked all who assisted, in the body of the report. I received full cooperation from the members of the ACT public service and others holding positions of authority, who without exception approached the Inquiry in a positive and constructive manner.

Around 60 recommendations are made in the report and I commend them to you for consideration.

Thank you for inviting me to undertake this important Inquiry. It was a privilege to be able to play a small part in helping to identify the lessons to be learnt from the event.

Yours sincerely

R N McLeod
1 August 2003

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Summary

On Saturday 18 January 2003 the bushfires, which had been burning in the hills to the west and south-west of Canberra for more than a week, reached the perimeter of the city. The result was widespread damage to rural properties, parks and forests, houses and urban infrastructure, estimated at approximately $300 million. Tragically, four people died.

The ACT Government established this Inquiry to examine and report on the operational response to the bushfires.

The Inquiry is of the view that the fires, started by lightning strikes, might have been contained had they been attacked more aggressively in the 24 or so hours after they broke out. Nevertheless, the dryness of the vegetation after a prolonged, severe drought and the high volume of flammable fuel that had accumulated over time—coupled with weather conditions that were extremely conducive to fire—meant that once the fires gained a hold they proved extremely difficult to contain or suppress. Indeed, the fires on 18 January were accurately described as 'unstoppable'.

Emergency service personnel performed creditably, but they were overwhelmed by the intensity of the fires and the unexpected speed of their advance on 18 January. By mid- to late-afternoon of that day, the situation on the south-western fringe of Canberra was grim. Four lives were lost, many injuries were sustained (including three people with severe burns), more than 500 homes were destroyed and many others were badly damaged, as were important items of infrastructure, including the historic Mount Stromlo observatory. Almost 70 per cent of the ACT's pasture, forests and nature parks were severely damaged.

Any major emergency presents an opportunity to review the authorities' preparedness and how they performed when put to the test. It is not surprising that post-mortems of this kind reveal weaknesses and shortcomings, and that is the case with this Inquiry. By identifying deficiencies or areas needing improvement, important lessons can be learnt for the future.

On the positive side, the Inquiry found no lack of commitment or endeavour on the part of the hundreds of people who, in an official, volunteer or private capacity, contributed to fighting the fires and dealing with their aftermath. In the course of the Inquiry many examples were cited of outstanding service by both emergency workers and private citizens.

A good deal of emergency planning had been undertaken in recent years. A formal, comprehensive ACT Emergency Plan existed. All the government agencies involved in emergency management had been taking their responsibilities under the plan seriously and the Chief Executives of those agencies had been meeting regularly to review, improve and test the Plan. As a consequence, at the highest levels of government there was a good understanding of each agency's roles and of the mechanisms and special arrangements that needed to be activated.

The recovery section of the Plan worked exceedingly well in dealing with the large number of people who needed temporary shelter and assistance as a consequence of the fires.

On the negative side, inadequacies in the physical construction and layout of the Emergency Services Bureau centre in Curtin were a hindrance. The centre was unable to handle efficiently the large amount of data and communications traffic into and out of the centre at the height of the crisis. This affected the operational managers' ability to control and direct their assets on the ground and was a major source of difficulty in dealing with the hundreds of residents who were seeking support or advice.

It is the Inquiry's view that during the course of the fires the poor facilities and operational command arrangements at the Curtin centre appeared to result in an excessive focus on tactical decision making—at the expense, sometimes, of a broader strategic approach. The Government should take urgent steps to upgrade the Bureau's operational command and control facilities, either at Curtin or at a new location, to overcome the weaknesses exposed, and incident command arrangements need to be reviewed.

The organisational and institutional arrangements in the ACT for dealing with emergencies of all kinds—although in operation in their present form for only a relatively short period—worked reasonably well but were not optimal. Emergency service organisations were hampered by the legacies of some past decisions and by deficiencies in facilities at their disposal. The Inquiry makes a number of recommendations with a view to rectifying these shortcomings.

Deficiencies in the provision of information and advice to the community were a major source of criticism put to the Inquiry. In contrast with the steps taken the following weekend—when the community was placed on very high alert—on 18 January, and before, the provision of information about the progress of

the fires, the seriousness of the threat and the preparations the public should be making was seriously inadequate.

At a general level, the Canberra community had not been sufficiently well prepared to understand the nature of the bushfire risk that exists as a consequence of the siting of the city in a bushland setting.

A major program of community education is called for to redress this situation and to help residents understand how they can better protect themselves and their property from bushfire damage in the future. Canberra is—and always will be—prone to occasional serious bushfire attack, and the realisation of this needs to pervade the psyche of the city, its inhabitants, and those who govern it.

One particular aspect of information provision that attracted much adverse comment, both immediately after the fires and during the Inquiry, was the apparent inconsistency in the advice being given by the Police to evacuate at certain stages during 18 January while the Emergency Services Bureau was advising residents to stay with their homes if they felt confident in doing so.

Many instances were also cited of differences between the Police and local residents who wished to stay or return to protect their homes. This difference of view has been debated by police and firefighters around Australia for many years and has generally been resolved by the development of agreed protocols. The problem needs to be dealt with—outside the circumstances of a major crisis, since that is not the time to be dealing with what is essentially a divergence in philosophical and practical approaches.

The level of government funding provided over time to the emergency services in the ACT appears to be generally consistent with that provided elsewhere in Australia. The Inquiry considered, however, that a more detailed examination was necessary to be fully satisfied on this point.

Apart from the city of Canberra and its immediate surrounds, the ACT covers a sizeable geographic area, most of it publicly managed land that, in the main, is economically unproductive. It is difficult, bushfire-prone country, although, as part of the alpine ranges, it has high value as a scenic asset and is an important part of the national estate. The question of whether the full cost of land management associated with this wilderness area, the conservation of the biodiversity it contains and the protection of the national capital from the inherent bushfire risk should, or can, continue to be fully borne by the relatively small ACT population base should be re-examined.

The Inquiry found some equipment and resourcing deficiencies within the ACT's emergency service organisations. Some are already being addressed; others are in need of attention. The Inquiry hopes that these shortcomings can be fully rectified soon.

A primary concern for many ACT residents who participated in the Inquiry was the quantity of fuel that had been allowed to accumulate in the publicly managed parks and forests. Fuel management practices have been a source of much debate and controversy in recent years, and the experience of south-eastern Australia during the summer of 2002–03 has given new life to the debate.

It is the view of the Inquiry that controlled burning is the only broad-scale practicable means of reducing the build-up of fuel loads in the extensive parks and forests in the ACT. The practice provides no guarantee that bushfires will be prevented, but when they do occur their intensity will not be so fierce and they will be more amenable to early containment or extinguishment. Controlled burning requires experience, a suitable mix of personnel and equipment, a properly planned and carefully managed approach, and an understanding of and sensitivity to the potential for damage to natural ecosystems. The Inquiry recommends that, as a part of a revised fuel management regime for the ACT, there be greater emphasis on controlled burning. To support this program there needs to be an adequate level of funding.

A more streamlined approval process is also recommended so that the authorities are able to take better advantage of the small window of opportunity the weather provides each year to undertake safe controlled burning operations.

The Inquiry further recommends that the public land managers in charge of forests and parks in the ACT shoulder more responsibility by being given a more active role in fire mitigation on the lands entrusted to them. One way of achieving this is for the forest and parks brigades to be given primary responsibility for the initial response to bushfires that break out in the lands they manage.

To enhance their capacity to take on this role, it is recommended that they engage some additional seasonal workers to assist with fire-mitigation and suppression tasks over the summer. In this way a larger pool of employed personnel with an understanding and knowledge of the forests and parks would be available to be deployed more quickly and effectively than is the case at the moment. These workers would form the nucleus of a small but highly mobile quick-reaction capability to improve the responsiveness in reacting to bushfires when they have just broken out.

In addition, both the forests and parks authorities should have dedicated access during the bushfire season to a small number of light graders and bulldozers, capable of speedy transport to fire sites. This equipment could be strategically placed to assist rapid deployment.

Greater attention to the maintenance of a network of strategically placed access tracks and fire trails will aid future fire-suppression efforts. During the fires too much effort was expended in reopening and regrading overgrown access tracks, which detracted from the firefighting effort.

Some increase in resourcing to deal with fires more aggressively and more quickly would be money well spent as it is likely in the long run to be the most effective method of suppressing fires in a way that minimises the risks to firefighters and the public and reduces the prospects of damage to the natural environment and to property.

The support of the Commonwealth and New South Wales Governments throughout the crisis was considerable. The Queensland Government also assisted generously. The formal ACT–Commonwealth arrangements for emergency relief, which are well established, worked very smoothly and quickly. The relationship with NSW also worked well, but it is reliant on informal contacts and the general bonding and spirit of cooperation that has grown up over time between adjoining fire fighting organisations. These informal arrangements need to be formalised to provide greater certainty and clarity in the future.

Negotiations between the Emergency Services Bureau and the NSW Rural Fire Service have already begun, with the purpose of developing a memorandum of understanding. The talks should be based on the need to strengthen coordination and planning of the firefighting efforts of both organisations when there is the potential for fires to cross jurisdictional boundaries, so as to facilitate a more unified, strategic approach. An agreement at government-to-government level would also be of value.

The Inquiry also recommends some legislative changes. The ACT *Emergency Management Act 1999* was thoroughly tested and is basically sound, but some changes to provide government with greater flexibility in the manner of its future implementation would be useful. The ACT *Bushfire Act 1936* is well out of date and should be completely revised to reflect current circumstances and needs.

The January 2003 bushfires highlighted the difficulty a small jurisdiction such as the ACT faces in attempting to deal with a crisis of this magnitude, notwithstanding the support that can be drawn from other states and the Commonwealth. It is in the ACT's interest to continue to be fully involved in national reviews and initiatives aimed at strengthening Australia's capacity to respond to very serious emergency events, some of which will occasionally occur within the ACT. Initiatives currently under consideration or review, including the future use of aerial assets, are referred to in the report. A necessary condition of external support is that the state or territory involved has made full use of its own resources.

The Inquiry found in the structure of the ACT's emergency service arrangements inefficiencies that frustrated emergency workers and volunteers in their efforts to make their contribution as effective as possible. Taking into account the ACT's size, the Inquiry considers it would be more efficient if all the ACT emergency services, their assets and their personnel (with their considerable skills), were maintained and managed within a single, larger operational body specifically set up outside the framework of the ACT Public Service. This would bring the various emergency service bodies closer together and would facilitate more flexible use of equipment and personnel, to better meet changing circumstances and a variety of different types of emergencies.

The proposed new body—the ACT Emergency Services Authority—would need its own legislation and its own management and governance arrangements, and it would report directly to the ACT Government through the relevant Minister. A move in this direction would be consistent with the trend elsewhere in Australia towards greater integration between the different emergency service bodies and a stronger 'all hazards' approach to emergency management. The proposed ACT authority would replace the existing Emergency Services Bureau.

Finally, the Inquiry's report emphasises that protecting the ACT community from bushfires is not just the responsibility of the ACT Government. It is a shared responsibility. As elsewhere in Australia, when confronted by a large-scale bushfire emergency of the type experienced in January, ACT citizens need to understand that the authorities cannot guarantee that in all instances emergency workers will immediately be on hand to assist. People can protect their own interests by keeping themselves well informed about bushfire risks and how to deal with the occasional bushfire incursions within the city boundaries, with the assistance and support of the authorities. A much stronger emphasis on working with the community in building together a

much more robust set of prevention and mitigation strategies and practices is strongly recommended, whereas to date the priority has mainly been given to building up the ACT's suppression capacity.

It is inevitable that serious bushfires fires will occur in the ACT from time to time. They are not one-in-100-year events.

The public can also help by supporting greater levels of community protection as a result of government initiatives or community-based self-help schemes. The states that have more experience in dealing with serious bushfires have strong mutual-support programs involving government and the community working closely together in bushfire prevention. The report suggests some similar approaches for the ACT.

In all the Inquiry makes 61 recommendations, and I commend them to government for consideration. A number of the recommendations entail additional expenditure. The aim is to prepare and sustain the ACT authorities and the community for dealing more effectively with bushfire emergencies in the future. In formulating them, I have been mindful of the financial demands continually made of government across a broad range of activities.

The ACT Government is already committed to considerable expenditure directly arising from the restoration of services and the replacement of infrastructure destroyed or damaged in the fires. Expenditure on improving the capacity of emergency service organisations is an investment in the future: if it is undertaken wisely, it will help reduce future expenditure related to bushfire damage—some of which, with prudent planning, is avoidable.

Inquiry team at Bendora with ESB personnel. Photo courtesy ESB.

1 Introduction

(How the Inquiry was conducted and some essential background information)

This report sets out the conclusions reached and the recommendations formulated by the Inquiry into the Operational Response to the January 2003 Bushfires. The Chief Minister of the Australian Capital Territory, Mr Jon Stanhope MLA, established the Inquiry in the wake of fires that caused widespread damage to rural properties, parks and forests, homes and urban infrastructure between 8 and 20 January 2003. Four people died and damage estimated at $300 million resulted.

Essentially, the Inquiry was asked to examine and report on how the official organisations involved in dealing with the fires performed during the crisis, how well prepared they were, and what lessons can be drawn from the experience. (Appendix A sets out the terms of reference.)

Any major disaster presents an opportunity to review the authorities' preparedness and their performance when put to the test. It is not surprising that post-mortems reveal shortcomings, and this Inquiry is no exception. Nevertheless, if areas needing improvement are clearly identified steps can be taken to secure the future.

The work of the Inquiry

The Inquiry began at the beginning of March 2003. The ACT Government initially sought a report by the end of June, a period of only four months. Because of the authorities' significant and continuing operational responsibilities for the recovery process after the fires—and the bushfire season did not officially end until the end of March—it was not until early May that the Inquiry received detailed submissions from all the official bodies involved. I therefore asked the Chief Minister if he would agree to extend the Inquiry's reporting deadline until the end of July 2003. He readily agreed.

This still allowed only a relatively brief period in which to collect material from public and private sources, to test and assess it, and to reach conclusions. As a consequence—and despite my examination of all the issues I considered to come within the terms of reference—this report should be regarded as being strategically focused. Basically, it provides an overview of events: it does not deal in detail with the multitude of matters raised. In this way I consider I have been able to meet the Government's objective of having an independent report available to it relatively quickly. This will help the Government make prompt decisions about a range of important factors that

might have a bearing on the ACT emergency services' capacity to respond to bushfires as soon as late 2003.

All the government agencies and other bodies involved in the Inquiry provided valuable briefings in advance of their written submissions and cooperated fully in meeting my requests for detailed discussions on many of the matters dealt with in the report. I acknowledge the level of cooperation I received, the openness that characterised the discussions, and the willingness of officials to answer frankly the questions I asked of them. I formed the view that there was a genuine desire on the part of the agencies to seek out answers and to acknowledge deficiencies, in the interests of determining how the management of any future emergencies can be improved.

The Inquiry team made a number of inspections and visits in order to become familiar with the course of the fires and the damage they caused and to gain an appreciation of the operational facilities available to fight the fires and manage their aftermath.

Each organisation involved in the firefighting effort has been conducting its own internal appraisal as part of a continuous improvement approach. This assisted with their submission of views to the Inquiry and to the concurrent coronial inquest; it will also be helpful in preparing the ACT Government for its responses to national bushfire-related reviews, particularly the one initiated by the Commonwealth Government. In addition, the ACT Government established several other reviews arising from the bushfires. A full list of these, with a brief description of their purpose, appears at Appendix B.

The Inquiry received more than 130 written submissions from the general public. A number of people also sought to speak personally with the Inquiry; all requests of this kind were agreed to. The submissions, written and oral, were extremely valuable. These first-hand accounts helped the Inquiry gain a clearer understanding of the reaction of members of the public, and of some emergency workers, to the impact of the fires. Many of those who contributed were seriously affected by the fires, and I am indebted to them for their willingness to recount their personal—and often painful—experiences.

The quality of the submissions overall was particularly high. Much praise was directed at the efforts of the firefighters, police and other emergency workers and the volunteers, who fought desperately to save lives and property, often in difficult circumstances. The submissions did, however, also contain many criticisms of what were believed to be deficiencies on the part of the authorities.

A number of common themes that emerged from the public submissions helped the Inquiry identify areas where there may have been systemic failure.

I thank all who expressed their views to the Inquiry. I hope that, through consideration of this report and its recommendations, the Government will be assisted by the Inquiry as well as by the contributions of a broad cross-section of citizens who wanted to have their views heard and taken into account. Chapter 3 provides an analysis of the various matters raised in the public submissions.

During the course of the Inquiry, the ACT Budget for 2003–04 was introduced in the Legislative Assembly. It was pleasing to note that provision had been made for a number of improvements flowing from the Government's own preliminary analysis of the impact of the fires and some of the shortcomings they exposed. I acknowledge these initiatives in this report. Where the Government has already committed itself to a course of improvement, I do not dwell on the matter: rather, my focus is on those areas where I believe decisions remain to be taken.

Shortly after the Inquiry began there was debate in the Legislative Assembly about protection from the threat of legal action for people who might want to express critical views to the Inquiry. This difficulty was resolved by the passage of the *Bushfire Inquiry (Protection of Statements) Act 2003*, which, in summary, afforded protection against defamation action to people making statements to the Inquiry or providing documents or information to it. I was pleased to see the passage of this legislation: it offered encouragement to people who might otherwise have been reluctant to come forward with critical comments.

The terms of reference require that the Inquiry 'make reference to arrangements that exist in other jurisdictions for dealing with emergencies'. The Inquiry consulted with all states and visited a range of fire and parks authorities in NSW, Victoria and Tasmania. It also visited the Australasian Fire Authorities Council, which was very helpful. Appendix C lists the outside bodies consulted.

The CSIRO Bushfire Behaviour and Management Group was also consulted. Mr Phil Cheney and Mr Jim Gould are thanked for their assistance.

The Inquiry's preliminary work, the public submissions and the external consultations gave rise to a number of important questions:

- Did the fires constitute an exceptional event that could not have been planned for or were they avoidable?
- Why were the fires allowed to reach the city of Canberra?
- Why were ACT citizens not better prepared and better informed before and during the bushfires?
- Why did the ACT fail to seek more external assistance at an earlier stage?
- Why did government land managers not act more positively to reduce the accumulation of fuel, which added to the intensity of the bushfires?
- Did the emergency service organisations perform as well as they could have?
- Are the existing operational, management and financial arrangements for dealing with emergencies in the ACT as good as they could be?

Much of the Inquiry's subsequent work—and indeed the terms of reference—demanded answers to these questions. A number of other related questions can also be posed, but those just listed are the essential ones.

I hope that the ACT community, and those who govern it, will heed the lessons of these fires. Learning by personal experience can be hard, but lessons learnt in this way are often more enduring. A number of positives are already apparent as a consequence of the fires, and they are touched on in this report. I trust that the lessons referred to in the report will be embraced and followed through.

I am indebted to the small group provided to assist me in my work. Mr Stuart Ellis AM, formerly Chief Executive Officer of the Country Fire Service of South Australia, gave outstanding support. Ms Leanne Power and Ms Bronwyn Turner made excellent contributions as Executive Officer and Project Officer respectively. Although I accept full responsibility for the report, it was a team effort and I thank each team member for their professionalism and support throughout the Inquiry.

Before proceeding with an analysis of the fires, some background knowledge is essential. A general understanding of the government bodies that exist to deal with emergencies of this kind and how they are organised is needed. The weather plays an important role in most bushfire events: a brief explanation of the significance of the weather and how it affects bushfires follows. Some appreciation of bushfire behaviour is also helpful. Finally, a brief history of major bushfires in the ACT is provided.

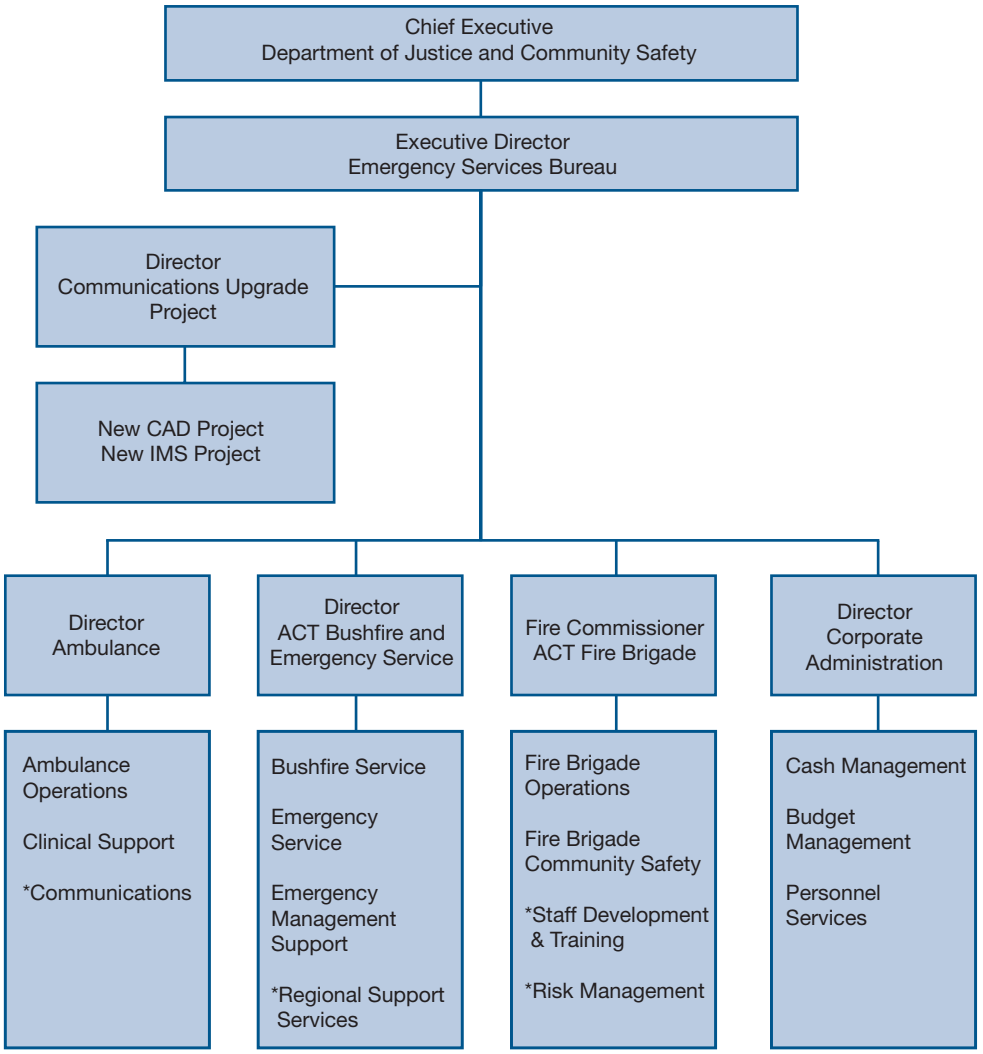
The emergency organisations

The Emergency Services Bureau is the ACT government agency responsible for emergency management and other support activities. The Bureau and its four operational services—the ACT Fire Brigade, the ACT Bushfire Service and Emergency Service, and the ACT Ambulance Service—exist to provide response to fire and other emergencies and to minimise the effects of fire, both within the urban area of Canberra and in the rural and bushland areas of the Territory. They also assist with road accidents, medical and other emergencies, and disasters of all kinds. These bodies together with ACT Policing, are the key agencies responsible for responding to emergencies and community crises in the ACT.

ESB is established within the Department of Justice and Community Safety and the current Minister for Police and Emergency Services is Mr Bill Wood MLA. The background and nature of the current institutional arrangements are described in more detail in Chapter 6. Suffice it to say here that responsibility for dealing with bushfires outside the urban boundary of Canberra rests with the ACT Bushfire Service, while fires within the urban area of Canberra are the primary responsibility of the ACT Fire Brigade. There is some crossover in the responsibilities of the two firefighting organisations, but in general the distinction holds true.

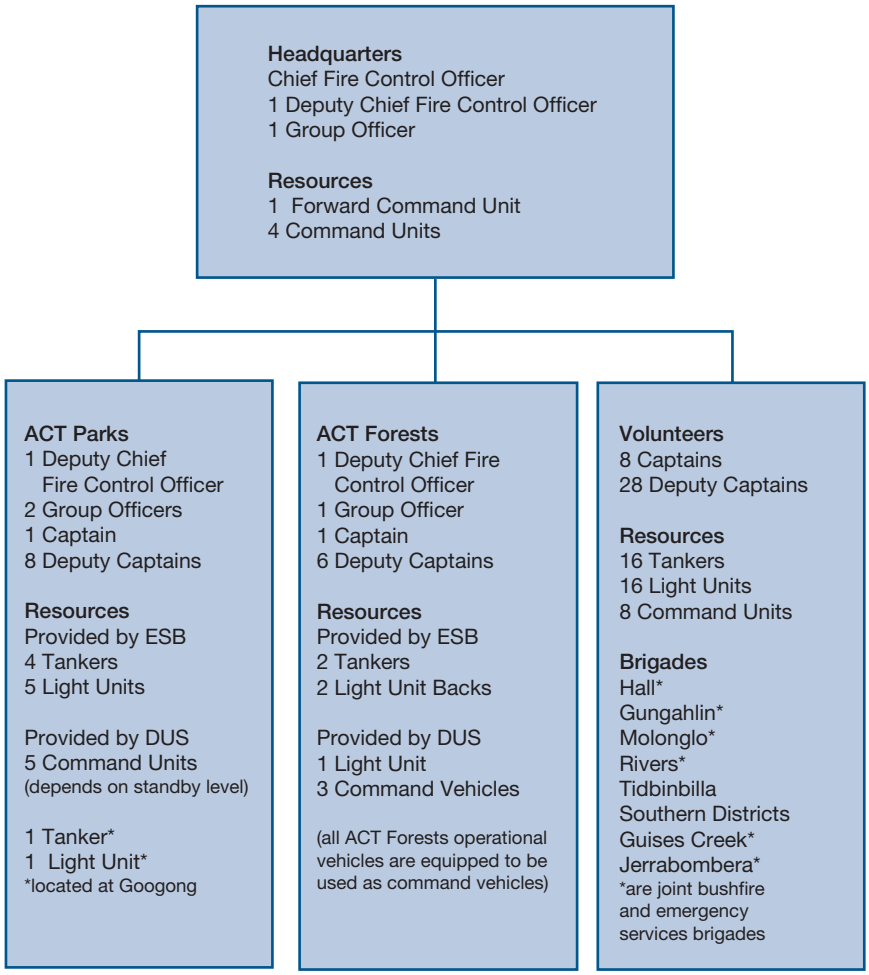
ESB provides administrative support to the four separate operational services and has an important role in planning and coordinating the provision of all types of emergency services throughout the ACT.

Figure 1
Emergency Services Bureau organisational structure



* Denotes Bureau portfolio function.

Figure 2
ACT Bushfire Service



The ACT Bushfire and Emergency Services are predominantly made up of volunteers who receive no payment for their services. There is, however, a small number of full-time, salaried personnel who perform headquarters functions. The forests and parks areas of the Department of Urban Services support their own fire brigades, consisting of departmental rangers, foresters[1], and so on, which form part of the total ACT complement of 10 bushfire brigades and one headquarters brigade, under the overall control of the bushfire service.

About 450 active bushfire volunteers and about 120 departmental staff in the forests and parks brigades make up the firefighting personnel who deal with the vast majority of bushfires in the Territory. As is explained later, in certain specified situations the urban fire brigade units complement these personnel.

The Emergency Services Bureau's submission to the Inquiry[2] outlines in more detail the history of the organisation and describes the resources available to it, the manner in which it responds to bushfires, and the scientific and technological support it draws on in undertaking risk assessments and determining strategies to counter bushfires.

The weather

The following extract from the Bureau of Meteorology's submission to the Inquiry provides a good overview of the weather conditions leading up to January 2003.

> The drought prevailing at the time of the recent fires was one of the most severe in the nation's recorded history. Large areas of the country were experiencing serious or severe rainfall deficiencies. Additionally, atmospheric humidity and cloudiness were below normal and daytime temperatures were at record levels. The combination of factors led to an early advanced curing[3] of fuels across most of Eastern Australia. Although many of these factors were also present during previous major bushfire events, the high temperatures in the lead up to the 2002/03 fire season appear to be unprecedented. The likelihood of conditions conducive to a bad fire season had been identified in Seasonal Outlooks provided to fire agencies and other users as early as mid-July 2002.[4]

The Bureau of Meteorology has two automatic weather stations in the ACT—at Canberra Airport and at Isabella Drive in Tuggeranong. There are no stations in the Brindabella Range, although observations are sent from Tidbinbilla daily and from Bendora and Corin Dams when non–Bureau of Meteorology staff are

available. In addition, a weather watch radar, recently installed, operates from Captains Flat. All ratings and measures provided in this report are a result of readings and advice provided by the Bureau of Meteorology.

The Canberra office of the Bureau of Meteorology provides the ACT Bushfire Service with fire weather forecasts twice daily throughout the fire season, which is usually from 1 November to 28 February. As part of those forecasts, a fire danger rating is provided, giving a broad indication of the likely difficulty of suppressing fires. For forests, the rating is scaled from low (less than 5) to extreme (50 or greater); the ACT Bushfire Service always declares a total fire ban when the scale is above 50 and at times does so when the rating is lower if the Chief Fire Control Officer deems this prudent for other reasons.

The Bureau of Meteorology also issues fire weather warnings to the public, as well as emergency authorities; these are intended to warn of probable extreme fire weather conditions. ESB is responsible for imposing total fire bans, although this information is often also provided in the Bureau of Meteorology's fire weather warnings. The Bureau of Meteorology also supplies special fire weather forecasts at the request of ESB, to assist in the safe and efficient use of firefighting resources.

The Bureau of Meteorology identified the three months from October to December 2002 as 'a very critical'[5] period leading up to the January 2003 fire event. Rainfall during the period was less than one-third—40.2 millimetres compared with a median of 150.4 millimetres—and was the third-lowest total on record. A 'very large positive anomaly'[6] was also identified for the average maximum temperatures, with November 2002 being 5 degrees above average. The Keetch–Byram Drought Index[7], measuring soil dryness, indicated a 'rate of increase far larger than would be typically expected'.[8] These factors clearly illustrated by December 2002 the severity of the summer, the extreme dryness of the soil and vegetation, and the consequent increased risk of extreme wildfire behaviour, regardless of daily weather conditions. The severe drought conditions experienced in south-eastern Australia were connected with the El Nino climate cycle: some referred to the drought as a one-in-100-year event.

A brief explanation of fire behaviour

> 'Australia was meant to burn, will burn and should burn. But it should not have intense destructive wildfires which bring tragedy.'
>
> — Joan Webster[9]

Although the term 'bushfire' is commonly used in Australia to describe any fire in the bush, or in rural areas generally, fire authorities also use the term 'wildfire' to describe fires totally out of control: the fire has gone wild. To the casual observer, major bushfires might appear fickle and volatile in nature but, as ESB submitted, 'There is some degree of predictability about possible bushfire behaviour'.[10] The predictability comes from an understanding of the relationship between fuel, oxygen and heat and the ability to measure these three elements and predict their response to the environment when fire has begun. This allows experts in fire behaviour to understand the reactions occurring and estimate the speed at which changes will occur.

The contribution of fuel is discussed further in Chapter 4, under 'Fuel management'. Put very simply, the greater the fuel load, the more intense the fire, the greater the heat (energy) generated and the greater the potential for more intense fires and subsequent extreme fire behaviour. Such fires generate unique microclimates, feeding on oxygen and expelling hot gases that rise in large events, potentially forming 'convection clouds'.[11] The wind's velocity and direction around fires of this kind can differ significantly from that of the prevailing winds and, therefore, what is recorded at the fixed weather stations.

Topography also affects fire behaviour. Fires burn much faster uphill as gases and flames preheat the fuel further up the slope. This preheating, together with the potential for flames to directly contact the fuel if the flame angle allows, leads to increased fire spread. Conversely, downhill slopes generally reduce the rate of fire spread. As a general rule, a 10-degree upslope doubles the rate of spread in the direction of the prevailing wind. Fires burning against the wind or downhill may be considered as if burning without wind or slope.[12] The ACT features a range of bushfire challenges resulting from its terrain, which includes undulating grassland and bush, the urban–rural interface, and mountain country. Steep terrain also poses access problems for vehicles and firefighters.

ACT fire history

South-eastern Australia has been a regular victim of bushfire. Throughout the preceding century fire events have regularly affected South Australia, Victoria, Tasmania and NSW.

Fires have affected Canberra, invariably on the western side, many times in the last 100 years, mostly during summer (January–February). Major fires occurred in 1903, 1926, 1927 and 1939, three times in 1952, and in 2001 and 2003. The 1927 fire occurred in spring, but all the others were in summer. Most of the fires were started by lightning strikes during dry seasons that followed a warm, dry winter and spring and most were accompanied by very strong winds. On this basis alone, it can be considered that the 2003 fires were not a one-in-100-year event. Details of some of the major and inner city fires that have occurred in the ACT follow.[13]

1939

The summer of 1938–39 was the driest since 1918. The Black Friday bushfires, in January, in southern NSW and the ACT resulted in the deaths of six people. Fires also devastated the Victorian town of Noojee, where 71 lives were lost. A thousand homes were destroyed.

In heatwave conditions a fire broke out across the border in the area behind Uriarra Station; it reached the ACT on 13 January, in three tongues around Mount Franklin, Mount Coree and Horseshoe Bend. By early 14 January winds gusting up to 70 kilometres an hour started numerous spot fires, and by afternoon fire had created a front of 72 kilometres along the Murrumbidgee River and had crossed it in several places. The Mount Franklin fire burnt right across the Territory, with serious outbreaks at Tidbinbilla, Cuppacumbalong, Booroomba and Lanyon. The fires were put out by a cool, moist change that moved across the region on 15 January. Although no lives were lost and stock losses were relatively small, there was considerable loss of property: 60 750 hectares of timbered and grazing land (including 1100 hectares of pine plantation) were destroyed.

Mount Stromlo, 1952

Fire followed a remarkably similar path to the 2003 fire on 25 January 1952. Started by a lightning strike in scrub near Walker's Hill, it moved quickly towards Mount Stromlo, fuelled by thick undergrowth and fallen pine needles and driven by strong westerly winds. The fire was brought under control in Kambah after

having destroyed several observatory buildings and equipment at Mount Stromlo, 310 hectares of mature pines, and burning 2385 hectares of grassland. Two people died. Until the 2003 fires this event was the last time houses in the vicinity of Canberra were destroyed by bushfire.

Subsequently, between 7 February and 4 March, over 6000 hectares were burnt in the Mountain Creek area, again as a consequence of lightning strikes.

Gudgenby, 1983

The 1982–83 fire season was among the worst in the ACT's history. There was a severe drought, and the winter of 1982 had been one of the driest recorded. Firefighters attended fires as early as August and the fire danger season was declared two months early, on 1 September. Forest fuels were extremely flammable and there was a higher than usual number of forest fires. On 9 January fires in the Gudgenby area burnt out 36 000 hectares of forest and grazing land.

Mount Majura, 1985

After a relatively wet spring and summer, which resulted in prolific growth of vegetation, particularly grass, the ACT experienced one of its driest summers on record. This meant that the fire season was unusual, with strong potential for both grass and forest fire.

There were several big fires during the season, but the most significant were those that occurred on 2–4 March: 6000 hectares were burnt at Mount Majura and 5500 at Tharwa. These fires started under extreme weather conditions and burnt out of control into NSW, causing several million dollars' worth of damage to property. A total of 28 000 hectares of pasture and bushland (10 000 hectares in the ACT) were burnt and 7000 head of stock were lost.

Black Mountain and Pierces Creek, 1991

A fire started on the north-eastern side of Black Mountain. The fire burnt in a north-easterly direction, eventually crossing Barry Drive and threatening residential property along Dryandra Street. Minor damage was caused to front yard properties and the Koomarri School. An area of 135 hectares was burnt.

A fire started in the Pierces Creek pine plantation in the early afternoon on 21 April. Under worsening weather conditions the fire burnt in an easterly direction, eventually reaching the crest of the Bullen Range. Spot fires ignited

grasslands east of the Murrumbidgee River. The total area burnt was about 870 hectares, which included about 457 hectares of pine plantation.

Curtin, 1994

A fire started at about 3.30 pm on 5 January on the eastern side of the Tuggeranong Parkway near the junction of the Cotter Road. It burnt in a south-easterly direction across the Illoura Community Horse Holding Paddocks to eventually reach Munro Street, Munro Place and Bavin Street, threatening residential properties and an ActewAGL substation. Gardens, backyard fences and sheds and pergolas were affected but no houses were destroyed. About 80 hectares were burnt in total.

In addition, a fire on Mount Taylor came close to jumping Sulwood Drive and threatened houses before it was contained.

December 2001

On Christmas Eve 2001 a series of fires threatened central Canberra. Fire outbreaks occurred at Huntly, Stromlo, Bruce Ridge, Red Hill, Oaks Estate and Wanniassa Hills. It is thought that an arsonist lit fires on Uriarra Road and Coppins Crossing Road during the early afternoon, and they burnt rapidly through areas of grassland. The Uriarra Road fire was halted just short of the Stromlo pine forest. The Coppins Crossing fire raced across grazing land down to the Molonglo River and very soon threatened parts of Duffy, Holder, Weston, Yarralumla and Curtin. ESB issued the Standard Emergency Warning Signal to the community for the first time and advised residents of the affected suburbs to take steps to ensure their own safety. The fire crossed the Tuggeranong Parkway and burnt to the shore of Lake Burley Griffin and the edge of Curtin. Millions of dollars' worth of plantation pines were destroyed and many hectares were burnt out.

On Christmas Day new fires flared, threatening major thoroughfares and suburbs and burning to the lawns of the Australian Mint. Large areas of Stromlo forest were lost: in the event, however, this proved a valuable firebreak for the January 2003 fires and arguably protected Black Mountain and central Canberra.

Notes

1 ACT Forests provides staff for one brigade. Environment ACT, City Scape, and Canberra Urban Parks and Places provide staff for the other departmental brigade. ACT Roads and Land Development Agency all contribute to the overall effort.

2 The ESB submission, and those of other ACT government agencies, is online at www.cmd.act.gov.au.

3 Curing is a non-meteorological measure of the volume of dead material in grassland. It is provided by fire authorities to the Bureau of Meteorology to assist in assessing fire danger indices.

4 Commonwealth Bureau of Meteorology submission, p. 4.

5 ibid., p. 15.

6 ibid., p. 16.

7 A numerical value reflecting the dryness of soils, deep forest litter, logs and living vegetation, and expressed as a scale from 0 to 200.

8 Commonwealth Bureau of Meteorology submission, p. 17.

9 Webster, J 2000, *The Complete Bushfire Safety Book*, 3rd edn, Random House, Sydney, p. 1.

10 ESB submission, p. 51.

11 A convection column is a rising column of smoke, ash, burning embers and other matter generated by a fire.

12 This is widely accepted but some would quibble in quantitative terms.

13 www.esb.act.gov.au/firebreak, as sourced from various ACT Bush Fire Council annual reports.

The cumulous cloud above the fire ground developed to a height of 14 000 metres before collapsing once the air cooled. Photo courtesy ESB.

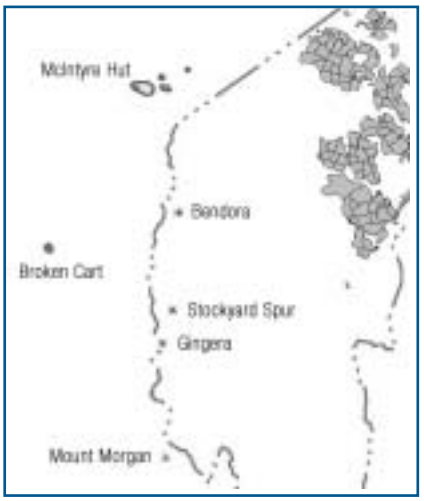
2 The January 2003 fires and how they were dealt with

(A chronology of the fires' progress and an appraisal of how the authorities tackled them and informed the community)

The synopsis provided in this chapter focuses on the operational response to the January 2003 fires, in accordance with the Inquiry's terms of reference. It does not attempt in any way to be a complete record, to include all the matters raised in submissions, or to deal with all the operational issues relevant to the fire event. Its purpose is to provide context for the subsequent discussion in the report. Omitting matters and concerns raised with the Inquiry is not a reflection of them being of lesser importance; rather, it reflects the reality that the Inquiry could examine only what it considered to be the key issues in the available time. Further, information gathering, from a variety of sources that were not necessarily available to this Inquiry, is continuing, as is the scientific analysis of the fires.

When the fires ignited on 8 January 2003 it fell to the ACT Bushfire Service to respond. The Service was responsible for managing and directing the suppression effort throughout the event. The Emergency Services Bureau submission to the Inquiry set out in detail the ACT response to the fires on a daily basis. The Inquiry used this information, submissions from other agencies and individuals, and the media releases that were issued from Day 3 onwards to produce the synopsis of events that follows, focusing on key aspects of the operational response. Three distinct phases in the overall response are evident:

- Phase One: 8 to 16 January—ignition and the fires' development during the next eight days
- Phase Two: 17 and 18 January—when the separate fires joined up and reached Canberra
- Phase Three: 19 to 30 January—the fires' subsequent progression until their extinguishment.



Phase One: 8 to 16 January

Day 1: Wednesday 8 January[1]

Responding to forecasts provided by the Bureau of Meteorology, the ACT Bushfire Service declared a total fire ban for both Tuesday 7 January and Wednesday 8 January, even though it was predicted that the fire weather on 8 January would be less severe. The forecast forest fire danger index was 45 (extreme is 50+).

Observers were on duty at all four fire towers in the ACT. At about 3.30 pm on 8 January an electrical storm passed over the region with a 'decaying shower'[2], leading to a series of lightning strikes in a north–south line along the Brindabellas.[3] The fires that broke out in the ACT and adjoining parts of NSW; running north to south, were referred to as the McIntyre Hut, Bendora, Stockyard Spur, Gingera and Mount Morgan fires. The McIntyre Hut and Mount Morgan fires were in NSW. Other nearby fires in NSW were reported at Yarrangobilly and Broken Cart.

The fires were first seen by the observers in the fire towers, and they reported them to ACT Bushfire Service headquarters at ESB. The NSW Rural Fire Service and the NSW National Parks and Wildlife Service at Queanbeyan were also advised. The ACT Bushfire Service dispatched its contracted light helicopter, *Firebird 7*, which was on standby at the Australian Federal Police facility at Weston, together with a trained air observer (who was a Group Officer in the ACT Bushfire Service) to carry out a reconnaissance.

At the same time, the ACT Bushfire Service dispatched two response groups that had been placed on standby during the day because of the prevailing conditions. The resources dispatched were intended to be the set responses for a high-risk day—two tankers and three light units to each of the two fires initially identified in the ACT, those at Bendora and Stockyard Spur. This was normal procedure, as laid down in the ACT standard operating procedures. A brigade Captain was incident controller for the group destined for the Bendora fire, and a Deputy Captain was incident controller for the group destined for the Stockyard Spur fire.

The ACT response consisted of a combination of ACT Parks and ACT Forests personnel and some volunteer firefighters, amounting to three light units and two tankers (a total of 12 personnel) for the Bendora fire and two light units and two tankers (10 personnel) for the Stockyard Spur fire. They made their way to the Bendora and Stockyard Spur fires respectively, taking about 90 minutes to arrive in the area of the fires. There was no response to the Gingera fire on 8 January, since at the time it was thought to be in NSW. Submissions to the Inquiry claimed that, on their own initiative, some local volunteer and Department of Urban Services fire crews were at their stations expecting advice about deployment for an initial attack on the fires—advice that never came.

Both response groups had reached the fires by about 6 pm. Crews approached the Stockyard Spur fire later than the Bendora fire because they needed to travel further south along the Mount Franklin Road, the common primary access route. Each crew set about determining the exact location, behaviour and size of the fires. The Bendora fire was close to an access track, and ESB stated in its written submission that crews 'waited on the fire trail for the fire to come to them'[4], although it was later confirmed by ESB that more active firefighting occurred.

The incident controller conducted a reconnaissance around the perimeter of the Bendora fire. There was considerable dense understorey, and the fire was burning up an east-facing slope with rocky outcrops and stands of mountain gum. There was relatively easy proximate road access, but access from the road to the fire front was up a 2- to 3-metre steep embankment and then 50–100 metres upslope. There was another track fairly close by above the fire, but it was overgrown and was not located until the next day.

After reconnaissance, the incident controller provided the following situation report to ESB concerning the Bendora fire:

> Okay this fire's doing about 100 metres from the Warks Road uphill. It's drawing into itself, its not moving very fast ... we can access the eastern side of it from Warks Road with tankers and light units but we will need rake hoe lines around the top section and water bombing on the top section as well the fuel loads fairly heavy from wet sclerophyll forest.[5]

After further discussion and consideration between the incident controller and the Duty Coordinator at ESB headquarters, the radio transcript records that the Duty Coordinator indicated via the communications centre staff:

> Thanks for your attendance at this incident. You may return to your area and crews will be returning in the morning.

Discussions the Inquiry had with the incident controller revealed that concerns about:

- unfamiliar terrain (difficulty keeping footing when moving in the dark over rocky outcrops and fallen logs to lay out fire hoses)
- fallen trees and debris
- potential fatigue of the crew (who had been working since that morning) when considering the demanding terrain
- doubt about adequate rationing carried by the firefighters on the scene and lack of nearby medical assistance

also influenced thoughts about the safety of overnight firefighting. These safety matters were balanced by the incident controller with the assessment that remote area firefighting teams[6] and water-bombing aircraft, which could be brought in early the next day, would be required.

The ESB submission to the Inquiry reported that the Bendora incident controller '... felt that due to the rugged terrain and access issues, together with the threat of falling trees and tree branches, keeping crews at the fire overnight posed significant safety issues'.[7]

From the various reports that headquarters received from observers in helicopters and on the ground, it was estimated that the fire was of the order of 500 square metres (approximately 20 x 25 metres). It was on this basis that resourcing for the following day was determined.

At the Stockyard Spur fire, the incident controller halted vehicles at the Mount Ginini gate and proceeded forward with one light unit. The fire track running down Stockyard Spur could not be identified because of the growth on the track. This meant moving on foot to the fire, and the incident controller talked with the observer in the helicopter, who advised that the walk in was likely to take 'up to an hour'. The incident controller discussed with the Duty Coordinator the options of walking in or returning from the fire and was advised that the crew should return to Canberra and that fresh crews would be deployed first thing in the morning. Safety concerns did not appear to influence the decision to abandon the idea of walking to the site of the fire.

The ESB submission referred to the incident controller considering that:

> There was little to be gained by undertaking direct firefighting by ground crews on this fire and that, with the access difficulties arising from the fire's remote location, there was no benefit in keeping the crews on this fire overnight.[8]

The ACT Bushfire Service subsequently informed the Inquiry that safety concerns were also expressed at the Stockyard Spur fire. No consideration was given to both fire crews combining at the Bendora fire or, alternatively, tackling the Mount Gingera fire, which was a relatively short distance further on and was far more accessible, despite being thought to be just across the border in NSW. Instead, the crews for both fires operated independently and returned to Canberra at about 10 pm.

The Inquiry spoke to some individuals who had travelled to the fires on that first evening but did not conduct any firefighting operations. One person who had gone to the Bendora fire appeared unable to explain this approach, other than to say that they were directed off the mountain without having initiated any firefighting activity. Another individual, at the Stockyard Spur fire, had walked some distance towards the fire but cited safety concerns as the reason for not reaching the fire itself. Regardless of whether or not their efforts would have contained the fire, the fact that they did not attempt to fight the fire remained a concern to both these people.

The Bendora incident controller advised the Inquiry that upon arrival at the fire some of the firefighters began a direct attack on the fire—they laid out fire hoses and sprayed water on the fire. At the same time the incident controller and one other person undertook reconnaissance. A helicopter was dropping water on the fire. Other firefighters located a water point and marked an access route to the water. After returning from reconnaissance the incident controller instructed the personnel who had marked the water access route to spray water on the fire. Those people laid out their hoses. However, the advice to leave the fire ground was issued before they began spraying water on the fire.

Before the response groups had arrived at the fires the Service Management Team[9] at ESB had met and decided to deploy the Snowy Hydro Southcare helicopter[10] as a water bomber that evening. The ACT Bushfire Service advised the Inquiry that the Snowy Hydro Southcare helicopter was used as a water bomber for almost three-and-a-half hours[11], initially on the Stockyard Spur fire and later on the Bendora fire; it was using a 'bambi bucket', delivering up to 1100 litres of water at each drop. *Firebird 7*[12] was also involved in water-bombing

operations on 8 January at Stockyard Spur. When used as a water bomber, it carried a 450-litre bambi bucket, about 40 per cent of the capacity carried by the Snowy Hydro Southcare helicopter. *Firebird 7* also directed crews towards the fires and reported on fire behaviour and progress.

Water-bombing operations for both aircraft involved filling from the Bendora and Corin Dams and then, because of the reduced lift capacity of the aircraft in the hot conditions, taking an indirect flight path back to the fires. The water-bombing operations were largely independent of the limited ground operations, although there was ground-to-air communication. No air attack supervision was considered necessary and helicopter operations ceased at sunset.

ACT Bushfire Service management advised the Inquiry that it was initially confident the fires would be extinguished—either by suppression or self-extinguishment—in the first 48 hours and that this confidence was based on experience. They acknowledged the severe climatic conditions, but their initial view was that the fires could nevertheless be swiftly put out. This view was confirmed by a comment in the ESB submission—that one of the fires, the Gingera fire, 'was not posing any immediate risk'[13] on the evening of 8 January 2003.

The Inquiry was told that additional demands were being made of the ACT Bushfire Service on that day. An unrelated fire incident on Paddys River Road required resources to be deployed, while other personnel were also required to be on standby in Canberra.[14] During the evening of 8 January the Service Management Team organised firefighting crews for the following day, based on advice from the incident controller.

For the McIntyre Hut fire in NSW the initial response was one light unit from the NSW Parks and Wildlife Service, one NSW Rural Fire Service tanker from a local brigade at the hamlet of Fairlight, and a light unit sent from the ACT Forests brigade. After ignition, a westerly wind had rapidly pushed the fire up a slope: its size was estimated at 200 hectares when viewed from an aircraft. Other fires were seen nearby and, while they were initially thought to be spot fires, it was later decided they were most probably the result of other lightning strikes. It was assessed that direct attack was not viable and that indirect attack would be more productive because of the rapid initial spread of the fire, the steep terrain, and the amount of time involved in deploying resources to the site.[15]

On the evening of 8 January the ACT Chief Fire Control Officer and a Deputy Chief Fire Control Officer and his deputy attended a planning meeting at Queanbeyan with NSW Rural Fire Service and NSW Parks and Wildlife Service

staff to review the fire situation and coordinate resource allocation. The McIntyre Hut fire was initially managed out of the NSW Parks and Wildlife depot at Queanbeyan with a Parks officer in control.

The NSW Rural Fire Service highlighted to the Inquiry that the meeting was called in recognition of the potential threat to Canberra; the Chief Fire Control Officer also indicated that his attendance reflected the immediate concerns about ACT forests and subsequently Canberra. It was advised that the NSW Rural Fire Service had put out a fire at Captains Flat that afternoon. It was agreed that a 'Section 44 Declaration'[16] would be sought for the McIntyre Hut fire, identifying it as a local bushfire emergency and allowing for the seeking of resources from elsewhere in NSW. The ACT agreed to send a number of tankers and crews to the fire, particularly since it posed an immediate threat to ACT pine forests adjacent to the Territory border east of the fire.

Notes

1 The daily schematic maps were provided by ESB.

2 Bureau of Meteorology submission, p. 17.

3 The Inquiry was unable to confirm beyond doubt that the fires resulted from lightning strikes. However, for the purposes of the Inquiry it is assumed that the large number of fires that were ignited in the alpine country of NSW, the ACT and Victoria on the afternoon of 8 January resulted from lightning strikes as a dry storm moved through the region. The coronial inquiry in the ACT will consider further the actual cause of the fires.

4 ESB submission, p. 98.

5 Radio transcript.

6 Any fire that requires people to be self-sufficient, and away from their vehicles for their full shift, is classed as a remote area fire.

7 ESB submission, p. 98

8 ibid.

9 The Service Management Team is an ACT Bushfire Service-specific arrangement that coordinates and supports large incidents from the Emergency Operations Centre at ESB headquarters.

10 The Snowy Hydro Southcare helicopter provides medical retrieval services in the ACT and southern NSW.

11 ESB submission, p. 98.

12 *Firebird 7* is a contracted light observation helicopter supporting the ACT Bushfire Service over the summer months.

13 ESB submission, p. 99.

14 The logic of holding crews back from a fire in progress in order to respond to threats that were yet to appear does, however, seem questionable.

15 NSW Rural Fire Service submission, p. 5.

16 A declaration under the *NSW Rural Fire Act 1997*. A Section 44 Declaration took effect from 1 pm on 9 January.

Day 2: Thursday 9 January

In its submission to the Inquiry ESB described the weather as 'relatively benign for some time'[1] from Thursday 9 January. The wind, at 10–15 kilometres an hour, was from the west to south-west until an east to south-easterly change arrived in the late afternoon. The forest fire danger index was 18.

An aerial reconnaissance was conducted at first light on 9 January. There had been some spread in the fires overnight, and the stated objectives for the day were to 'keep [the fires] contained to their smallest possible size using direct attack'[2] and to 'keep the fire away from the Mt Franklin Road'[3] because it provided vital access to the Stockyard Spur and Gingera fires and was an effective ridgeline control line.

In contrast, at the McIntyre Hut fire, the NSW Parks and Wildlife Service and the NSW Rural Fire Service had decided on an indirect attack 'due to the steep terrain, difficult access and unpredictable fire behaviour'.[4] Containment lines were identified, generally on existing trails and tracks, and heavy plant was brought in to improve and 'clean up' these earth breaks.

At the Bendora fire, and particularly the Stockyard Spur fire, heavy plant was going to be needed to reopen tracks and construct control lines. Access was generally considered poor: some fire tracks had been allowed to become overgrown and some had been blocked off to deny recreational traffic access in areas that could affect water catchments. A heavy dozer was deployed on 9 January but it was not able to commence work until early on Day 3.

Crews were deployed to the fires early in the day, assembling at a staging area in the mountains at 6 am. It is of note that the incident controllers assigned to each fire were different from those assigned on Day 1, being two Deputy Captains. On arrival at the fires, it was established that there had been no self-extinguishment overnight—'a somewhat common feature of highland fire behaviour with cooler easterly winds'[5]—which alerted ESB staff to the fact that there were 'some unusual fire behaviour patterns occurring'.[6]

Stockyard Spur fire taken on the morning of 9 January 2003. Photo courtesy ESB.

Direct attack proved unsuccessful and the fire's size increased 'fairly quickly'.[7] *Firebird 7* and the Snowy Hydro Southcare helicopter were used for reconnaissance and aerial bombing. A light unit with two firefighters was sent to the Gingera fire: it had been confirmed that the fire was in the ACT. One light unit remained monitoring the Gingera fire overnight; other crews did not remain overnight as a result of 'safety concerns posed by access limitations'.[8] The Gingera fire moved into NSW under an easterly influence that night.[9]

Day 2 also saw initial tasking of ACT crews to assist with the McIntyre Hut fire in NSW. The Chief Fire Control Officer attended meetings at Queanbeyan and an ACT Bushfire Service liaison officer was assigned there, an arrangement that continued until the end of January. ESB made efforts to increase the number of aerial resources by contacting the NSW Rural Fire Service and the ACT's existing contractor. Only one additional light helicopter was obtained (and it later crashed into Bendora Dam). The Inquiry received conflicting advice about whether other aerial resources were available at this time: some individuals suggested that, had the ACT Bushfire Service made a greater effort, more aircraft could have been brought in to assist with the ACT firefighting effort.

Notes

1 ESB submission, p. 20.

2 Direct attack refers to 'directly attacking' the fires with water or hand tools.

3 ESB submission, p. 100.

4 NSW Rural Fire Service submission, p. 5. 'Indirect attack' refers to fighting the fire through back-burning to reduce available fuel, as opposed to attacking the flanks or 'head' of the fire directly with water.

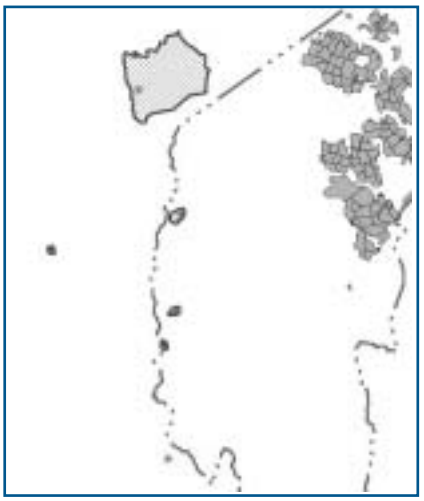
5 ESB submission, p. 101. Notwithstanding this comment, it is noteworthy that the easterly winds did not arrive until the afternoon of 9 January.

6 ibid.

7 ibid.

8 ibid.

9 NSW Rural Fire Service Operations record, p. 3.



Day 3: Friday 10 January

Easterly winds prevailed during most of Friday 10 January, reaching 10–15 kilometres an hour. The forest fire danger index was 17.

Arrangements were made for the ACT Fire Brigade to deal with any bush and grass fires within the city boundaries. This allowed the ACT Bushfire Service to concentrate on the fires in the mountains. ACT Fire Brigade rural tankers were crewed during ACT Bushfire Service 'stand-up periods'; this involved another four station officers and 12 crews.

In the morning the Chief Fire Control Officer attended a planning meeting with the NSW Rural Fire Service in Queanbeyan, to coordinate the fire response at McIntyre Hut, and the ESB Executive Director and a Deputy Chief Fire Control Officer attended a further meeting with the Rural Fire Service in the afternoon. A D9 dozer had been deployed the previous day and began establishing a firebreak on the north-west edge of the Uriarra pine plantation (close to the ACT–NSW border), which was potentially under threat from the McIntyre Hut fire.

At the Bendora fire a combination of direct and indirect attack on various flanks of the fire was adopted. Further changes in staffing for the position of incident controller occurred, and in the afternoon the level of the position was upgraded from Brigade Captain to Group Officer, which meant that a more experienced person assumed the leadership role on the ground. ESB, in consultation with the Group Officer, chose to keep crews at the fire overnight, to carry out back-burning. That was the first occasion in the ACT on which crews remained on the scene overnight. It was not a change of conditions that led to this decision; rather, it was a change in the method of firefighting, to indirect attack, and a change in the experience of the on-site incident controller.

Day 3 also led to eight ACT firefighting units and two command units being directed to the McIntyre Hut fire, under the command of the NSW Rural Fire Service. Apart from some occasional 'hot spot water bombing'[1], no resources were deployed to the Stockyard Spur fire during the day because Stockyard Spur was considered a lower priority than the Bendora fire. Two tankers and crew were deployed to the Gingera fire during the morning to construct rake hoe lines[2], but they were redeployed to the Bendora fire before

lunchtime, leaving the Gingera fire with only a light unit crew observing it from the road.

Media releases began to be issued on Day 3.[3] ESB provided the following information to the community on that day:

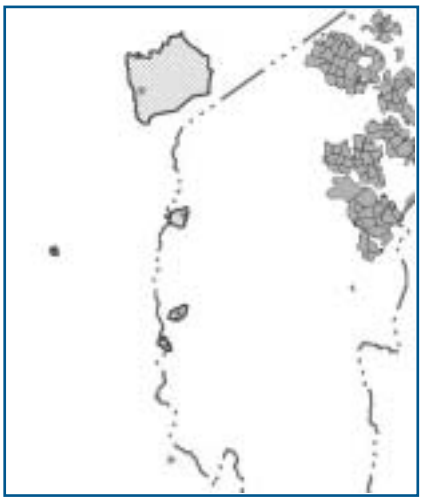
- The bushfires in the ACT had expanded their reach during the previous 24 hours. The Bendora fire was now about 200 hectares, Gingera was about 40 hectares and Stockyard Spur was about 84 hectares.
- Approximately 110 personnel and four helicopters were working to contain the fires, although it was expected they would burn for the next few days.
- Resources were being focused on the Bendora fire.
- The ACT Bushfire Service was being kept informed about the McIntyre Hut and Mount Morgan fires in NSW.
- There was a high fire danger rating but no total fire ban.
- Namadgi National Park remained open but about 324 hectares of it had been burnt.
- The Mount Franklin Road south from Piccadilly Circus was closed to the public to facilitate fire crew access. No other roads were closed, although motorists were advised to avoid the Brindabella Road because of smoke and the need to protect fire crew access.

Notes

1 ESB submission, p. 106.

2 'Rake hoe lines' refers to the construction by firefighters on foot of an area of earth cleared of all combustible material to form a firebreak adjacent to the flanks and rear of a fire. It may also require the use of chainsaws to assist in removing trees and branches.

3 Depicted in this chapter is information passed by ESB (and others) to the community via its formal media releases. Numerous other media interviews were conducted conveying a range of information that is not reflected in this report.



Day 4: Saturday 11 January

On Saturday 11 January the winds continued to be east-south-easterly, reaching speeds over 35 kilometres an hour. It was the coolest day so far, with a maximum of 23ºC. The forest fire danger index was 14.

ACT Bushfire Service representation at NSW Rural Fire Service planning meetings continued. The incident controller for the Bendora fire was further upgraded, to Deputy Chief Fire Control Officer. Firefighting continued overnight through back-burning[1] and monitoring control lines.[2]

Under an easterly influence, the Bendora fire crossed into NSW overnight. Access to the Stockyard Spur fire and firebreaks were developed during the day, although no resources were deployed overnight. Resources altered on the Gingera fire during the day but were withdrawn overnight.

From this day the ACT Ambulance Service began deploying resources to the staging area in the Brindabellas, to support firefighting operations.

Media releases issued on Day 4 provided the following information:

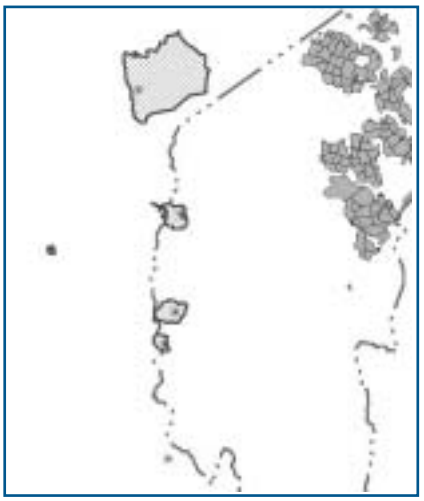
- The three bushfires in the ACT had continued to expand during the previous 24 hours—Bendora, 320 hectares; Gingera, 100 hectares; Stockyard Spur, 160 hectares.
- Resources were again mainly focused on Bendora and Gingera, while Stockyard Spur was being monitored.
- Crews were working on containment and the fire danger was moderate.
- A total of 110 personnel, including ESB headquarters, and two helicopters were available for aerial observation and water bombing.
- Although Namadgi National Park remained open, about 580 hectares of it had been burnt.
- Mountain trails in Tidbinbilla Nature Reserve were closed and motorists were advised to avoid the Brindabella Road.

Notes

1 'Back-burning' refers to an indirect method of firefighting, where fuel ahead or to the flank of a fire is deliberately burnt in an effort to control the fire's spread and reduce the available fuel. Back-burning requires a mineral earth break to begin from and is often conducted at night, when fire conditions are less aggressive.

2 Control, or containment, lines are roads and tracks of fire breaks identified as a viable position from which to contain a fire's spread or progress. In the worst case, control lines may need to be established by earth-moving equipment, which is a time-consuming task.

Air support included both aerial reconnaissance and water bombing. Photo printed with permission of the *Canberra Times.*



Day 5: Sunday 12 January

On Sunday 12 January weather conditions remained relatively mild, although it did become more windy. The forest fire danger index was 15, but it was from this day that temperatures began to rise.

A vehicle accident involving a NSW Rural Fire Service crew blocked the Mount Franklin Road, denying access to the Gingera fire. The Service Management Team 'reached the conclusion that the objectives it was seeking to achieve required capabilities that were not available locally'.[1] Heavy earth- moving plant and additional aircraft for water bombing and observation were sought from the Commonwealth Department of Defence through Emergency Management Australia, after an unsuccessful attempt to obtain access to NSW Rural Fire Service aircraft. On the evening of 12 January, the Chief Fire Control Officer advised the NSW Rural Fire Service that the ACT would have to withdraw resources from the McIntyre Hut fire 'to attend to the fires in the ACT'.[2]

Media releases issued on Day 5 provided the following information:

- Crews were continuing to work on containing the three fires, all of which had expanded during the past 24 hours—Bendora, 590 hectares; Gingera, 480 hectares; Stockyard Spur, 500 hectares.
- The focus continued to be on Bendora and Gingera fires, and a controlled burn had been conducted at Bendora overnight. An ACT crew would also assist with a back-burn at McIntyre Hut.
- There was a high fire danger rating and 110 personnel and two to four helicopters were involved in the firefighting effort.
- There were further road closures, at Curries Road, Warks Road and Old Mill Road.
- A total of 1440 hectares had been burnt in Namadgi National Park, and restrictions were placed on camping in the Park. It was announced that Tidbinbilla Nature Reserve would be closed until 15 January.
- ACTEW was reviewing its contingency arrangements.

Notes

1 ESB submission, p. 112.

2 ibid., p. 111.

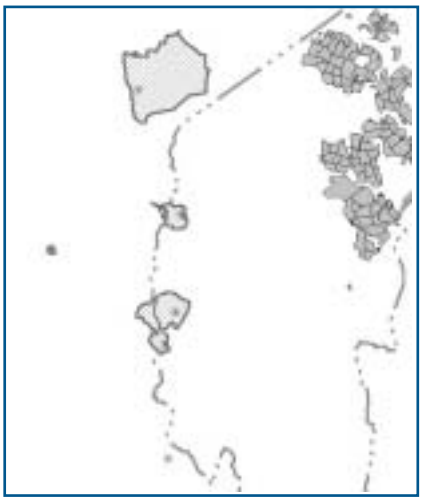
Day 6: Monday 13 January

On Monday 13 January temperatures climbed to 27ºC and humidity dropped to 30 per cent; north-easterly winds were reaching 20 kilometres an hour. The forest fire danger index reached 19.

Two Navy Seahawk medium-lift helicopters for aerial bombing and two Navy Squirrel light helicopters for observation arrived. A civilian helicopter crashed into Bendora Dam. The pilot was rescued and successfully resuscitated by ACT Ambulance Service intensive care paramedics and then conveyed to Canberra Hospital. A Defence liaison officer was assigned to ESB; this position remained until the end of January. Additional Defence resources were requested. (Appendix D lists all Defence resources requested and provided.)

Media releases issued on Day 6 provided the following information:

- The fires continued to extend their reach—Bendora, 850 hectares; Stockyard Spur, 950 hectares; Gingera, 450 hectares.
- A total of 140 personnel were deployed. The ACT task force that had been sent to McIntyre Hut returned to the Territory. Four helicopters were available for firefighting operations.
- In Namadgi National Park 2250 hectares had been burnt.
- Details of the helicopter accident at Bendora Dam were given.



Day 7: Tuesday 14 January

On Tuesday 14 January the wind turned west-north-westerly for much of the day, although it remained no stronger than 16 kilometres an hour. A stronger easterly change arrived late in the afternoon. The forest fire danger index reached 19.

The ESB submission to the Inquiry stated that formal planning meetings—for 'information and strategic decision making'[1]—were instituted twice daily, at 9.30 am and 4.00 pm, chaired by Chief Fire Control Officer. The Gingera and Stockyard Spur fires had joined at about 2.00 am (henceforth referred to as the 'Stockyard fire') and the fire burnt into NSW under the influence of an easterly wind. The ESB submission stated that the Service Management Team 'put in place via Canberra Connect efficient channels to inform the ACT public on the progress of the ACT bushfires'[2]; these arrangements were, however, more rudimentary compared with the information channels established on 18 January. The NSW Rural Fire Service State Operations record notes, 'Bendora fire—containment preparation ... being done. Stockyard and Gingera fires ... surveillance patrolling only in isolated areas'.[3]

Media releases issued on Day 7 provided the following information:

- The ACT Chief Health Officer announced a health warning for high smoke levels.
- ESB urged the public to call 000 only in cases of immediate threat from fire; it had been receiving numerous 000 calls reporting smoke over Canberra.
- A high fire danger was being experienced.
- About 250 personnel were deployed to the fires.
- There was an increased deployment of ACT Ambulance Service intensive care paramedics to the fire ground, to provide 24-hour paramedical support during night back-burning.

- Four bulldozers, one large tanker of jet A1 fuel, and two Seahawk and two Squirrel helicopters from Defence were assisting.

- Helicopter operations were suspended from time to time because of thick smoke.

- The Snowy Hydro Southcare helicopter and the south-eastern NSW aeromedical rescue helicopter had completed 236 water-bombing missions in the six days from 8 January to 13 January.

- There was no dramatic increase in the size of existing fires, a consequence of milder weather conditions.[4]

- There were no accurate details of fire sizes due to aircraft operation restrictions. The estimates were—Bendora, about 950 hectares; Stockyard, about 1360 hectares; Gingera, about 600 hectares.

- In Namadgi National Park 2850 hectares had been burnt.

- The helicopter was retrieved from Bendora Dam. The ACT Fire Brigade Hazmat crew was involved in providing float booms as a precaution in the event of fuel leakage.

Notes

1 ESB submission, p.116.

2 ibid., p. 117.

3 NSW Rural Fire Service Operations record, p. 5.

4 Even though statistics quoted appeared to be 20 per cent or more than reported the previous day.

Day 8: Wednesday 15 January

On Wednesday 15 January at lower elevations the winds were from the north-east to south-east, although at higher elevations they were from the west, which probably affected the fires. The forest fire danger index was 19.

A Bureau of Meteorology meteorologist started attending meetings of the Service Management Team, to 'provide specialist weather services'[1] and in-person briefings. This involved a specific meeting with the planning section of the Service Management Team, followed by participation in the general briefing conducted daily at 9.30 am. The Service Management Team was advised that 'extreme fire weather conditions ... with strong winds, high temperatures, low humidity and a high degree of vertical instability in the atmosphere'[2] were likely for Canberra on the weekend. This advice was reinforced on Thursday 16 January. Some ACT Fire Brigade staff joined the Incident Control System planning function.[3] The NSW Rural Fire Service State Operations record notes, 'Bendora fire—strategies in place, currently back burning, potential property threat. Stockyard and Gingera fires—keeping under surveillance, dozers currently working'.[4]

At about 11.30 am the ACT Bushfire Service liaison officer located at the NSW Rural Fire Service in Queanbeyan rang his Chief Fire Control Officer, saying the NSW Rural Fire Service Commissioner was at the office with the Director General of the NSW Parks and Wildlife Service. The Chief Fire Control Officer spoke to the NSW Rural Fire Service Commissioner and asked him to remain at the office while he immediately travelled to Queanbeyan to meet with him. At the 15-minute meeting the NSW Rural Fire Service indicated that the McIntyre Hut fire was within control lines and the ACT Bushfire Service indicated that the Bendora fire was all but controlled. The NSW Rural Fire Service asked the ACT Bushfire Service what additional resources it might need; the Chief Fire Control Officer requested the following:

- four task forces of five units, with command and support personnel numbering approximately 200 firefighters, and associated vehicles

- up to six additional staff to be employed in the Incident Control System teams

- additional aerial resources.

These resources were sought by the Chief Fire Control Officer to assist with containment of the Stockyard fire, which had become the ACT's highest priority. The NSW Rural Fire Service agreed that the resources would be available for deployment in the ACT on the following day.

The NSW Rural Fire Service Commissioner and the Chief Fire Control Officer each told the Inquiry that he had called the meeting. What does not appear in dispute is that an offer of resources was made by NSW and taken up by the ACT. It appears to the Inquiry that the NSW offer was made in consideration of the overall threat to Canberra, whereas the Chief Fire Control Officer at that time was solely considering what was necessary to contain the Stockyard fire. The Inquiry was informed that at the time no one suggested more resources were required and, indeed, for Stockyard, with only two narrow access routes to the fire, additional resources would have been difficult to deploy there. This meant a total of almost 60 vehicles, five graders and four dozers were being concentrated on the Stockyard fire. The view of the Inquiry is that, when the meeting concluded, the ACT request for four task forces consisting of 20 vehicles and crew from an ACT perspective was meant for Stockyard fire and from a NSW perspective was what was requested to assist with the protection of Canberra. It appears discussions did not occur to clarify this.

The NSW Rural Fire Service considered an aerial incendiary[5] program for the McIntyre Hut fire in an effort to achieve thorough burning within existing control lines. This program was, however, postponed for further consideration the following day.

Media releases issued on Day 8 provided the following information:

- The Bendora fire now covered about 1150 hectares. Successful back-burning overnight had provided a continuous containment line around the south-western, southern and south-eastern flanks of the fire.

- The Stockyard fire now covered about 2300 hectares.

- Approximately 3450 hectares of Namadgi National Park had been burnt.

- There was a high fire danger rating but no total fire ban. The public was asked to be mindful of the dry conditions; similar conditions were expected to continue for the next few days.

- Easterly airflows were expected in the next few days, with north to north-westerly swings. It was also expected that rising temperatures and decreasing humidity from Friday until early the following week would place additional pressure on firefighting operations.

- Helicopter operations resumed.

Notes

1 ESB submission, p. 118.

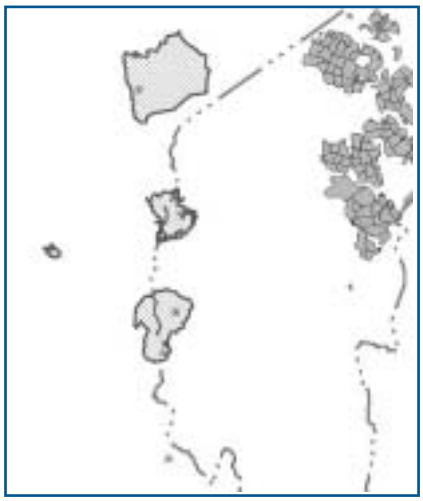
2 Bureau of Meteorology submission, p. 4.

3 The Incident Control System is discussed in detail in Chapter 4.

4 NSW Rural Fire Service Operations record, p. 5.

5 Incendiary devices dropped from a helicopter may be used to initiate controlled burning of grass and undergrowth.

An ACT Bushfire Service crew conducting back-burning at night. Photo courtesy David Tunbridge.



Day 9: Thursday 16 January

On Thursday 16 January the temperature rose to 33°C and humidity dropped to 20 per cent. The forest fire danger index reached nearly 30. Winds remained from the south-east to north-east, although mid-level winds were from the west, most likely ahead of the large-scale frontal feature that was to follow.

The Executive Director of ESB and the Chief Fire Control Officer, accompanied by the Chief Executive of the Department of Justice and Community Safety, briefed Cabinet; later in the day they also briefed the ACT Chief Police Officer and staff and the ACT Fire Brigade Commissioner and staff. The briefing notes detailed the history of the fire and provided weather predictions for the period to Monday 20 January and information on current fire developments, planning contingencies and external support. The Cotter catchment, ACT pine plantations and the Tidbinbilla Nature Reserve and Tracking Station were all listed as potentially under threat. Also listed was the 'urban edge', although there is no greater specificity in the notes. The notes did, however, acknowledge that 'with stronger winds from the north-west there is always the potential for spotting over the containment lines, which has potential serious impact to ACT Forests pines and subsequently the urban area'.[1]

The ACT Fire Brigade commenced planning for their involvement should the fires enter urban Canberra and to supplement the existing ACT Bushfire Service Service Management Team. The ACT Fire Brigade began contingency planning for protection of the urban-rural interface and bought satellite phones for use in areas where existing ESB communications were poor. The Service Management Team acknowledged that suppression, or even control, of the fires in advance of the forecast extreme fire weather 'was recognised as being difficult'.[2] NSW task forces arrived at 4 pm and were sent to the Stockyard fire. Back-burning was intended for that night but it did not happen because a vehicle accident had blocked access along the control lines.

A total fire ban was declared for the five days from midnight on 16 January to midnight on 21 January 2003. This was unprecedented in the ACT's history, total fire bans generally being in place for only one to two days. The NSW Rural

Fire Service State Operations record noted, 'Bendora fire—back burning, mopping up and dozer work continued, property protection implemented. Stockyard and Gingera fires—under ACT control'.[3]

The NSW Rural Fire Service aerial incendiary program at the McIntyre Hut fire was further delayed by a lack of incendiary devices. It began on the following day.

The Ambulance Service of NSW was formally requested to provide assistance to the ACT.

Media releases issued on Day 9 provided the following information:

- Two hundred volunteer firefighters from the Hunter, Great Lakes, Coffs Harbour and Lismore areas would be sent to the ACT to assist, arriving at 6 pm. They would be welcomed by the Chief Minister and be deployed to the Stockyard fire.

- Two hundred and fifty ACT and Defence personnel were already involved in bushfire operations.

- The forecast was for the wind to move to the north-west and begin to pick up as the weekend approached. This would probably blow the Bendora and Stockyard fires, and a third fire burning in NSW in the Brindabella National Park – Goodradigbee River area, back towards the city.

- NSW Rural Fire Service Commissioner said, 'The current weather forecast and the fact that vegetation in the southern part of NSW and the ACT is extremely dry means the potential for fire to impact on increasingly more populated areas is very high'.

- The northern area of Namadgi National Park was closed. A total fire ban was declared for the ACT, beginning at midnight on 16 January and in force until midnight on 21 January. (As noted, this was unprecedented.)

- The Bendora fire had grown to about 2100 hectares. Favourable burning conditions had allowed successful back-burning operations to be carried out overnight.

- The Stockyard fire was now about 3500 hectares. Construction of containment lines would continue during the day, in preparation for back-burning operations planned for the evening.

- In Namadgi National Park 5600 hectares had been burnt.
- Tidbinbilla Nature Reserve and Googong Foreshores were closed.

Notes

1 ESB briefing notes.

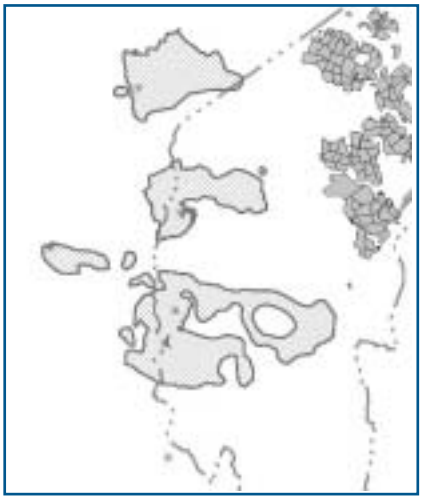
2 ESB submission, p. 121.

3 NSW Rural Fire Service Operations record, p. 5.

NSW Rural Fire Service trucks and personnel. Photo printed with permission of the *Canberra Times*.

Phase Two: 17 and 18 January

By 17 and 18 January NSW itself was experiencing a fire emergency across much of the state.



Day 10: Friday 17 January

The initially light, variable winds on Friday 17 January increased to between 30 and 35 kilometres an hour for much of the afternoon, then dropped significantly in the evening. The temperature peaked at 36ºC and relative humidity fell to 15 per cent. The forest fire danger index reached 50.

A total fire ban was in force. The Bureau of Meteorology advised that this day was the first of several successive days of severe fire weather. There was a further meeting between the Chief Fire Control Officer and the NSW Rural Fire Service Commissioner. As a result of the arrival of a predicted wind change from the south-east to the north-west, the fires spread extensively to the east, travelling over 10 kilometres in the afternoon.

The ACT Fire Brigade focused on preparedness. Among its specific activities were:

- staff recall and standby
- familiarisation with the urban—rural interface
- vehicle and radio readiness
- additional communication centre and command staffing
- additional mapping
- warnings to rural lessees, forest settlements, ActewAGL, and institutions on the urban fringe.

The ACT Fire Brigade Commissioner sought additional resources on standby from the NSW Fire Brigade, identifying Monday 20 January as the day when the ACT would be most likely to need assistance. The first two Ambulance Service of NSW crews arrived, providing further back-up support to firefighters.

The planning section of the Service Management Team developed detailed predictions of the fire spread, reflecting the progress and impact of the fire;

one individual informed the Inquiry that the predictions were accurate to within a few hours. The predictions suggested that fire could spread to the city's edge on Saturday 18 January. This information would have been available to the operations section of the Service Management Team.

The Orroral Valley staging area was established by 8.00 am to support efforts at the Stockyard fire. The McIntyre Hut fire in NSW broke its containment lines and headed east towards the ACT. Later in the day it was assessed as contained. Up to 17 aircraft were engaged to assist with fire suppression. During the day unsuccessful attempts were made to re-establish containment lines around elements of the Bendora fire. The logistics base at Bulls Head (north of the Bendora fire, on the Mount Franklin Road) became threatened by a fire to the west in the Brindabella Valley. Because of this threat and the continued spotting of the fire outside containment lines, all firefighting resources were withdrawn from the Bendora fire and Bulls Head staging area by 6.46 pm. The Bendora fire continued spreading east overnight, crossing the Cotter River.

Work continued on the Stockyard fire during the day in an effort to re-establish containment lines. But fire weather conditions 'deteriorated rapidly through the morning'[1], leading to the Group Officer acting as incident controller and the Service Management Team agreeing to withdraw all resources from that fire to the Orroral Valley staging area. The fire was spotting over Corin Dam and the Orroral Valley and 'moving rapidly east'.[2] It reached Mount Tennent 'early in the night'. Because the fire had moved into Tidbinbilla all crews were withdrawn from the Stockyard fire at 4.00 pm due to safety concerns regarding access.

At 4.30 pm the ACT Fire Brigade began helping with property protection around Tidbinbilla, with a task force deploying until about 11.30 pm. Another task force deployed towards midnight to support back-burning operations at Tharwa; it remained there until early morning. Additional resources from NSW arrived and the Service Management Team deployed them to operate through the night.

At a 6.00 pm meeting at ESB headquarters the Chief Fire Control Officer advised that firefighting efforts on the following day would focus on property protection, including protection of the pine plantations. It was recorded in the minutes of this meeting that 'there is potential for fire to reach Uriarra by mid morning tomorrow, the Cotter Pub and reserve by 4 pm and Mt Stromlo and potentially Narrabundah Hill by 8 pm'.[3] That night 42 rural landholders west of Canberra were advised by ESB that their properties were under threat.

The NSW Rural Fire Service State Operations record noted, 'Bendora fire—back-burning right around not completed, western part completed but north still to be done. Stockyard and Gingera fires—ACT doing track work, Army cutting track east, west to north, vehicle through bridge has delayed work in the ACT'.[4] The delayed incendiary program was started at the McIntyre Hut fire; it lasted over two hours but was brought to a halt because of 'increasing winds, erratic fire behaviour and deteriorating flying conditions'.[5]

Media releases issued on Day 10 provided the following information:

- The Chief Minister announced that the ACT community could now obtain the latest bushfire information through the Canberra Connect website and call centre.

- The Bendora fire now covered about 2443 hectares. Favourable conditions had allowed more than 6 kilometres of back-burning to be carried out overnight. Containment lines were in place around the south-eastern sector of the fire. Some break-outs had occurred to the north and south.

- The Stockyard fire now covered about 4750 hectares. Planned back-burning operations involving additional resources from the NSW Rural Fire Service were prevented by an accident involving an ACT tanker on the Lickhole Creek trail, which blocked access to the south-east.

- Bulldozer construction of containment lines was to continue, in preparation for further back-burning operations in the evening and for extreme fire weather during the weekend. Water bombing would continue.

- In Namadgi National Park 7193 hectares had been burnt. The entire park was closed.

- Approximately 450 personnel were working around the clock on 12-hour shifts. Eight bulldozers and six aircraft were operating.

- At 6.15 pm the Executive Director of ESB said the ACT had sufficient trained personnel to cope with the emergency. (Members of the public had been inundating the ESB phone line with offers of assistance for the firefighting effort.)

- At 8.50 pm ESB advised that adverse weather had caused spotting over containment lines.

- The threat to property in Tidbinbilla was serious. ACT Fire Brigade, ACT Bushfire Service, and NSW Rural Fire Service crews were deployed to the area to assist with property protection.

- The ACT was coordinating with NSW to manage a spot fire from McIntyre Hut close to the ACT border.

- The bushfire logistical support staging areas were being relocated from Bulls Head and Orroral Valley to the north Curtin district playing fields.

Notes

1 ESB submission, p. 127.

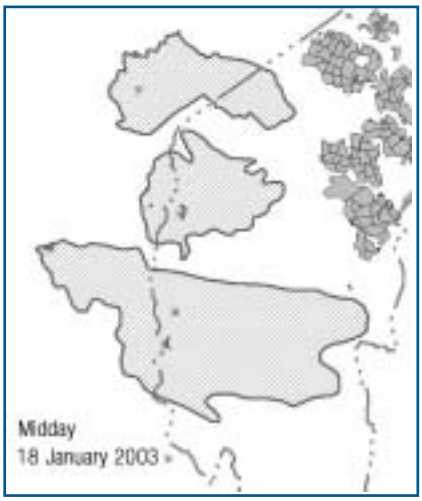
2 ibid.

3 Meeting minutes.

4 NSW Rural Fire Service Operations record, p. 5.

5 ibid., p. 10.

Coordination of aerial bombing with firefighters on the ground is essential. Photos printed with permission of the *Canberra Times*.



Day 11: Saturday 18 January

By 9.00 am on Saturday 18 January, winds were 30 kilometres an hour gusting to 40; by 2.30 pm they were 37 kilometres an hour gusting to 52. They continued to increase and became quite erratic. Gusts of 78 kilometres an hour were recorded at 3.20 pm. The wind direction was from the west-north-west until a south-easterly change arrived late in the afternoon. The Bureau of Meteorology submission noted that local topography could affect 'wind direction, speed and gustiness'.[1]

Atmospheric stability was characterised by a 14-kilometre-high cumuliform plume of dry, unstable air above the fire. Its inherent instability and vertical motion would have drawn in air at lower levels, and the vertical exchange of air on the down side probably contributed to the very gusty conditions and may have led to the narrow, intense vortices that caused structural damage. The temperature reached 37.4ºC at 12.42 pm; it was still 33.6ºC at 7.00 pm but then dropped more rapidly. Relative humidity was measured at 46 per cent at 6.30 am but was 8 per cent by 2.50 pm and fell to 4 per cent at 4.30 pm. The forest fire danger index peaked at 105 at 3.30 pm.

The total fire ban remained in force. One of the two Deputy Chief Fire Control Officers was appointed Field Controller and assigned a helicopter. His task was to adjust the deployment of resources during the day so as to best deal with the fire threat. Rural areas were divided into sectors and resources were allocated with the initial intent of keeping the fire to the west of the Murrumbidgee and fighting the fire flanks. Apart from resources deployed to the Lower Molonglo water-treatment works, ACT Fire Brigade resources were concentrated in the city.

Officers of Canberra Connect met at 8.00 am to prepare their facility for the likely calls during the day. The 9.30 am planning meeting at ESB received advice from the Bureau of Meteorology that the day would be one of 'extreme fire danger', with 'perhaps more to follow'. 'All agencies involved in the incident were briefed on the implications of this.'[2]

On receiving confirmation of the day's forecast, the NSW Rural Fire Service Commissioner dispatched by road an Assistant Commissioner from

headquarters to ESB in Canberra. On arrival (at about 1.00 pm) and after an initial assessment, the officer contacted the Commissioner and asked that all available NSW Rural Fire Service resources be directed to assist the ACT. This led to multiple NSW responses from regions adjacent to the ACT, which were subsequently coordinated by the NSW Rural Fire Service in Queanbeyan. At times, this was without the knowledge of the Service Management Team at ESB, although the NSW Rural Fire Service Assistant Commissioner advised ESB of his overall intent.

The minutes of the daily 9.30 am briefing show that three separate threats were discussed:

- a potential run from McIntyre Hut fire affecting Weston Creek through to Greenway and potentially west and south Belconnen if the wind were a more westerly wind
- a potential run from Tidbinbilla affecting the Bullen Range and southern parts of Tuggeranong
- a potential threat to Williamsdale from the Stockyard fire to the west of the Murrumbidgee.

Recovery strategies were also discussed, although ESB management stated these were in preparation for potential rural evacuations, not urban evacuations.

ACT Policing activated its Police Operations Centre at the Winchester Police Centre in Belconnen early on 18 January in anticipation that it would be needed to manage police and Territory resources and responses and against the possibility that it would be needed should a state of emergency be declared.

The ACT Fire Brigade carried out further planning in the morning, visiting key facilities. A liaison officer was placed at the ACT Police Winchester Centre and assistance from the NSW Fire Brigade was requested.

The Service Management Team reinforced its strategy of protection of people and property, rather than directly attacking the fire. As the day progressed the McIntyre Hut, Bendora, Stockyard and Broken Cart fires drew closer together, eventually joining to create a very substantial single fire front threatening Canberra's western edge. The exact movement and development of the fires is still being studied. Winds were blowing from the north-west to the west, and numerous sub–weather patterns were occurring around the fire, partly as a result of the convection column that was being generated up to 14 kilometres above the fire.

Rural fire crews were reporting fire locations and retreating along escape routes towards the city. Property protection efforts were made where possible, but the priority became the safety of crews and the public. Effectively, this meant that few crews were available for subsequent positioning along the suburban edge when houses were threatened. The NSW Rural Fire Service State Operations record noted, 'Brindabella Complex—property protection implemented andtrying to establish location of actual fire front'.[3]

The normal media liaison function within ESB was very limited and on a day-to-day basis was more focused on public relations. Over several days as the crisis developed, the ACT Government brought in additional experienced staff from the Chief Minister's and Urban Services Departments to assist ESB's sole media liaison officer.

During the morning it became apparent to ESB that rural properties to the west and south were under immediate threat. The Service Management Team and the ACT Fire Brigade discussed the deployment of resources to protect the urban fringe. The media unit within the planning section of the Service Management Team 'was tasked with preparing, having approved, and disseminating advisory notices to the community about the threatened areas'.[4] ESB released the first Standard Emergency Warning Signal fax at 1.45 pm. Inexplicably, ABC radio in Canberra did not receive the fax until 2.31 pm. This appears to have been a consequence of a failed fax-stream addressing arrangement.

Descending from Mount Tennent, the fires passed around Tharwa at about noon. The village was unscathed, protected by the back-burning of the night before. The fires reportedly hit the outer streets of Duffy at about 3.00 pm, although modelling from the fire services suggests a later arrival; this could have been because of the ember storm preceding the main fire front. Locating and tracking the fires' progress towards Canberra was problematic. Smoke greatly hindered observation from both the ground and the air and radio communications were impaired. Reporting of fire movement by firefighters on the ground was not extensive and, when attempted, was reliant on an increasingly overloaded communication system that could not be heard across the total fire ground. The speed of the fires' progress, the magnitude of the fires' impact, and the mass of emergency service and community involvement and activity led to great complexities and confusion.

ACT Policing, and at one time the ACT Fire Brigade, sent their own patrols forward to report on the fires' progress, but the information gained did not

always reach the Service Management Team at Curtin. Members of the Team's planning section had in the communication centre representatives who, through constant monitoring of operational messages, were able to relay to the planning section information about the location of fire outbreaks and the movement of crews withdrawing from the fires.

ACT Policing established initially two, and later a third, forward control points to coordinate the Police response as the fires approached the city. Despite invitations from the Police, no ESB personnel were assigned to these posts. Effectively, they operated independently, focusing on intelligence gathering, public safety, evacuation, and traffic control in support of police operations. No other emergency service established a forward command post during the initial stages.

At about 2.00 pm ESB management, ACT Policing and government representatives began discussing the 'vulnerability of the urban area and the desirability of declaring a state of emergency'.[5] The Police capacity to enforce evacuation appeared to be the pivotal concern, although ACT Policing also wanted the ability to coordinate resources and efforts such as inter-agency cooperation that it believed would be required. It was argued that this could not be resolved without a state of emergency being declared. The Chief Minister declared a state of emergency at 2.45 pm and under the legislation the ACT Chief Police Officer became the Territory Controller. In an effort not to compromise the Chief Fire Control Officer's authority to continue managing the response to the fires, a decision was made to appoint the Chief Fire Control Officer as the Alternate Controller, as allowed for under the *Emergency Management Act 1999*. The ACT Chief Police Officer identified recovery as a specific function that should be coordinated by him and later decided that the function should be managed from ACT Policing's headquarters, at the Winchester Centre.

The ACT Fire Brigade deployed resources to those areas assessed as being at greatest risk—Duffy and the Lower Molonglo Water Quality Control Centre, reflecting the importance of this infrastructure, and Giralang, where a fire not directly related to the bushfire needed attention.

Once the fire arrived in urban Canberra, further deployments were made to Chapman and Kambah. The crews at Lower Molonglo (the ACT Fire Brigade and the ACT Bushfire Service) were faced with particularly adverse conditions in an isolated environment. Their actions did limit the fire's impact on the facility, despite two Fire Brigade pumpers becoming inoperative because they caught fire.

The fires that passed through western Canberra caused significant damage. Their impact was extensive in a number of suburbs and along fingers of parkland between suburbs. Linked to the fires was a major firestorm that in some locations appeared to travel within the fire and at other times appeared to travel ahead of the fire. The focus on the fire and the limited resources available to deal with the widespread damage that occurred diverted attention from residents whose homes had been subjected to storm damage. The emergency response concentrated on fire rather than associated storm damage, even though some ACT Emergency Services workers were involved in providing storm-damage support in the Kambah area.

ESB was experiencing significant command and control problems at the time the fire front reached Duffy. The ESB building lost power intermittently for two to three hours from about 4.30 pm onwards. This added another layer of complexity to the management of operations. Emergency power provided the back-up for the communications and operations room but not for the rest of the facility, where a substantial number of operational support personnel were working.

With a state of emergency declared, the ACT Ambulance Service together with the Territory's Health Coordinator established a Medical Emergency Coordination Centre at Curtin, in accordance with the ACT Emergency Plan. A liaison officer from the St John Ambulance and the Ambulance Service of NSW also joined the coordination centre. Local hospitals were advised and they activated their emergency plans and began preparing for anticipated increases in workload. A total of 15 ambulance crews were on duty, almost double the normal daily shift, leading to the busiest day on record for the ACT Ambulance Service. With the fires threatening to further penetrate into the city, the Medical Emergency Coordination Centre planned the evacuation of Calvary Hospital.

Media coverage of the event varied. It was ABC Radio 666 that became the carrier of most information for the public, in keeping with its service charter. The ABC had maintained close contact with ESB as the fires were developing and had reporters available to deploy to ESB and the field as the emergency unfolded. Commercial stations had very limited capacity to respond to events. With television and some radio being programmed nationally at the time, local radio stations were more responsive.

As the seriousness of the threat to Canberra became more apparent during the afternoon the interest of the national media increased. When power losses affected much of Canberra, interstate citizens were ironically often receiving better coverage than local Canberra residents. In fact, submissions to the

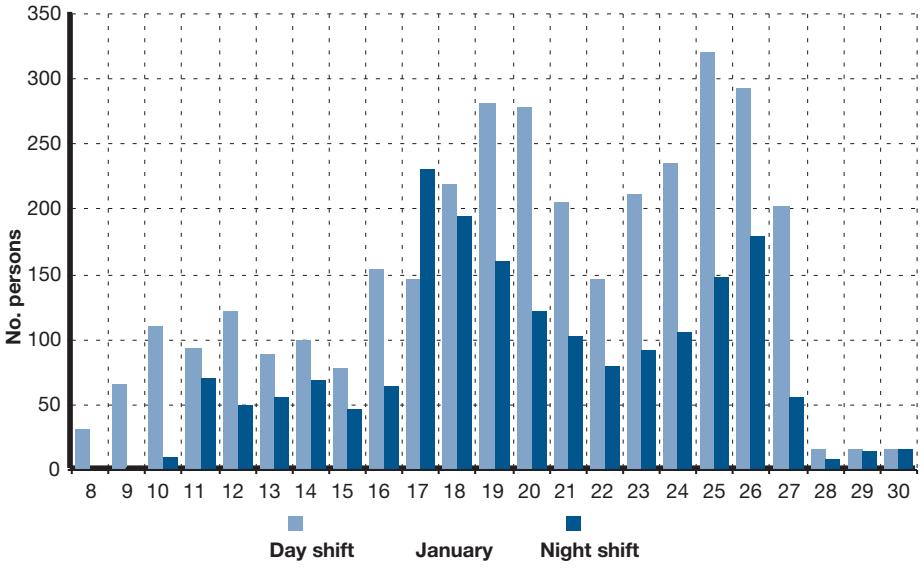
Inquiry claimed that numerous emergency service workers (particularly those from interstate) were also listening to the ABC radio to gain information about the fire event. Chapter 5 deals in more detail with the way the community was informed about the approach of the fires on 17 and 18 January.

The fires and the associated firestorm resulted in the following:

- the death of four residents
- severe injuries to one helicopter pilot and a number of civilians
- 160 000 hectares burnt in the ACT—almost 70 per cent of the Territory—and a further 100 000 hectares burnt in NSW. Among ACT lands burnt were
  - Namadgi National Park
  - Tidbinbilla Nature Reserve
  - all government pine forest west of the Murrumbidgee River
  - Stromlo pine plantation
- the loss of 87 rural houses and 414 urban houses
- fire damage to 14 rural houses and 161 urban houses
- firestorm damage to 140 houses not destroyed by fires
- major losses to government infrastructure and facilities.

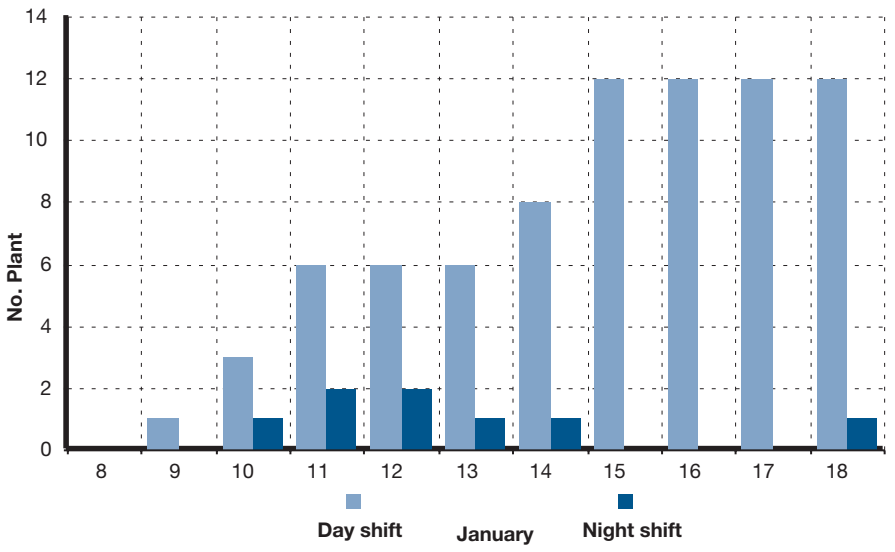
Police road block controlling movement into fire affected areas. Photo printed with permission of the *Canberra Times*.

ACT Bushfire Service response to fires, 8–30 January 2003: personnel resources committed, by shift

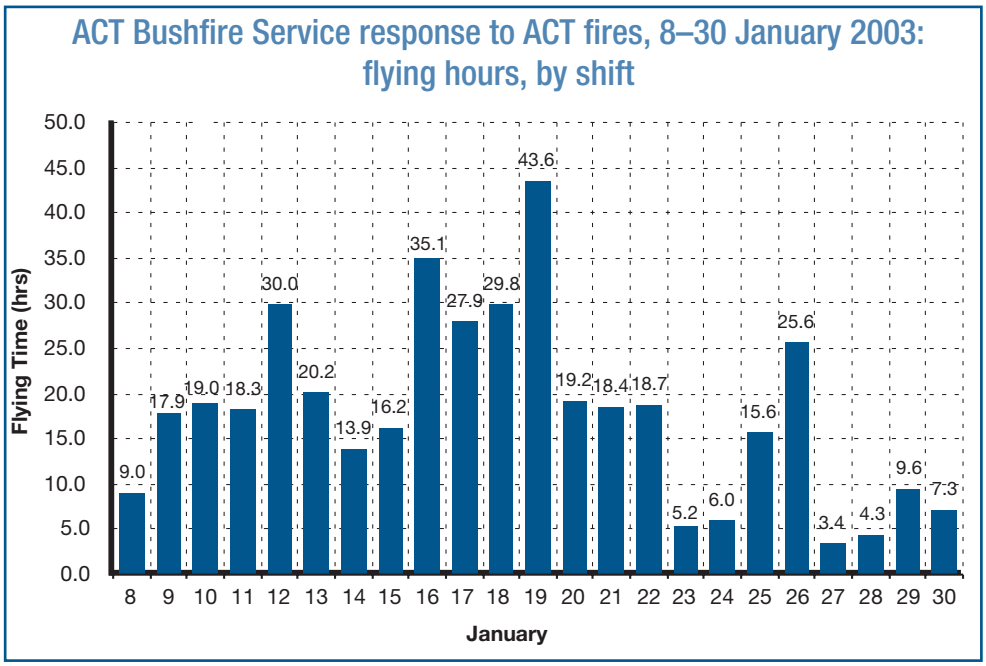


1 The first shift, on the 8th, covered the later part of the day. Source ESB.

ACT Bushfire Service response to ACT fires, 8–18 January 2003: plant resources committed, by shift



1 Day shifts often spanned 15 or 16 hours.
2 Plant numbers include dozers, graders and similar equipment. Source ESB.



1 Flying may be a combination of observation and water-bombing tasks. Source ESB.

The McIntyre Hut Fire

The McIntyre Hut fire in New South Wales was early recognised by both the NSW and ACT authorities as potentially having serious implications, as a consequence of both its early rapid spread and its location to the due west of Canberra in close proximity to the border and the western edge of the Uriarra pine plantation.

While the Inquiry was concerned with the operational response of the ACT authorities to the bushfires, ACT resources were also involved in responding to the McIntyre Hut fire. This fire eventually became part of the collection of fires that affected Canberra. For these reasons, and to place on record the substantial assistance the NSW authorities provided, a summary of the McIntyre Hut fire follows. The Inquiry does not include any assessment of the suitability or appropriateness of NSW Rural Fire Service actions: this is outside its terms of reference.

An observer at the Mount Coree fire tower initially identified the McIntyre Hut fire. The NSW Parks and Wildlife Service office at Queanbeyan dispatched a Ranger and a separate light unit with crew to investigate. The NSW Rural Fire Service dispatched a tanker and crew from Fairlight, a small hamlet just across the ACT–NSW border. The ACT Bushfire Service also dispatched a light unit

from the ACT Forests Brigade. The crews reported that the fire had 'taken a significant run to the east up a mountainside'.[6]

This initial fire activity reportedly combined with:

- a number of ignitions in the same vicinity
- steep terrain leading to rapid fire spread
- deteriorating fire weather
- travel distances and time to access the fire.

These factors 'made a direct attack impractical at that time'.[7]

Of the four ignitions, only one was adjacent to a road, and it is unclear whether that particular ignition was even identified on the afternoon of 8 January. The main fire, as identified by the Parks ranger, was reported as 200 hectares in size moving up a western-facing, particularly dry slope. No further operational response on site was taken that evening.

No aircraft or plant was recorded as deploying, although an aerial reconnaissance was completed by a NSW Parks and Wildlife aircraft.

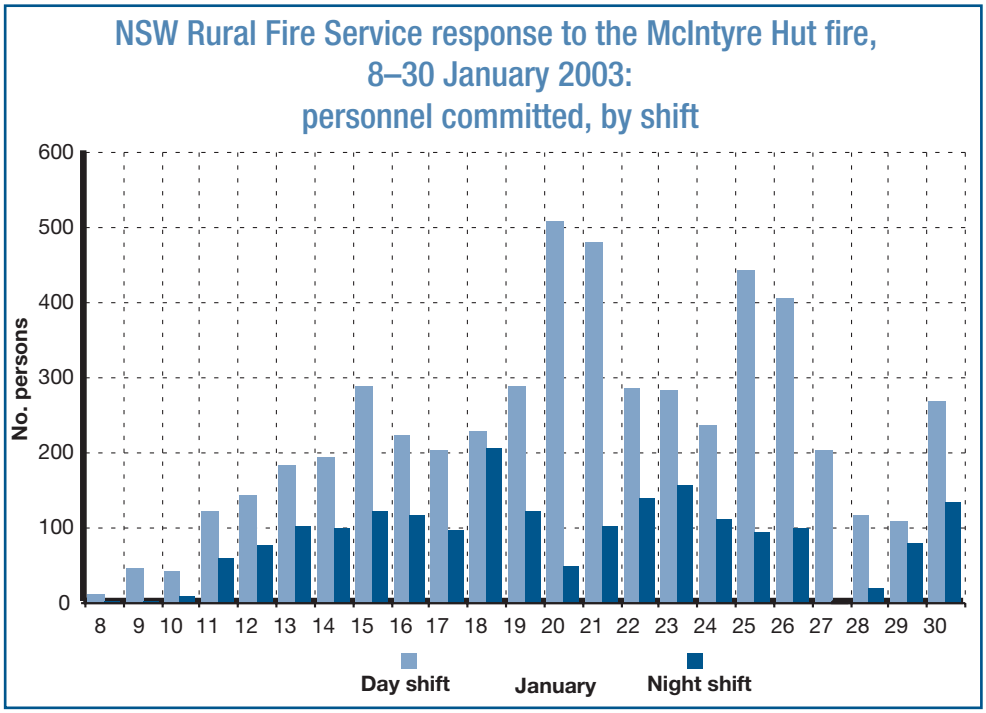
Due to the fire behaviour, the initial response on 8 January involved a strategy of indirect attack from the start and while the number of resources grew steadily so did the length of control lines being established.

The strategies adopted on Thursday 9 January were focused on defending properties ahead of the fire and identifying suitable perimeters to establish control lines and implement a containment strategy. Winds had swung from the west-north-west on 8 January to the south-south-east on 9 January. Resources deployed to the fire on 9 January were:

- one Cat 1 tanker
- one Cat 4 older style two-wheel-drive tanker
- eight Cat 7 smaller 'Cantor size' tankers
- one Cat 9 light unit
- three Cat 16 command vehicles
- five dozers
- three helicopters.

An indirect strategy continued until the fires broke containment lines late on 17 January, and further still on 18 January. Vehicle resources increased from 36 firefighting vehicles on 12 January, 54 vehicles on 15 January, 59 on 17 January, 49 on 18 January through to 85 on 20 January and on 30 January, when predictions were for an even more severe day than that experienced on 18 January. Aircraft numbers increased from three on 11 January to 10 on 12 January and 15 on 17 January. Dozer numbers increased to seven on 16 January, although the number fluctuated on a daily basis.

On 12 January the 36 vehicles deployed were to cover control lines totalling 43 kilometres; on 17 January the 59 vehicles in place were to cover a perimeter of 90 kilometres. These calculations do not analyse the type of vehicle: some were command or support vehicles that carried no water. Since the approach adopted was indirect attack, the vehicles and crews were there to initiate back-burns and to ensure that control lines were maintained. The success of this operation was reliant on the area within the control lines being burnt out before severe weather arrived.



1 Source NSW Rural Fire Service.

In an effort to achieve thorough burning within the control lines, use of aerial incendiaries was planned from 15 January, but this approach was not particularly successful. Their use was postponed on 16 January because of a lack of incendiary devices and ceased earlier than planned, on 17 January, due to 'increasing winds, erratic fire behaviour and deteriorating flying conditions'.[8]

While the NSW Rural Fire Service declared the fire 'contained' on 17 January, it was still burning large areas of fuel within the containment lines and, with the extreme weather conditions that followed, could not be restricted to the designated area.

Being located north-west of Canberra, the fire became a major threat when it broke the containment lines on 17 January. Because of the prevailing winds, the fire advanced directly into the Uriarra pine plantation, just across the border.

It appears to the Inquiry that this major fire later fused with the Stockyard–Bendora fire, and possibly the Broken Cart fire, contributing to the firestorm that hit Canberra's western suburbs.

The CSIRO and others are still researching the precise nature and circumstances of the fires, their paths and confluence and how that influenced the exceptional fire behaviour experienced over the course of the day. Comments made to the Inquiry referred to this convergence of fires across an area containing significant fuel sources, which, combined with the extreme weather conditions, helped to produce an extraordinary event with some unique fire behaviour, including intense, destructive local windstorms.

Ultimately, the containment effort was unsuccessful, despite the considerable resources applied.

Notes

1 Bureau of Meteorology submission, p. 24.

2 ESB submission, p. 129.

3 NSW Rural Fire Service Operations record, p. 5.

4 ESB submission, p. 132.

5 ibid.

6 NSW Rural Fire Service, incident controller's report, p. 5.

7 ibid.

8 ibid., p. 10.

Phase Three: 19 to 30 January

Day 12: Sunday 19 January

By Sunday 19 January it was clear that there was an urgent need to move from response to recovery, despite the fact that a serious threat remained, with severe fire weather continuing. A balance had to be struck between ongoing preparedness and recovery.

A state of shock permeated the ACT community.

As the ESB submission put it, the scale and impact of the fires were 'well beyond anything seen before in the ACT'.[1]

The minutes of a meeting of the Management Executive[2] on 19 January show that the ACT Chief Police Officer proposed that he become the 'Recovery Territory Controller' in charge of recovery operations and that the Chief Fire Control Officer would remain 'Territory Controller for management of fire operations'. The proposal was endorsed by the committee, and recovery functions began operating out of the Winchester Centre in Belconnen. The actual recovery processes had begun even before the fires hit Canberra; for example, preparations for the establishment of the evacuation centres had begun on the Friday afternoon. The formalisation of the management arrangements endorsed by the Management Executive meant that the arrangements supplanted the ACT Emergency Plan's Community Recovery Sub-Committee, but they nevertheless worked effectively.

For practical purposes, command and control was now split along functional lines of response and recovery. Although the ACT Emergency Plan provides that the Police Operations Centre is to become the Territory Emergency Operations Centre, both the Police Operations Centre and the ESB command centre had separate functions and each retained a media responsibility. Further comments on the emergency management arrangements appear in Chapter 6.

Notes

1 ESB submission, p. 134.

2 The section dealing with the Emergency Management Act in Chapter 6 provides a more extensive analysis of the management arrangements after a state of emergency has been declared.

Days 13 to 23: Monday 20 January to Thursday 30 January

Between 20 and 30 January response activities continued, in the form of communication with the public, continuing operational deployment of resources, and a high level of coordination with other agencies.

Extensive advice and other information for the public was conveyed through the media, Canberra Connect and the ESB website. Daily teleconferences were held with NSW Rural Fire Service fire control centres at Queanbeyan, Yass, Cooma and Tumut.

Operational resources were deployed as follows:

- ACT Bushfire Service crews were sent to the south of Canberra, together with *Firebird 7* to help with fire suppression, asset protection and construction of containment lines.
- The NSW Fire Brigade and ACT Policing, under the direction of the ACT Fire Brigade, began a systematic search of fire-damaged houses, looking for possible victims and to ensure the safety of structures.
- ACT Aviation Fire and Rescue appliances provided support to the ACT Fire Brigade.[1]
- Heavy plant (mostly graders) was used to establish containment lines around the west and north of Belconnen.

The continuing threat led to the Medical Emergency Coordination Centre at Curtin developing extensive plans for the evacuation of nursing homes and respite care facilities in Belconnen. It finally closed on 30 January. The Ambulance Service of NSW continued to provide support to the ACT until 29 January.

The weather conditions predicted for the weekend of 25 and 26 January were even more severe than had been predicted on the previous weekend. Fortunately, however, the precautions that had been taken and the efforts made to suppress the fires during the preceding week proved sufficient to protect the city from further loss.

By Tuesday 28 January it was evident that the immediate threat to Canberra had passed and the Chief Minister revoked the state of emergency. Other demands remained, though, and on 29 January Michelago in NSW was threatened and six ACT appliances were deployed in support of the NSW Rural Fire Service.

Notes

1 An offer to make these appliances available for use on 18 January was not taken up because of what the ACT Fire Brigade Commissioner described as an oversight at the time due to other operational pressures.

The contributions of so many

During the course of the Inquiry the level of commitment to public safety and the sense of community, on the part of both public and private members of the ACT community, became very evident. The Inquiry wants to acknowledge this, even though it is impossible to recognise the efforts of everyone involved.

While firefighters choose to, and are expected to, confront and fight fires, the sustained efforts of the members of the ACT Bushfire Service, supported by ACT Emergency Services, require particular mention. The success of campaign fires is dependent on the efforts of large numbers of rural firefighters. In the ACT they are assisted by dedicated Emergency Services volunteers, who provide extensive logistic support. Fighting fires in summer is hard, hot work. The ACT should be proud that what is essentially a city–state has a significant number of citizens prepared to volunteer their time over a sustained period and place their lives in danger to protect their community. Volunteering reflects special values in any community, and the ACT is a richer and safer place for their efforts during a harrowing summer.

Our urban firefighters also made contributions, both within the city and further afield, beyond what would normally be expected. Those few crews facing the full fury of the fire front in Duffy will never forget the experience, let alone the indignity of a destroyed pumper. The crews (both urban and rural) providing structural protection at the Lower Molonglo Water Quality Control Centre faced extreme risks in an isolated area, with failed equipment and little external support, and ultimately succeeded in protecting vital plant that if destroyed, would have created a very serious environmental hazard. Their efforts were exemplary.

While this surreal event evolved over much of January, urban fire crews remained ready to provide the local, daily protection and response for our homes and city, as they do throughout the year.

The ACT Ambulance Service was a quiet achiever throughout the emergency. Initially, it assisted with the coordination of the Snowy Hydro Southcare helicopter, as it became a significant contributor to water-bombing efforts. Ambulance crews were deployed in the mountains to support firefighting crews throughout the emergency. On 18 January the Ambulance Service experienced its busiest day on record. Emergency medical evacuations, together with the relocation of aged and frail community members, meant that on that day crews went about their duties in very hazardous conditions, receiving little public recognition. The efforts of ambulance officers, on and off duty, in assisting the public drew much favourable comment.

All this activity was coordinated by ESB. The staff at Curtin were placed under extreme pressure in an inadequate facility. They worked valiantly over a number of weeks, before, when and after the fires hit Canberra, with little if any respite.

ACT Policing played a crucial role, too, retaining a presence in the most threatened areas, attempting to warn isolated and urban communities alike, often working in isolation, and rescuing numerous citizens with little concern for their own safety. Despite some problems with the difficult question of evacuation, Police helped many residents defend their homes from the fires, they directed traffic when large numbers of vehicles were departing threatened suburbs, and they subsequently provided high-profile patrols in all affected suburbs to protect community and personal property. They were also instrumental in coordinating the initial recovery effort, which led to the rapid restoration of many utilities and ongoing support for emergency services personnel who continued fighting the fires.

> All of the staff I communicated with in the ESB Control Centre during the fires did try and provide as much advice and assistance as was possible on the end of the telephone line. It must have been very difficult for them to have to tell people...that there was no assistance available to them.
>
> - Tharwa resident

Numerous government departments from both the ACT and the Commonwealth contributed to the disaster response and recovery effort with speed and professionalism. The Defence heavy plant drivers and aircraft pilots performed under extreme conditions. A vast range of public servants in the ACT Government responded with no notice to assist in re-establishing government services and functions. Canberra Connect provided an outstanding service, and the Recovery Centre is being heralded as 'best practice' in such circumstances. The health and medical profession responded magnificently and handled record numbers of people seeking assistance on the day. Government managers and officers who initiated services and gave advice are far too many to list, but all contributed to a better response and a quicker recovery. Numerous contractors were prepared to provide additional services or make personal contributions beyond what was required or expected. When the Inquiry visited interstate bodies, it heard comments about the surprising speed with which Canberra re-established its essential services and administrative systems.

Then there were the unofficial heroes, presenting themselves in so many ways—the numerous businesses that donated the time of volunteer emergency service workers or delivered free of charge goods and services, particularly food, to the emergency response and the subsequent recovery effort; those neighbours, often not known or identified, who by remaining to protect their property also saved others nearby; children who took extraordinary risks saving horses and other animals; individuals who made the effort to carry out large and small acts of kindness, simply to support others and acknowledge their compassion for victims...

The event was a terrible experience, and it is seared into the memory of so many in the ACT; but like so much in life, it also highlighted the huge capability of human endeavour under pressure and the healing capacity of the human spirit.

How the authorities handled the fires and informed the community: an appraisal

Fire behaviour in northern NSW during the winter preceding the 2002–03 bushfire season signalled unusual conditions associated with the prolonged drought. Firefighters had one of their busiest winters. During the period there had been a series of fires that were difficult to hold behind containment lines: they kept spotting over. This was a consequence of the combined effects of high fuel loads and the extreme dryness of the fuel.

Fire authorities further south would have known about the experience in northern NSW and would have been expecting very trying conditions as the focus of the fire season moved south with the approach and onset of summer—a normal seasonal pattern. ACT authorities should have been aware that bushfires, when they inevitably emerged, would be very difficult to extinguish once they gained a hold and that on unfavourable days the risk of spotting would be considerable where fires were in an area with high fuel loads.

These circumstances ought to have alerted authorities to the absolute importance of trying to put out any fires as quickly as possible, when they were small, especially if they started in locations where there was a major risk of wildfire developing.

I am not convinced that the ACT authorities' response during the first two days (8 and 9 January), when the fires were most amenable to extinguishment, reflected the sense of urgency that in my opinion should have prevailed. I reached this view on the basis of the following factors.

The extent of the initial call-out to bushfires in the ACT is determined by the Bushfire Service, according to a graduated scale based on the prevailing weather conditions. The graduated response makes no allowance for the nature of the fuel load. There was a total fire ban on 8 January. Accordingly, a standard response at the top end of the scale occurred, although the number of units called out actually fell marginally short of that specified for the response. There was no addition to this minimum response level to allow for the fact that fuel loads in the mountains were known to be very high and extremely dry. All the accepted dryness indicators on 8 January gave either maximum or extreme readings, depending on their scale.

When the crew arrived at the site of the Bendora fire, at about 6.00 pm, efforts were made to put the fire out with the assistance of water bombing by the Snowy Hydro Southcare helicopter, but as evening approached the incident controller concluded it was not advisable to continue fighting the fire overnight. The headquarters of the ACT Bushfire Service was consulted and it supported this decision. As noted, the incident controller's judgment was influenced by the possible danger to the crew, the unfamiliar terrain, potential fatigue of the crew, and doubt about adequate rationing.

The crew assigned to the Stockyard Spur fire was able to drive to within 4 kilometres of the fire; crew members then began walking but, because of overgrowth, were unable to locate a track leading to the site. The incident controller was in contact with an observation helicopter, which informed him that he was about an hour's walk from the seat of the fire. After reporting back to headquarters, the incident controller was advised to return to Canberra. The crew was about an hour's drive beyond the Bendora fire, which they passed on their return journey. Had it been decided to keep personnel at the Bendora fire, the crew returning from the Stockyard Spur fire could have been re-assigned to Bendora to double the numbers on the fire ground. Alternatively, the Stockyard Spur crew could have attempted to deal with the Gingera fire, which was burning about 6 kilometres further south, along the Mount Franklin Road. Neither of these options was pursued.

It is common practice to fight bushfires in mountain country overnight, when in some respects conditions are often easier than during the day. Wind strength and temperature are invariably lower, the moisture content of the air is usually higher, and it is easier to see where fire is burning. Firefighting in rough country often involves arduous physical effort, particularly when hand tools are needed to clear and build firebreaks. At night conditions

are often more comfortable than during the day for this work. These factors offset to some degree the difficulties created by lack of light.

I visited the Bendora site, and I acknowledge the challenges facing the fire crews, the ignition being on the side of a hill with undergrowth and rocky outcrops. However, after discussing with the Chief Fire Control Officer the nature of the hazards present, I am of the view that it would have been practical for crews to stay and attack the fires. In particular, had the number of personnel on the site been augmented by the crew returning from Stockyard Spur or others that were available in Canberra, the prospect of making some impression on the fire would have been improved.

The Bendora incident controller noted safety as influencing the decision not to stay to fight the fires overnight: I respect the controller's judgment in this regard, and I accept that the safety of personnel under command is a very important consideration. Nevertheless, the nature of the hazards that made it unsafe to remain and fight the fires overnight ought to have been clearly described and independently assessed in discussions with more senior staff at ACT Bushfire Service headquarters. I am unconvinced that this occurred. The transcript of the radio communication between the incident controller and the Duty Coordinator at Curtin contains no reference to safety issues having been raised. I believe, on this basis, that the decision to withdraw and return to Canberra was confirmed by Bushfire Service headquarters without safety factors entering into the consideration. Having regard to the potentially significant implications of failing to take full advantage of the opportunity then available, the lack of rigour in not fully testing the incident controller's conclusions was a serious error on the part of headquarters. In hindsight, the manner in which the decision not to remain fighting the fires was taken must therefore be regarded as seriously flawed.

While heavy plant—ACT Forests had both a D7 and a D9 dozer—was used in the Uriarra forest from 8 January, such equipment was not immediately available for the Bendora and Stockyard fires. Had heavy plant been available for deployment to the two sites on the evening of 8 January or on the following morning, the situation would have been different. But it was not until the afternoon of 9 January that the Bendora controller asked for this assistance, and it was not until the third day that plant arrived on the scene. This delay was a consequence of the need to obtain the services of a plant contractor; further time was lost because it was necessary to work on overgrown sections of the access tracks to the fires.

On Day 2, two helicopters were used for water drops. Considering that efforts were being made to deal with fires at three separate locations in the ACT—and considering the limited impact they had had on Day 1—every possible effort should have been made to obtain additional aerial assistance from outside the Territory. Although approaches were made to the NSW Rural Fire Service and commercial aerial charter firms, there is some doubt that enough was done at this critical stage. In fact, it was not until 13 January that Navy helicopters supplied through Emergency Management Australia arrived to strengthen the aerial suppression efforts.

The Stockyard Spur fire was reached at mid-morning on 9 January by remote area firefighting teams, after difficulty had again been experienced in getting to the site. Because of access problems and the related safety concerns, the fire was not attended overnight. Nor was it attacked on the ground the following day or night: a higher priority had been assigned to the Bendora fire. Heavy plant was used at Stockyard Spur on 11, 12 and 13 January to clear access tracks and construct firebreaks, but no ground crews were allocated: the Bendora fire continued to have priority. On 14 January the Stockyard Spur and Gingera fires merged and began to spread.

Little had changed by 15 January, a week after the fires had begun. The Stockyard and Gingera fires had been subjected to extremely limited direct ground attack since the time of ignition, although there had been some attack from the air, albeit of limited effectiveness.

Redeploying resources from one fire front to another when a series of separate fires are burning makes sense only as a very temporary strategy—for example, tackling a break-out, to help hold a containment line, or as a means of rationing the use of limited resources. During the early days of the fires, there were resources in reserve in the ACT that could have been deployed in an all-out effort to gain control of the fires, and assistance could have been sought sooner from NSW and Emergency Management Australia. When this external support was sought at a later stage—given the expansion of the fires—the possibility of putting them out was a much more remote prospect.

No effort should have been spared during the first two days, when the fires were of very limited size and most amenable to extinguishment. In my opinion, the ACT authorities did not respond as aggressively in this vital period as they should have.

Although I acknowledge that the firefighters faced some access problems at Stockyard Spur, the responses to all the fires in the first few days present a

picture of a measured approach to a threat that was growing on a daily basis—as opposed to an all-out attempt to beat the fires from the outset, using every resource at the ACT's disposal.

On Day 3 it was decided to cease direct attack on the fires since efforts to extinguish them in this way had been unsuccessful; a containment strategy (indirect attack) was adopted instead. While the Inquiry does not question the appropriateness of this decision, it did mean that, given the dryness of the hills and the fuel loadings, for practical purposes the only way the fires could be completely extinguished would be as a result of either a change in the weather, bringing rain, or a change in the wind direction, putting the fires on a path that did not threaten rural properties and the urban edge of Canberra. Although indirect attack can, and does, put fires out, the extreme drought conditions increased the likelihood that areas burnt would rekindle and flare up and that embers would restart fires even days later.

These factors suggest that there should have been limited confidence that back-burning would be successful in this instance. First, the long-range forecasts were predicting no respite from the drought: no rain was in sight. Second, although at the time the winds were blowing from the east and directing the fire away from the ACT, a wind change to the north or north-west was only a matter of time given normal weather patterns. When the wind change did arrive, as happened on 17 January, the fires would inevitably change direction and be driven towards Canberra.

The commitment and personal endeavours of the firefighters and others supporting them in the field over the period of the fires deserve the highest praise. But from Day 3 on they were fighting an increasingly difficult battle: the fires grew every day and containment lines were progressively breached, forcing the fire crews to fall back further and further.

It might have been thought that the fires could eventually be contained and extinguished when they reached the large areas of open pasture in the Tidbinbilla Valley and between the Murrumbidgee River and the western fringe of Canberra. This country had very low levels of fuel, having been cleared for agricultural use and because the pasture fodder had mostly been eaten by stock during the course of the drought. Such an expectation would have been reasonable in normal circumstances, but in the face of a fire front fanned by the extremely strong winds that developed on 18 January, this natural protective barrier proved of little value.

The ACT authorities' attitude seems to have been one of dogged optimism that the fires would eventually be brought under control, an expectation based on past experience rather than acknowledging the particular hazards of the 2002–03 fire season. In my opinion, the tendency to view the situation from a 'best-case scenario' perspective had the effect of understating the risks of a less favourable outcome. I consider that this contributed to the fact that the information ESB released to the public was slanted towards reassuring the community about progress being made, instead of giving a more sober and realistic estimation of the dangers that might lie ahead.

There is a good deal of evidence of special preparations under way on 17 January to prepare for a difficult situation the next day, yet this information was not shared with the community in an open and frank way that would have allowed the city and surrounding areas to be better prepared. Although no one could have accurately predicted the speed and ferocity of events on the Saturday afternoon, there were ample signs that the urban area was likely to be under serious threat, even if the more optimistic observers still thought the primary threat was to the rural properties west of the city.

Almost all the information released to the community through the media was factually based and retrospectively focused on what had happened or had been achieved. It thus did not help the community to understand what might happen under a worst-case scenario, which would have been more useful as a warning to the city to be prepared. Only as the fires were approaching the outskirts of Canberra, early on Saturday afternoon, did the focus switch to warnings; by then it was too late for many people to be informed and adequately prepared.

The Chief Minister's declaration of a state of emergency at 2.45 pm on 18 January was basically a response to arguments that special powers of evacuation were needed to allow police to remove people from threatened areas when directed to do so. Although the declaration had the important immediate and beneficial effect of accentuating the critical situation facing the city, it subsequently served to add a degree of confusion and uncertainty to the event. This was because it concentrated media attention and public interest on the possibility of evacuations, when ESB was continuing to encourage able-bodied people who felt confident and well prepared to remain at their residences.

The emergency warning siren was meant to be broadcast from 1.45 pm at regular intervals following the issue of an ESB media directive. This was not effective, though, because the public had been poorly informed about the meaning and purpose of the warning and because there were problems with distribution of the directive to the media.

During 18 January the pace of events also increased sharply at ESB. About 330 personnel were fighting the fires in the hills and pasture country to the west of Canberra. A very high volume of communications traffic was flowing into and out of the Curtin headquarters, but as the day progressed there was a significant build-up in the number of calls from the general public. This tested the communication centre's capacity since it could not easily separate operational from non-operational traffic. Although Canberra Connect played a very important role in taking pressure off Curtin, it did not solve the overload problem, which became acute in the afternoon. This interfered with the flow of information to the public as well as being a most undesirable development from the standpoint of controlling and managing operational resources in the field.

When the ESB headquarters facility began losing power at about 4.30 pm as a result of fire damage to power lines, emergency power was used for the communications centre but other activities at Curtin were affected until power was restored several hours later.

The difficulty of managing the event as its seriousness escalated revealed major deficiencies at the Curtin facility, which proved quite inadequate for handling the complexities of an operational activity of this scale. The controllers did their best, hampered by technological and physical limitations.

It must also be recognised that, even without these limitations, the smoke created by the fires themselves made it extremely difficult to maintain an accurate picture of the movement of the fire front and the exact deployment and status of the ground crews.

Criticism should not be levelled at staff at ESB for the loss of control and confusion that occurred at the height of the fires during the afternoon of 18 January. They were battling against impossible odds and, despite being completely overwhelmed, they struggled on. As the fires began to abate later in the day, some sense of control returned to the operation, but it was not until the following morning that the full extent of the damage became apparent.

There were many reports of heroic actions by bush and urban firefighting personnel, police, ambulance and emergency service workers as the fires hit the city. They were hopelessly overwhelmed, but they did more than could have been expected of them. Many individual citizens also felt confident in their capacity to stay to protect their own and their neighbours' properties despite the severe conditions. The efforts of those who contributed during the greatest challenge Canberra has ever faced are a credit to all concerned.

That so few people were killed or injured also deserves high praise. Although, very sadly, the lives of four members of the public were lost, a helicopter pilot suffered serious injuries having crashed into Bendora dam, and members of the public suffered serious burns and other injuries, the fact that there were no serious injuries incurred by the hundreds of firefighters who fought the fires for over three weeks, assisted by the police, emergency service and ambulance workers, is remarkable. That there were no life-threatening injuries to members of the public from road accidents on 18 January is equally remarkable, particularly when there was so much movement immediately before and as the fires moved into the city. Had the road infrastructure been less adequate, the result might have been very different.

Almost as quickly as the fire front passed, a little later in the afternoon the weather changed for the better and conditions began to ease. The fires did, however, continue well into the night.

Execution of the recovery process was a significant achievement for the authorities. Over 5000 people were temporarily without accommodation, and the recovery centres, which had been in preparation since the previous day, coped well with the large influx of people. Hospitals and ambulance services were extremely busy during the day and evening, treating record numbers of patients. The Canberra community responded magnificently, swamping the recovery centres with food and provisions and offers of help. Generous contributions also began coming through from elsewhere in Australia.

The threat from the fires was not over, of course, and for the following week activity remained intense as the fires continued to cause concern for the city's northern suburbs. With the experience of the previous week behind them, citizens were much better prepared, as were the authorities, particularly in terms of public information, media liaison, and the identification and state of readiness of areas that continued to be threatened. The weather conditions were as extreme as predicted but the preparations made and the fire-suppression efforts during the week allowed the weekend to pass without further loss of life or damage to property.

3 The public submissions: a summary

(A summary of submissions to the Inquiry from members of the community and some interested organisations)

The Inquiry's terms of reference were published in the *Canberra Times* on 22 February 2003 and members of the ACT community were invited to present submissions. Initially a deadline of 31 March 2003 was set for receipt of submissions, but through public comments the Inquiry made it known that submissions would continue to be received throughout the term of the Inquiry.

The Inquiry received over 130 written submissions. It also had discussions with a number of individuals and representatives of particular groups who sought to expand on the matters raised in their written submissions. In addition, some people chose to discuss their concerns directly with the Inquiry, rather than provide a written submission.

The majority of submissions were from people drawing on their personal experience (and that of friends, family and neighbours) of the events leading up to and on 18 January. A number of submissions were also presented by individual firefighters and emergency service volunteers.

The submissions raised many matters for consideration. In keeping with the Inquiry's purpose of identifying lessons that might be learnt from the event, many people put forward suggestions aimed at augmenting the ACT's capacity to respond more effectively to large-scale emergencies.

The Inquiry also had the opportunity to review comments made by the ACT community in other public forums—including the print and electronic media and publications such as *How Did the Fire Know We Lived Here?*[1]—and in some submissions presented to other reviews.

The main issues raised in submissions to the Inquiry are summarised in the rest of this chapter, generally under headings that correspond with the terms of reference. Many of the submissions were relevant to matters discussed in depth in the report. Some are dealt with in Chapter 2, some are dealt with in the chapters that follow. However, others, particularly those dealing with individual situations that occurred in the course of the fires, could not be investigated by the Inquiry, whose examination was essentially directed at systemic issues. This chapter does not test or analyse the comments made; it merely summarises what the Inquiry was told. Inclusion of comments in this chapter should not be taken to imply that the Inquiry agrees with or has accepted the validity of the comment. The fact that someone holds that point of view is nevertheless

worthy of note, since all the matters raised helped the Inquiry gain a greater understanding of the multiple and differing effects an event of such magnitude can have on the lives of those exposed to it.

Risk management and planning

Submissions questioned the level and adequacy of the Emergency Services Bureau's risk management and planning before 18 January in anticipating whether and when the fires might move out of the mountains and affect the city and its immediate surrounds. Submissions queried whether the seriousness of the threat from the mountains was recognised early enough—particularly given the extreme weather and drought conditions—and whether the bushfire authority and ESB management had undertaken adequate contingency planning.

Submissions also queried whether any lessons had been learnt from the 2001 Christmas fires and, if so, what measures had been taken to better prepare emergency service agencies, land management agencies and the community generally for another significant bushfire threat.

Submissions questioned the adequacy of overall emergency planning in the ACT—especially the need to test plans through exercises, so that authorities do not become overwhelmed by an event. It was noted that no large-scale exercises on dealing with a major bushfire threat to the city had been conducted. Other comments related to urban and rural firefighters' ability to deal with fires on the urban fringe, given their specialised training in either property or forest and grassland fires. At a general level, respondents called for a comprehensive approach to bushfire risk planning, involving emergency service agencies, land managers, and people with past experience in fighting fires in the forests and mountains.

Organisational preparedness for the bushfire threat

Discussion of fuel management in ACT parks and forests was an important part of many submissions. The comments reflected the wide and complex debate about management of fuel loads on public lands—including the use of and constraints on hazard-reduction burning and the implications of policies and practices associated with the maintenance of parks for ecological sustainability, biodiversity and other environmental purposes. Submissions queried whether any lessons had been learnt about excessive fuel loads in ACT forests influencing the severity of the 2001 fires.

The level and appropriateness of resources applied to managing ACT public lands generally was questioned, as was the practical value of planning documents such as the ACT Bushfire Fuel Management Plan[2] in enabling agencies to prepare for a bushfire threat. People also disputed the adequacy of the program of grass mowing and tree pruning around the urban edge and of the maintenance of bush areas inside suburbs.

Some submissions concluded that government land managers should adopt more active fuel management practices. Calls were made for an urgent review of the fuel management plans for national parks, river corridors, forests and nature parks. Suggestions were made for the introduction of an annual audit or reporting process to focus on the level of fuel build-up on public lands. A number of submissions emphasised that people with longstanding experience of and familiarity with these areas should be directly involved in the development of management plans.

Some submissions on fuel management were associated with wider planning concerns about the placement of parks and forests close to the suburban edge and the problem of urban encroachment on buffer zones on the outskirts of the city adding to the bushfire risk. Some submissions suggested that stronger building regulations are needed for bushfire-prone areas.

The related subject of fire trails and firebreaks around property and assets was raised in submissions from firefighters and residents alike. There were calls for an urgent review of the maintenance program and access arrangements for fire trails in the ACT's parks and forests. The need for more comprehensive and up-to-date maps of the firefighting trail system was also raised.

In relation to operational preparedness, the comments in submissions focused on the adequacy of fire-suppression organisations to combat major fires in the ACT. Submissions claimed that there has been a serious deterioration in suppression preparedness in the last 10 years: firefighters and officers are being subjected to a significant amount of theoretical training but commensurate priority is not being given to practical field-based training; officers and firefighters are being discouraged from using their initiative; and bushfire management is being determined by budget considerations, which has limited the capacity to deal with large, occasional events.

A number of experienced bush and forest firefighters questioned in submissions the view that the fire on 18 January was an unpredictable, one-in-100-year event. They cited the history of bushfires in the ACT as evidence that a major

conflagration was inevitable. In addition, they criticised the level of planning to predict an impact on the city edge, as well as the strategy for deployment of resources in the early days of the event.

Some submissions commented negatively about the loss of experienced firefighters from government land management agencies. In their opinion, the 'downsizing' of ACT Forests' workforce in the mid-1990s resulted in a significant reduction in the number of people with first-hand knowledge of the mountains. More importantly in their view, it reduced the Territory's specialist firefighting capability, especially for quick-response and remote area firefighting. These submissions contended that the ACT has moved from a highly trained and experienced paid strike-force capability to a situation of reliance on volunteers who are not as familiar with the mountains. Further, it was proposed that the policy of reduced hazard-reduction burning in the parks and forests has greatly limited the opportunity for departmental and volunteer firefighters to gain skills in dealing with fires in forest and mountain areas.

The response

Many submissions acknowledged that the ACT's resources were completely overwhelmed by the severity and scale of the fires on 18 January. They paid tribute to the heroic efforts of volunteer, departmental and paid firefighters in the face of conditions on the day. Nevertheless, there was much comment about the authorities' inability to contain or suppress the fires in the period leading up to 18 January. Questions were asked in submissions about the strategy used to combat the bushfires—whether there was a lack of urgency because authorities were used to relatively small bushfires and not simultaneous fires; why the known level of fuel build-up in the parks and forests did not ensure a larger initial and direct response, particularly given the benign firefighting weather experienced during the first week after the lightning strikes; and why suppression activities were not undertaken during the first two nights of the campaign, on 8 and 9 January.

Resource deployment attracted considerable comment. Submissions from residents in the worst-affected suburbs and in some rural areas noted a lack of firefighting personnel on 18 January and wanted to know where resources had been deployed. Many felt they had been left on their own to fight the fires. Experienced volunteer bushfire fighters questioned the amount of resources deployed in the first days of the campaign; urban firefighters thought they were not adequately warned of the fires' potential impact on the city; and emergency

service volunteers felt they were seriously under-exploited in the support roles for which they are adequately trained.

Submissions suggested that a collapse in command and control systems in the latter days of the campaign adversely affected ESB's ability to respond to the fires. It was suggested that some resources remained idle in depots or were under-utilised; others could have been more effectively deployed elsewhere. Further comments dealt with operational communications problems. Difficulties with the immediate availability and use of heavy machinery and aerial firefighting resources and with the timing of requests for interstate and Commonwealth assistance were also raised. In relation to aerial resources, the Inquiry received a number of submissions from aircraft suppliers who were promoting the advantages of aerial fire bombing in putting out or suppressing fires in rugged terrain and heavily timbered areas.

ESB's management structure and command and control arrangements

Criticisms were made in submissions of the command and control relationship on 18 January between the ACT Fire Brigade and ESB. Problems with the interaction between the urban and bushfire brigades were also highlighted-incompatible communications systems and a perceived general reluctance on the part of some urban brigades to adhere to the Standard Operating Procedures in liaising with volunteer personnel at an incident. (The SOPs state that, when the two services are operating together, urban fire brigades are to use the designated bushfire radio frequencies for communication.)

Personnel in the bushfire service commented in submissions on differences in the command and control philosophies of the ACT and New South Wales bushfire services. They perceive that incident control system arrangements in New South Wales are more aligned to the national approach, with bushfire brigade captains maintaining greater operational independence and responsibility than in the ACT, where brigades are commanded centrally and are individually tasked by ACT Bushfire Service headquarters.

Submissions from volunteer bushfire brigade members also reflected problems with organisational arrangements and believe that volunteers are seen by some as 'free labour'. These submissions also claimed that conditions imposed on them by the ACT Bushfire Service have significantly degraded morale—for example:

- brigade funds being pooled as the property of the ACT Government

- the introduction of mandatory fitness tests, making it difficult for some experienced rural landholder members to continue as volunteers
- compulsory medical and police checks on all new members and on those changing from one brigade to another, which are seen as an imposition on members
- overly centralised control and tasking
- no input from brigades on equipment purchases
- the removal of bushfire service radios from private vehicles and of pumps and tankers from rural landholders, which has increased their isolation.

Submissions from ACT Emergency Service volunteers also expressed a number of concerns about the management of their units under the ESB structure. Of particular note is the perceived loss of identity of the ACT Emergency Service and the difficulties experienced with a unified management arrangement with the ACT Bushfire Service. Comments also highlighted the need for better coordination and interaction between all units in ESB, including combined training opportunities and sharing of information on roles and responsibilities.

A second area of general comment on ESB's organisation and management structure raised in submissions concerned the role of the ACT Bush Fire Council. It was claimed that the transfer of the ACT Bushfire Service from the land management agencies to ESB in 1992 resulted in a change in emphasis, away from fire and fuel management and towards response. This was compounded in 1996, when the Bush Fire Council surrendered its lease of 16 500 hectares in the west of the Brindabellas.[3]

Submissions argued that the Bush Fire Council's statutory responsibility for management of operational bushfire matters has been diminished. It was suggested that the Council's focus is now on establishing and maintaining links between a broad range of groups and individuals associated with bushfire management in the ACT. Submissions recommended that the *Bushfire Act 1936* be amended to establish single legislation on bushfire administration and to reflect the Council's redefined role as an advisory body. Submissions suggested amendments should also be made to reduce the maximum membership of the Council to eight or so members plus deputies, to specify that members are drawn from outside the public service, and to ensure that members are selected and appointed on the basis of expertise and knowledge of bushfire matters.

A number of submissions suggested that, in order to achieve optimum effectiveness, ESB should have a different position in the administrative structure: its current placement in a department concerned with law and justice is at odds with a culture of emergency threat and risk. Others suggested that ESB's inclusion in the departmental structure adversely effects its budget. A number of observations were also made about the inadequacy of ESB's premises in coping with aspects of the January emergency, especially power outages, media and communications facilities, and room for the scaling-up of personnel requirements.

Public information and communication

Comments in submissions on ESB's public information strategy fell into three categories: lack of early public information about the threat; the need for better public education on fire awareness and preparedness; and uncoordinated evacuation information.

The lack of early warning to the community about the fire threat was by far the greatest criticism expressed in public submissions to the Inquiry, and it was suggested that this starkly contrasted with the volume of information provided to Belconnen residents in the week following 18 January. Submissions indicated that they had observed increased activity by emergency service personnel from midday on 18 January—including road closures; for example, Cotter Road was blocked and fire personnel were in the area at 1.30 pm—and questioned why this did not prompt an immediate warning to residents.

Although submissions generally acknowledged the positive contribution of the media (particularly ABC radio) in informing the public on 18 January, there were strong criticisms about the inadequacy of only one radio station or medium broadcasting the emergency warning message. Submissions reflected that Canberra residents were unaware that the ABC would be the main provider of information in an emergency, and no information was provided on commercial radio networks until much later in the day. Many people submitted that they were at home watching television: no advice was televised about either the alert or the need to turn to ABC radio for more information.

Submissions reflected that the Friday and Saturday editions of the *Canberra Times* gave no indication of any imminent danger to the city, although some people did note that page 10 of the Saturday edition of the *Sydney Morning Herald* carried an alert that suburbs of Canberra should be prepared for evacuation. Some submissions described that, although Canberra residents were generally

aware of the fires in the bush, they relied on the absence of a specific warning and left their homes to travel to the coast or took refuge from the oppressive heat in cinemas and shopping centres, where they were indoors and unaware of changing conditions. Others continued their vacations interstate.

Submissions also commented about a lack of general understanding of the Standard Emergency Warning Signal. Some residents suggested that the Signal should have been supplemented by police sirens in areas of specific risk as an alert to residents.

Other comments in submissions referred to the lack of information about the position or direction of the fires: rural residents claimed they were not informed when fire had entered their properties, and people who were evacuating in the suburbs did not know whether they were driving into the path of the fire or away from it. The timing of media messages was another concern expressed, with the radio advising people to return to their homes and prepare to fight the fires as houses were burning. Submissions indicated that road closures were also wrongly reported, adding to the confusion, and information given out through hotline numbers was reported to be several hours old. It was suggested that some advice was also puzzling; for example, people followed instructions to fill their baths with water but did not understand the purpose. Some submissions noted that public information was also a problem during the 2001 fires.

The general feeling reflected in submissions was that public information was not adequately coordinated between the Police and ESB. Submissions indicated that people felt very strongly that they ought to have been able to rely on prompt, accurate advice and warnings on which to base their decisions. It was suggested that systems for collecting, collating and disseminating information should be well established and rehearsed with key agencies and the media. Useful suggestions were made for the implementation of a staged fire-alert warning system similar to cyclone warnings used in other parts of Australia.

Community preparedness

Many submissions noted the need for better public education on preparing for bushfire, especially for people living in rural areas or on the urban–rural interface. People acknowledged that heavy property losses were inevitable because of the nature of the fires but felt the losses would not have been so extensive had people been better prepared.

Submissions reflected that people generally considered ESB should emphasise that individuals have primary responsibility for preparing their property for a bushfire threat. Householders should be provided with information about minimising fuel levels around their homes and making homes more fire resistant; for example, many people observed that timber fences acted like fuses in the face of the fire front. It was proposed that they should also be encouraged to develop a fire plan and to have fire kits of appropriate equipment prepared—as well as be better informed about the role of emergency service agencies. Some submissions called for the introduction of strong penalties for not carrying out fire preparation tasks. Importantly, people felt that they should be well informed about how to deal with an approaching fire.

While many submissions relayed stories of successful property protection, others commented on the inability to adequately protect their property as a result of age or disability. Suggestions were put forward for better community support for people who are unable to cope in emergency situations; examples are the introduction of a neighbourhood fire prevention component to the Neighbourhood Watch scheme and the introduction of community fire units. The latter proposal would see local communities having access to hydrants and hoses and being trained in their use.

Evacuation

The most common criticism relating to evacuation on 18 January was the lack of a consistent message. Submissions reported mixed messages—public announcements advising people to stay with their homes and fight the fires if they were capable and prepared and, on the other hand, orders to evacuate from police on the ground.

A number of criticisms were made about the action of police in forcing evacuation by using the threat of arrest. Submissions claimed that police are not experienced in fires and are therefore unable to make informed decisions about the need to evacuate. They felt that the need for evacuation should be assessed by experienced firefighters and that advice should then be issued to the police to carry out evacuations.

Submissions claimed that police were not well trained in bushfire evacuation and increased the gravity of the situation by spreading alarm: people were made to leave relatively safe areas with no idea where to go and which roads were safe to travel on, with no idea where the fire was, and with poor visibility and traffic congestion impeding the firefighting efforts.

Some residents reported in submissions that they were ordered to evacuate just as they had managed to bring the fires burning around their homes under control. They felt that forced evacuation prevented them from responding to the fires and they believed fewer houses would have been lost had people stayed to defend their property. Indeed, there were many reports of houses being saved by residents' action as people stayed with their homes and suppressed fires that started from ember attack. Submissions reflected general support for the concept that residents should stay with their homes as long as they are well prepared and able to do so. Residents felt they had the right to make their own informed decisions about evacuation and should not be forced or be threatened with arrest if they refuse to leave.

People who, for one reason or another, were not prepared to stay with their property indicated in submissions that they should have had early advice on the need for evacuation. This included clear advice about the location of evacuation centres and what people should do once they arrived at the centres. Some submissions suggested that assistance for people who cannot self-evacuate—in particular, people with a disability and the elderly—should also be better coordinated. Most comments were closely linked to the need for early advice to the community about the threat and general public education about what to do in an emergency.

Submissions generally reflected that the evacuation centres worked well, although they were at times chaotic. There were suggestions for improvements to the registration process—in particular, the need for system linkages between evacuation centres and medical facilities (especially the hospitals) to help with locating people.

Coordination and cooperation between agencies

Utilities

Although some areas had adequate water pressure throughout the emergency, a number of submissions stressed that a loss of water pressure was a significant impediment to their firefighting efforts. Other hindrances mentioned included gas explosions and burning or melting garden hoses. Submissions suggested that public education on preparing for bushfires should include information about alternative water sources—for example, swimming pools and separate water tanks—in high-risk areas.

The lack of adequate water supply was a particular criticism in submissions from residents in rural areas. A number of rural residents submitted that their water supplies were diminished because they had been used to refill firefighting tankers. One submission indicated that in one rural settlement the water tank reserved exclusively for firefighting was not accessible. Other residents reported the loss of hose fittings, which rendered their firefighting equipment useless.

Inability to isolate the urban gas supply was also raised, and a number of submissions observed that gas meters were a significant fire hazard in the suburbs on 18 January. There were calls for clearer instructions at household meters on how to turn the gas off and for a better response by authorities in switching off the gas supply under emergency conditions.

Many residents acknowledged quick action by utilities in facilitating access to telephone services and in restoring power, water and gas services to affected areas after 18 January. The mobile telephone system's inability to cope with the emergency was noted in numerous submissions, and some people suggested that telephone and electricity cables should be placed underground.

Interstate coordination and cooperation

Difficulties with operational communications and a lack of coordination between NSW and ACT authorities were commonly reported in submissions. Operational personnel claimed that differences between ACT and NSW rural fire units' communication systems significantly hindered the firefighting effort; this included differences in radio systems and frequencies, unit call signs and signage, command structures, and communication protocols and procedures. There were also reports of communication difficulties associated with air support; submissions indicated that units on the ground could not identify air support elements because they carried no unit or call-sign markings.

Calls were made for greater coordination and cross-training between NSW and ACT bushfire units and for the development of a common bushfire control plan.

ESB's equipment, communications, training and resources

Communications

A number of submissions highlighted problems with operational communications—notably airwave congestion and the incompatibility of communication systems, including with the ACT urban fire brigade. ACT Emergency Services units reported difficulties with current arrangements

that see them sharing a radio channel with the ACT Bushfire Service. It was reported that it was necessary to resort to personal mobile phones for operational communications, a situation that was exacerbated by network congestion. It was urged that there be one channel dedicated to interservice communication.

Submissions reflected that congestion on the mobile and land telephone networks was also seen as a serious problem for the community trying to contact emergency service agencies. It was suggested that the communications system develop the capacity to scale-up for large incidents, with multiple lines and operators.

Equipment

Comment on the amount and adequacy of bushfire-suppression equipment was a feature of a number of submissions from operational personnel. A common criticism was the view that the ACT has reduced its firefighting capacity by no longer maintaining its own key physical resources for fire prevention and suppression—in particular, heavy tankers and bulldozers. Submissions indicated that there has been a reduction in the number of vehicles that can carry large amounts of water. It was also suggested that there has also been a reduction in the number of radios in privately owned and rural vehicles. There was a call for a complete review of the ACT's stock of bushfire-suppression equipment.

It was also noted in submissions that the ACT has extremely limited capacity in terms of aerial firefighting equipment—that is, agricultural-type aircraft or purpose-built fire-bombing aircraft and water-bombing helicopters. Questions were raised about Air Service Australia's rescue and firefighting resources at Canberra Airport that were not used.

Submissions contended that ACT bushfire units lack the best-practice protective equipment and systems currently being used by other bushfire-fighting agencies in Australia. It was asserted that the latest tankers to be purchased are poorly designed and equipped—with, for example, plastic door handles and fittings, rubber vacuum-brake lines, poorly designed storage areas for tools, and poorly located hoses. Similar problems were mentioned in relation to urban firefighting vehicles: the burnout of one fire appliance was allegedly caused by a fault in the appliance, which was known to other fire services. The adequacy of fire hydrants and water tanks for people living on the periphery of the nature parks was also queried.

ACT Emergency Services personnel questioned the supply and leasing arrangements for vehicles in their service, claiming that there are too few vehicles and that the leasing arrangements prevent customisation for equipment storage and to meet other needs.

Training

Training was raised as an area of difficulty in many submissions from fire and emergency service personnel. Among the matters covered were better training for emergency service personnel in basic firefighting and in setting up, maintaining and decommissioning staging areas to facilitate logistics support; training for ACT Emergency Service personnel in all aspects of the Public Safety Training Package; and more comprehensive across-the-board training for bushfire fighters in chainsaw operation, defensive structural firefighting, tanker driving and first aid. Many submissions said that programs used to be run in these areas but had been curtailed or had ceased. For urban firefighters, leadership was an important factor: no permanent district officer had been appointed in nine years.

As noted, many people felt that the ACT—and particularly the land management agencies—had lost personnel with experience in fighting bushfires, especially large mountain fires. Submissions suggested that the events of January 2003 highlighted the need to devise a means whereby experienced firefighters can be retained to provide advice to land managers and bushfire management and to mentor volunteers.

An important corollary to the provision of training is adequate funding. Operations personnel questioned in submissions the allocation of funding for training between different services. Calls were also made to expand the opportunities for more combined training with adjoining NSW bushfire brigades and between the different ACT emergency service bodies.

The need for better general training for people who live in fire-prone areas was linked to community preparedness.

Resources

As noted, there was considerable comment in submissions about the apparent lack of firefighting personnel in affected areas. Many people agreed, however, that there would rarely be sufficient resources on hand to deal with the multiplicity of outbreaks of fire in times of severe bushfires. It was suggested that if resources are stretched it is necessary for members of the public to defend their own homes, but this will be successful only if the community is properly prepared and has received early and clear advice on the nature of the threat.

Operational personnel directed particular criticism in submissions at the lack of high-quality, detailed maps of the ACT and surrounding areas and of access areas, trails and firebreaks in parks and forests. It was also suggested that volunteers with sound local knowledge should accompany outside units deployed in the area and that global positioning equipment should be fitted to all emergency vehicles, including private vehicles that are routinely used as part of an emergency response. A number of submissions—especially from emergency service volunteers—spoke of the need for stronger operational procedures, including enforcement.

Comments by the key representative groups

The Inquiry received submissions from a number of constituted groups representing fire and emergency service operations personnel and from the major rural leaseholder group. The bodies concerned agreed to the following summaries of their submissions being included in the report.

The United Fire Fighters Union

The United Fire Fighters Union (ACT Branch) provided a brief written submission and a two-hour interview to the Inquiry and raised a number of matters in the local press.

The administrative arrangements under which the ACT Fire Brigade has been operating in recent years have changed the intent of the reporting lines in the Fire Brigade Act. The UFU recommended that the Fire Brigade should comply with the Act. The UFU believes that only ACT Fire Brigade members should have command and control of all firefighting resources within the built-up area. It was claimed that various equipment, communications, training, leadership and management issues contributed negatively to the ACT Fire Brigade response to the fires. Specifically, it was claimed that the limited performance of the ACT Fire Brigade was the result of poor ongoing management by ESB. Furthermore, the Union believes that control of the fire event should have passed to an ACT Fire Brigade Incident Management Team once the fire reached urban Canberra.

The Volunteer Brigades Association

The submission from the Volunteer Brigades Association provided general information about the history of bushfire brigades in the ACT and the establishment of the Association, its purpose, and the support it provides to both bushfire fighters and emergency service volunteers. The submission highlighted a number of matters the Association has raised with ESB of behalf of volunteers:

- training of brigade members—including in first aid, off-road driving, fire suppression and emergency service activities

- the safety and suitability of equipment—including clothing, vehicles and other items used by members

- support services for members in the field—for example, communications, water, food and fresh crews

- the proposed issue of additional equipment—such as winter jackets for bushfire volunteers, global positioning systems, compasses and satellite phones.

In meetings with members of the Association's executive, the Inquiry was advised that there are some concerns about the longer term future for bushfire volunteers in the ACT, with many members perceiving that government relies on them heavily and is increasingly imposing controls over the volunteer brigades. Further, although morale following the January 2003 fires is generally sound, there is some frustration because bushfire fighters feel they were not effectively deployed, especially on 8 and 9 January. On these and subsequent days resources were on standby but only limited resources were deployed to suppress the fires resulting from the lightning strikes.

The Association advised the Inquiry that all brigades are able to guarantee full vehicle manning for two shifts; most could guarantee rotating three-shift manning. During a long event, however, some volunteers may have difficulty securing release from their employer; for self-employed volunteers, the situation is financially more difficult. Problems with vehicle limitations—in particular, the number of vehicles available and the lack of qualified tanker drivers in some brigades—were also identified, and increased training of bushfire fighters in chainsaw operations and the inclusion of chainsaws on light unit vehicles were recommended.

Most importantly, the Association stressed that volunteers need to be consulted and be able to put forward their views about any proposed changes to operations or organisational arrangements as a result of the January 2003 fires. The volunteers feel that in the past they have been afforded inadequate opportunity to comment on changes that affect them but, more importantly, acceptance of previous volunteer proposals has not been demonstrated in subsequent process change and this has significantly affected morale.

The ACT Fire Controllers Group

The ACT Fire Controllers Group was formed in 1995 following the withdrawal of the CSIRO Division of Forest Research from the ACT Bush Fire Council. The Group comprises all the operational officers within the ACT Bushfire Service, from deputy captain up. These are the people, whether volunteer or departmental, who make the decisions on the ground and fulfil the role of incident controller or take up a position within the Incident Control System structure. The Group aims to provide fire controllers with a mechanism for raising specific concerns with the Bushfire Service or other areas.

Fire controllers' primary concern is the safety of people at an incident. To perform this function effectively, they need adequate resources, training and support. The Group identified a number of ongoing issues related to training and the funding of training, including the need for equity in funding allocations for training across all service areas of ESB. Although the group acknowledged the opportunity for combined training across services in areas such as four-wheel-drive training, there was still a need for specialised training in each area. In relation to the Bushfire Service, the Group highlighted a pressing need for specialised training in tanker driving and tree felling.

Communications are also a concern. The Group stressed that resolution of communication problems between and NSW units must be a priority. There should also be a consistent approach between the ACT's firefighting services and adherence to Standard Operating Procedures to support firefighters in the field. Internally, a process needs to be established whereby grievances within the brigades or services can be aired and resolved.

The Fire Controllers Group is unfunded. Executive members pointed to the Group's success in organising safety-awareness information nights that are well supported by members but require access to minor funding to continue. They also highlighted the need for funding support and control of representation on the national organisation. It was recommended that the *Rural Fire Control Manual*, which describes the organisation's structure, legislative powers, duties, and other matters such as policy and training, be reviewed and updated.

The ACT Rural Lessees Association

The ACT Rural Lessees Association promotes the interests of landowners who have responsibility for the stewardship of the ACT's rural land; this makes up some 22 per cent of all ACT land. The following concerns were raised in the Association's submission and in a subsequent discussion with the Inquiry:

- *Fuel management.* The Association questioned land management practices in the national parks, pine forests, river corridors and nature reserves where fuel had been allowed to build up over time. Alternative fuel management tools such as grazing to reduce hazards, have been overlooked and there is no audit process for assessing the fuel build-up and the attendant fire risks.

- *Fire response.* The Association considers that greater priority and resources should have been devoted to the fires in the initial stages. It noted that some fire trails were inaccessible as a result of poor maintenance and that firefighting vehicles were prevented from entering some areas.

- *Early warning.* In a briefing to landowners on 16 January, Environment ACT raised no specific concerns about the fires. There was also a lack of communication with landholders bordering national parks and river corridors. The Association did however, commend Environment ACT's response in supporting landowners after the fires.

Other general comments concerned the need for ongoing research into wildfire control and the need to resolve communication and coordination difficulties between NSW and ACT bushfire authorities.

The Association made the following recommendations:

- that there be a statutory requirement to reduce fuel loads on government-controlled land

- that management plans for national parks, river corridors, forests and nature parks be reviewed and an annual audit process be introduced to focus on the level of fuel in these areas

- that grazing, on a controlled basis, be examined as a fuel-control measure

- that pine plantations not be replanted where, in the event of a bushfire, they would pose a threat to rural or urban property.

Conclusion

The Inquiry thanks all the people and organisations that provided submissions and comments to it, including those it met in person. It especially thanks the many people who suffered distressing losses or had harrowing experiences during the fires, for stepping forward and participating in the process. All comments received, both written and oral, were of considerable value in helping the Inquiry to be as well informed as possible.

Overall, the submissions were positive in nature. Although many criticisms were made, and many people were angry, the vast bulk of the comments were directed at helping to identify shortcomings and deficiencies, so that lessons could be learnt for the future. In particular, there was widespread appreciation of and gratitude for the personal efforts of the firefighters and emergency workers who struggled valiantly against what can only be described as overwhelming odds.

Notes

1 Matthews, S 2003, *How Did the Fire Know We Lived Here? Canberra's Bushfires, January 2003,* Ginninderra Press, Canberra.

2 Bushfire Fuel Management Plan 2002-04, issued in November 2002.

3 This followed comment in the *Report of the Task Force on Bushfire Fuel Management Practices in the ACT* that 'on balance ... the fire protection values were likely to be better managed and the fire trails better maintained if the area is managed by one of the ACT Government land managers. However, if the ACT cannot increase the level of management ... the lease should be surrendered to NSW'. Glenn, G 1995, *Report of the Task Force on Bushfire Fuel Management Practices in the ACT,* p. 18.

Residents attempting to protect their homes with limited water pressure. Photo courtesy ESB.

4 Operational readiness: an assessment

(A discussion of aspects of ACT government agencies' operational readiness to deal with bushfires and their aftermath)

A multitude of factors affect ACT government agencies' capacity to respond to bushfires and their aftermath. Some are confined solely to the emergency services bodies whose task it is to deal with bushfires when they occur. But that is only part of the story: through their activities, other government agencies can have an impact on the performance of those responsible for fire suppression and prevention.

This chapter discusses the more important elements of operational readiness and makes a number of recommendations for improvements.

Fuel management

All fires develop as a result of the application of three elements—heat, oxygen and fuel. In a bushfire-prone environment, heat and oxygen, relative humidity and wind, cannot be controlled by human intervention. Thus, the only element that can be influenced by human endeavour is fuel. This notion is at the heart of one of the fundamental arguments related to fuel management. The fuel does not start fires, but it directly influences fire behaviour and fire intensity, both at the time of ignition and subsequently.

Fuel-reduction burning—also called controlled burning, hazard-reduction burning or prescribed or cool burning—has been much debated for some years. The debate has exposed the sometimes conflicting views of environmentalists, pastoralists, managers of parks and forests, and governments. Scientists are also divided in their views about the impact of fires and fuel-reduction burning on the myriad natural ecosystems in fire-prone environments. The various aspects of the debate are summarised in this section.

The January 2003 fires in the ACT, and fires more generally in eastern Australia during the summer of 2002–03, have given new impetus to the public debate, which is also an important consideration for this Inquiry and others currently under way. Criticism of the lack of a regular or robust burning regime in ACT parks and forests was voiced in numerous public comments in the immediate aftermath of the January fires and subsequently in a number of submissions to the Inquiry.

The purpose of fuel-reduction burning

The accumulation of fuels is an unavoidable characteristic of Australia's ecology, and fuel-reduction burning is the only effective *broad-scale* measure available to reduce the fuel hazard. It does not prevent bushfires; rather the aim is to reduce the available fuel load for any particular fire, thereby:

- inhibiting its early development
- reducing its intensity
- reducing the opportunity for the fire to develop into a crown fire[1]
- reducing the likelihood of spotting[2] and blowing embers-where light fuel such as leaves and bark is blown ahead of the fire front and start further fires.

When a fuel-reduction program has been successful, the ignition of a bushfire leads to a smaller geographic area being burnt, fewer resources being needed to extinguish the fire (and a consequent cost reduction), and less risk to firefighters, members of the public and property.

It is generally accepted that fuel loads in the Brindabella Range, while variable in different parts of the hills, were very high and very dry in January 2003. This would have promoted early fire development, increased fires' intensity, and increased the potential for spotting. Such conditions should have alerted firefighters to the importance of attacking any fires with great urgency at the outset, in an effort to mitigate the danger posed by the fuel. The conditions also meant that controlling a fire that became established would be exceedingly challenging.

Areas subjected to fuel-reduction burning can still be affected by severe wildfires. In extreme conditions such as those experienced on 17 and 18 January—even had there been a more robust program of hazard reduction—it is highly unlikely that that the fires could have been extinguished or contained before they reached the edge of Canberra.

Achieving a low risk of damage from bushfire in all possible combinations of circumstances requires a range of strategies, some of which are beyond the available resources of the ACT, even with the support of the Commonwealth and the states. In particular, rural–urban interface planning and operational response and suppression strategies, together with fuel mitigation, would be required if the best possible outcome were to be achieved. This highlights that fuel-reduction burning—although it is the only element in the 'fire triangle' that can be manipulated—is never going to be a fail-safe remedy for bushfire risk in all circumstances.

In relation to the January 2003 fires, the real significance of fuel reduction rests with the potential to control the fires immediately after the lightning strikes on 8 January. Fuel reduction directly assists with fire control, and a mosaic of fuel-reduction burns offers a better opportunity to arrest a fire's progress. It does, however, have less impact once extreme weather conditions develop, as occurred in the ACT on 17 and 18 January.

A controlled-burning regime over time could have the effect of providing a greater level of protection against damage from small and medium-sized bushfires, rather than those very occasional events that are at the extreme end of the scale. In addition, the Inquiry received submissions contending that the January 2003 fires' impact on biodiversity and endangered species in Namadgi National Park is likely to be more severe in the long term compared with the risk of environmental damage associated with conducting regular fuel-reduction burns through the area.

Arguments in favour of fuel reduction

Apart from being the only element in the fire triangle that can be manipulated, prescribed burning is further supported by reference to the unique nature of the Australian biota. It is argued that fire is a fundamental element of the Australian biota, and the Inquiry was advised that many native plant species are reliant on fire for regeneration. Although there is continuing debate about the precise biological impacts of fuel-reduction burning, there is general acceptance that fire is beneficial for a number of plant species and is a natural part of the Australian environment.

A further argument relates to the question of 'preservation' as opposed to 'conservation' in this context. Preservation implies maintenance of the status quo—no change. Conservation implies acceptance of some management actions to maintain the overall existing land use and value. Historically, preservation has tended to eventually fail, leading to catastrophic events such as a major fire burning a total park environment. Conservation actions such as fuel-reduction burning have led to a reduced incidence and intensity of fire, although this is difficult to quantify scientifically.

From a historical perspective it is further argued that, through natural events such as lightning and intervention by Indigenous Australians, local environments were regularly affected by fire. Although fires were not lit with the intention of fuel reduction, this view does highlight that the land has sustained numerous fires in the past and that flora and fauna in Australia have co-existed with fire for millennia.

It is also claimed that conducting prescribed burning assists in developing and maintaining the skills of land managers and firefighters. The Inquiry was advised that these skills have been degraded—in large part as a result of the reduction in prescribed-burning activity—leading to a cycle of less experience and fewer skills in the management and control of bushfires when they inevitably occur.

Finally, although grazing can have some impact in reducing fuel loads, this has little effect on the accumulation of dry forest fuels. The only practical, broad-scale comprehensive way of significantly reducing fuel loads in native bush and commercial forests is through prescribed burning, even though there are significant limitations in pine forests.[3]

Arguments against fuel reduction

While there is general acknowledgment that fire encourages the regeneration of some native species, there remains debate about fuel reduction having adverse ecological effects on specific biotas. The absence of fire is seen as supporting the survival of these fragile environments, particularly where there are endangered species.

A focus solely on fuel-reduction burning places undue emphasis on this particular form of hazard reduction. Hazard can also be reduced by grazing, mowing, and taking into account topography and proximity to urban development and other infrastructure in the planning process. These factors together with the severity of particular seasons, all need to be taken into account when aiming at reducing risk.

Further, fuel-reduction burning is a risky activity. Although it is usually done in autumn or spring, when weather conditions are generally benign, successful prescribed burning requires dry fuels and a breeze. Despite land managers and firefighters being cautious, there have been many occasions when prescribed burns have become uncontrollable. This obviously predisposes land managers and governments to adopt a cautious approach—quite apart from the pressure from those in the community who are strongly opposed to fuel-reduction burning on the basis that the benefits are outweighed by the potential for damage to property and the natural environment.

Fuel-reduction burning is also labour and resource intensive. Considerable resources, often including aerial support, are required, making the practice expensive due to the heavy reliance on voluntary personnel. Governments have often underestimated the costs involved.

Additionally, fuel-reduction burning can lead to extensive regrowth, and it has been argued that in the short term the regrowth can outweigh the fuel reduction achieved.

Smoke from fuel-reduction burns has often given rise to complaints from local communities. Approval from the relevant environment protection authority is generally required whenever smoke may affect urban areas.

Finally, fuel-reduction burning can be done only in very specific weather conditions: as few as 25 to 30 days a year (including weekends) might be assessed as suitable in eastern Australia. This severely restricts the area that can be burnt, and the limited availability of volunteer personnel can also be a problem. Because of these factors, long-term goals should be identified; that is, burning programs ought to be set for achievement over a period of, say, five years, rather than trying to meet annual targets. This allows for the setting of realistic targets that are less dependent on the vagaries of the weather in a particular year.

The Bushfire Fuel Management Plan

In the ACT, fuel management is the responsibility of both private and public landholders. The ACT Bushfire Service is responsible for fire suppression across all ACT lands outside the urban area; the ACT Fire Brigade is responsible for Canberra.

Following a difficult bushfire season in New South Wales in 1993–94—including a number of fires in the ACT that threatened property, one of which caused minor property damage in Curtin—the then Minister for Emergency Services, Mr Gary Humphries, established a Task Force on Bushfire Fuel Management Practices, chaired by Mr Graham Glenn AO, to identify possible inadequacies in the then current bushfire fuel management approach.

The Task Force's principal recommendation called on government land managers to produce bushfire fuel management plans for the lands over which they had control and specified that these plans should be submitted to and approved by a Bushfire Fuel Management Committee. This recommendation was given legislative effect in 1996, through an amendment to the *Bushfire Act 1936*, although the proposed committee was not established in legislation, and it had been decided that the draft plans would instead be approved by the relevant Minister.

An initial plan was prepared in 1998; it was reviewed two years later, as required by the legislation. Following the fires in December 2001, which penetrated the urban boundaries of Canberra but resulted in no loss of property, that plan was approved and issued in November 2002. The Bushfire Fuel Management Plan 2002–2004 has as its primary aim to 'contribute to an improved level of protection from bushfire for the ACT', while its primary objective is described as to 'reduce the potential impacts of bushfire so as to protect human life, property, and significant natural and cultural values'. The Plan covers 70 per cent of the ACT, taking in lands that are the responsibility of Environment ACT, Canberra Urban Parks and Places, the Land Group, and ACT Forests. It does not apply to private leases, these being urban homes and rural leases. It presents itself as a collaborative and detailed document representing a whole-of-government approach, and its production meets the requirements of the *Bushfire Act 1936*.

The Plan details fuel sources and clearly identifies the threat of fire from the north and west, consistent with the ESB risk assessment. It is much more prescriptive than its predecessors, with specific outcomes and performance measures itemised. Divided into sections on technical information, strategic directions and works programs, the Plan identifies the need for greater fuel management action to diminish the risk of fire and reflects the intentions of land management agencies through a series of detailed maps and listed actions. Despite this, the Inquiry was advised that after a large portion of Namadgi National Park was burnt in 1983 a 'no or low burn' practice was adopted in an effort to minimise detrimental environmental impacts in the Park; the Plan appears to maintain this approach of minimal burning in much of the Park.

Because of the limited time available to it and the impact of the January 2003 fires, the Inquiry was unable to ascertain the extent to which the works programs detailed in the Plan have been implemented. Development of the Plan is commendable, but subsequent actioning, assessment and accountability remain a significant, and to this date, unresolved, problem. Quarterly and annual reporting regimes were specified, and this occurs through output and agency annual reports.

The existence of a more detailed plan than had until then been available represents a positive commitment by the authorities and the Government to making fuel management an integral part of land management responsibilities. But plans are of little value if they do not give rise to practical management outcomes against a clear policy framework and an unambiguous set of measurable objectives. Financial budgets also need to reflect a realistic capacity to achieve the specified outcomes.

The reality

Large quantities of fuel have accumulated in ACT parks and forests. Appendix E shows the areas of the ACT that have been burnt in recent years. Of note, however, are the extensive areas that have not been burnt for many years. In the 2002–03 season, fuel loads in some areas were estimated at between 35 and 40 tonnes per hectare, described by some as the 'maximum available fuel load'—that is, the balance between the level of fuel that naturally degenerates through composting and the fuel that accumulates through leaf litter.

The 2002–04 ACT Bushfire Fuel Management Plan nominates fuel-reduction burning as a tool that should be used. As noted, the areas identified for fuel-reduction burning are relatively small, with the emphasis on those areas at greater risk. The Plan was prepared before 2003 fires, and far more extensive fuel reduction would have been necessary if there were to have been an appreciable impact in reducing the fire risk in ACT parks and forests before the 2002–03 fire season.

After January 2003

The ACT now has an opportunity to take advantage of the substantial reduction in fuel loads that resulted from the January fires. Planning should be reviewed, access tracks further developed, and future strategies determined. This is easier to do when there is less fuel in forests and parks. The likelihood of fires of the same ferocity occurring in the next few years is considerably diminished, although grass fires are a threat and some areas still carrying a heavy fuel accumulation—both in Canberra and in rural areas—remain a high fire risk.

The Bushfire Fuel Management Plan should be revised to take account of the changed circumstances as a result of the January fires. Greater emphasis should be given to controlled burning, in combination with other measures such as mowing and slashing, in and around Canberra.

Other matters

The Inquiry was impressed with the Victorian Code of Practice for Fire Management on Public Lands[4], which was issued in 1995 after extensive consultation with stakeholders within and outside government. It provides for the establishment of fuel management zones, giving priority to areas of public land carrying the greatest risk. Fuel reduction can thus be directed towards the high-risk areas before efforts are made to reduce fuel in larger, less significant zones. Zoning does not reduce the need to carry out fuel-reduction burning

across all areas, but it does identify priorities and—given that, historically, goals were not regularly achieved—this determining of priorities is important. The ACT would benefit if similar priorities were developed for the zones already identified in the Bushfire Fuel Management Plan.

The apparent disparity between the requirements for public and private land management was raised with the Inquiry. Private landholders expressed the view that they can be required to ensure that fire hazard–mitigation works occur, whereas public authorities such as ACT Parks and ACT Forests are required only to maintain management plans, with little emphasis being given to compliance.

Conclusion

In the light of the two federal inquiries that have been initiated—the House of Representatives Select Committee on the Recent Australian Bushfires and the National Inquiry into Bushfire Prevention and Mitigation (to be conducted under the auspices of the Council of Australian Governments)—this Inquiry did not reach a conclusion on the level of fuel-reduction burning that should be pursued in the ACT in future. The Inquiry is, however, of the view that, as a long-term strategy, something more substantial than the present program is warranted in those areas that were unaffected by the 2003 fires. Before the fires, the fuel levels in ACT forests and parks were very high, and this was well known by the authorities. Further, the fuel was extremely dry.

The Inquiry is confident that more fuel-reduction burning would have helped the authorities contain the fires that resulted from the lightning strikes on 8 January 2003. It is less confident, however, that extensive fuel-reduction burning would have had a significant impact on fire behaviour on 17 and 18 January, even though the overall forest fuel load and its proximity to urban areas, clearly contributed to the fires' intensity and the generation of a very substantial volume of embers. The extreme conditions on those two days meant that forest fuel loads—regardless of the ground fuels and lesser vegetation that would have been removed with fuel-reduction burning—exacerbated the severe fire conditions that eventually affected ACT rural areas and Canberra suburbs.

The Inquiry considers that fuel management through controlled burning is the only practicable way of reducing the excessive build-up of fuel loads in the ACT's extensive areas of park and forest. The burning provides no guarantee that bushfires will be prevented, but when they do occur their intensity is likely to be less and they will be more amenable to early containment or extinguishment.

Controlled burning requires experience, an appropriate mix of personnel and equipment, a properly planned and carefully managed approach, and an understanding of and sensitivity to the potential for damage to natural ecosystems. The Inquiry recommends that there be greater emphasis on controlled burning, as part of a revised fuel management regime for the ACT.

Any significant increase in fuel-reduction burning would necessitate a change in policy, with the attendant implications for how this might best be achieved and at what cost. These are not easy considerations and they should not be underestimated. They require political judgment—to successfully balance the benefit of natural public assets against the risk of loss of infrastructure and human life as well as the added risk of loss of natural assets from occasional catastrophic fire events. The community values associated with the protection of the natural environment and the need to reduce risk to an acceptable level need to be identified. It is important, therefore, that bushfire fuel management plans continue to be endorsed by government, as a reflection of its judgment about how the overall community interest is best accommodated.

There is little point in having plans even those endorsed at the highest levels, if they are not carried through. The approval process in the ACT needs to be reviewed to make it easier for public land managers to be able to proceed when the weather is right. This should not mean that environmental and other community concerns about burning are ignored. However, it should be possible for the government's own agencies, to proceed with government approved fuel management operations, in accordance with arrangements that are open to public scrutiny but that do not impose more limitations on agencies simply because they involve excessively bureaucratic procedures. As a contribution to making the process more accountable, an annual audit of performance of the land management agencies against the annual objectives set in the fuel management plan, should be undertaken by an independent person and reported to the relevant Minister.

Recommendations

- The ACT Bushfire Fuel Management Plan should be reviewed in the light of changed circumstances since the January 2003 fires. Increased emphasis should be given to controlled burning as a fuel-reduction strategy.

- The Victorian Code of Practice for Fire Management on Public Land should be used as a 'best-practice' guide when revising the ACT Bushfire Fuel Management Plan and a similar set of priorities should be developed in relation to zones identified in the Plan.

- An addendum to the existing 2002–04 Bushfire Fuel Management Plan needs to be prepared prior to the 2003–04 bushfire season, noting the extensive consultation process required under the *Bushfire Act 1936*. This addendum should focus on the area unaffected by the 2003 fires and the buffer zone surrounding Canberra's exposed northern and western perimeter. The addendum should be submitted to government for approval.

- An annual audit of achievements under the Bushfire Fuel Management Plan should be conducted, with the results reported to government and published.

- A public information strategy should be prepared to educate the ACT community about the beneficial and protective aspects of fuel-reduction burning and about the degree of inconvenience that will inevitably result for ACT residents during such burning. This should accompany the public launch of the revised Bushfire Fuel Management Plan.

- The approval process for individual fuel-reduction burns that are consistent with the government-approved Bushfire Fuel Management Plan, should be simplified so as to enable the limited time when the weather conditions are right, to be used to maximum advantage.

Notes

1 A fire burning in the crowns of trees and usually supported by fire in ground fuels; it is a fast-travelling fire that usually consumes all available fuels in its path.

2 The ignition of spot fires from sparks or embers.

3 Burning in pine forest is not generally considered viable, although protective fuel reduction about the borders of the pine forests, in nature forest reserves within pine plantations and as part of post-clearfall management regimes is appropriate.

4 Department of Conservation and Natural Resources, Melbourne 1995.

The following Ministerial statement accompanies the 2002–04 Bushfire Fuel Management Plan. It expresses very well some important points that are consistent with themes in the report (emphasis added).

Ministerial Foreword

This Bushfire Fuel Management Plan will be effective from 1 December 2002 until 30 November 2004. It supersedes the 2000–2002 Plan.

Severe fire events in the ACT during December 2001 have demonstrated that the **ACT community is not immune from the devastating impacts of bushfires** recently experienced in other parts of Australia. One of the lessons learned from the bushfires that occurred here last year was **the need for land management agencies** and the ACT Emergency Services Bureau **to work collaboratively to develop effective fuel management strategies** that target priority areas across land management boundaries.

This plan demonstrates an integrated, whole of Government approach, providing, for example, a single map for any area showing fuel management strategies regardless of agency responsibility. It takes a strategic approach to developing fire fuel management strategies for high-risk sites, based on a robust risk management framework developed by the Emergency Services Bureau.

The background text has been written to reflect our better understanding of fire behaviour and fire risk. This links technical information with proposed strategies and actions. A table has been included to provide an easily accessible summary of fuel management actions and agency responsibility. This table **is a clear statement of performance indicators for the implementation of the plan**.

The plan has been subject to **public consultation** and a number of amendments were made as a result of the submissions received.

This plan calls for an **increase in the number of strategic bushfire fuel management actions to be implemented within plantation pine forests and Namadgi National Park**. This aspect of the plan will require further development over the next few years to adequately protect important community and biodiversity values.

It is important to acknowledge that **fuel management is only one of the tools** used to reduce the impact of bushfires. The ACT will also continue to rely upon good **urban planning, rapid detection** of fire ignitions and **prompt response** to the fires reported as a means of reducing the impacts of fires on the community.

Bushfire management is a partnership: this Bushfire Fuel Management Plan represents the Government's intentions for land managed by Government agencies (ACT Forests, Environment ACT, Canberra Urban Parks and Places and the Land Group). **ACT residents can play their part** and be good neighbours by **reducing fire hazards on their own property**.

Ted Quinlan MLA
Minister for Police,
Emergency Services and Corrections

Bill Wood MLA
Minister for Urban Services

Fire access

Access to fires is a central element of operational readiness. Access is needed so that firefighters, their vehicles and the necessary equipment can reach a fire. The quality of that access influences the speed of the response and the safety of firefighters travelling to and from the fire ground. Although firefighters generally use public roads to travel to the vicinity of a fire, they are often reliant on specially prepared tracks to enable their light and heavy tankers to be used at the fire. For remote area firefighting teams, or RAFTs, access can be gained by helicopter drops into prepared or opportune landing sites.

In assessing the preparedness and effectiveness of fire access routes, the Inquiry noted comment in various submissions, reviewed a Department of Urban Services mapping product, *Namadgi National Park—pre suppression plan* (dated December 2002), and had discussions with staff from both the Department and ESB.

Although there is an effective system of roads and tracks around Canberra, in urban parkland and through ACT forests (albeit largely for commercial requirements), there are few fire tracks in Namadgi National Park apart from the Mount Franklin track, which follows the ridge separating the ACT from NSW. A number of tracks are marked 'dormant track' on existing maps, presumably meaning the tracks are no longer used or maintained.

Effective access to remote fires is reliant on the following:

- policy formulation
- risk assessment
- mapping and information systems
- local knowledge
- maintenance.

Policy formulation

Policy statements in relation to fire access trails are limited but are being developed. The Bushfire Fuel Management Plan 2002–2004 is silent on access to fires; the *Rural Fire Control Manual* makes reference to road closures but not to fire access. The Department of Urban Services submission to the Inquiry stated that a fire management plan for Namadgi National Park is being drafted and is due for completion in 2004. The Inquiry was advised that this work includes 'consideration of fire access and trails'[1] and that Environment ACT has

established a Road and Fire Trail Strategic Planning Group 'to examine the current and future requirements of the road and fire trails network'.[2] Detailing access considerations in fire management plans is appropriate. The Inquiry was also advised that existing road access has been managed 'in accordance with public expectations concerning the management of such land for its water catchment and conservation values'.[3] That may be so, but it is apparent that track access in Namadgi National Park has not been managed with fire access in mind.

The Inquiry received advice through submissions from the public and Department of Urban Services employees (both current and past) that track access in Namadgi had progressively been 'closed down', although no formal policy reflecting this existed. The Inquiry's observations support this view. In an effort to reduce unwanted public recreational access, tracks were revegetated either through closing off their entry from larger roads or through replanting. The effect was the same: the tracks became difficult to locate and over the years indistinguishable from the adjacent vegetation. In discussions with various stakeholders it became evident that the fire access requirements had not been made clear and that full communication of expectations and implications is needed.

The Inquiry considers that a clear policy statement outlining the requirements of adequate fire access should be reflected in all relevant plans. Considerations relating to wilderness maintenance and water catchment are important in their own right, but access for fire-suppression purposes is just as important. A lack of easy access significantly impedes the initial response to fires and their subsequent rapid suppression, as well as hampering efforts to scale-up the attacks on fires if they increase in size. The result is what occurred in January 2003—with highly detrimental outcomes for both wilderness values and water catchment quality. The Department of Urban Services submission noted several concerns in this regard:

- the intensity and location of a track network
- track quality in relation to fire use
- cooperative arrangements with other land management agencies, including those interstate.[4]

These are all relevant, but they must not inhibit the establishment of clear policy within the ACT.

Risk assessment

As land use changes from logging to national park, track use and demands change. A formal risk assessment should be carried out, to ensure that access is established where it is required and not simply in areas historically used for logging or recreational pursuits. The Inquiry was not made aware of any risk assessment having been conducted before the existing network of fire trails was established in the ACT. It was advised, however, that a risk assessment would be conducted in order to determine future access needs in Namadgi National Park and that this would include access into NSW to meet NSW Rural Fire Service requirements. The Inquiry considers that ESB is best placed to conduct that risk assessment and provide advice to the Department of Urban Services.

Mapping and information systems

Firefighters and fire managers need good mapping products. Police and supporting agencies also rely on up-to-date maps. The Inquiry was told on a number of occasions that mapping products were inadequate during the response to the January fires. Examples are:

- local crews relying on a 1:100000 map of the ACT when responding to a fire—such a large scale map making detail difficult to identify
- incoming local and interstate fire crews receiving photocopies of out-of-date maps
- inadequate resources for updating and producing current maps for incident management teams.

The Inquiry notes the ESB recommendation for improved 'spatial analysis capacity',[5] but it considers that having mapping products suitable for everyday use is absolutely essential and that ESB should focus on achieving that goal first. A number of fire authorities in various jurisdictions have prepared 'map books'—like an extended version of a street directory for emergency management use. These are used by the fire authorities, police, land managers and emergency services and, depending on the degree of private information included, have the potential to be sold commercially. When these products are used on a day-to-day basis, familiarity is developed. Consistency is also achieved since all those likely to be involved in an emergency are using the same map. The Inquiry viewed some examples of these products from elsewhere in Australia and considers that similar products should be developed and made available in the ACT. Simply by virtue of their format and size, map books are a user-friendly product that can be referred to in the cabin of a fire truck.

Obtaining the necessary data centrally, from within the Department of Urban Services, is also important; so that consistent data are used and kept up to date. The large number of volunteers in the ACT Bushfire Service and ACT Emergency Services gives the Department an excellent opportunity to gain additional detailed feedback on the naming of local roads and other features often referred to during emergencies. Reliance on the Department's capacity to produce the maps offers the further potential to present the data in a form that can subsequently be used in data transmission once the new ESB communications network is in operation.

The Inquiry noted ESB's recommendation in its submission to significantly develop in-house geographical information system capabilities. Although the Inquiry did not specifically review this aspect, it noted that capabilities already exist in the ACT Government and that any additional capability developed in ESB should not duplicate existing resources. The Inquiry understands that ESB will need to develop additional specific data sets to maximise capabilities with future computer-aided dispatch systems and communication networks.

In addition, maps of fire history are an excellent source of intelligence about possible future fire behaviour. The Inquiry considers that fire history maps of the ACT would be of considerable benefit because past major fires followed a path that was very similar path to that of the fires in 2003. The Brindabella area has featured as a source of ignition from electrical storms in the past. Although a number of useful maps are currently on the ESB website, reference to previous fires could be provided in the suggested map-book format to further raise awareness of previous fire paths and activity.

Local knowledge

Good access during emergency operations is not only a result of good mapping: local knowledge is vital. Local knowledge can be gained by familiarising staff through 'on the ground' visits. This takes time, but dedicated periods need to be set aside for physically travelling around the area. An alternative is to entice or engage others to act as guides; ex-forestry workers are an option, although this would probably be less effective than using existing staff who have gained their local knowledge first hand. The Inquiry considers that extensive familiarisation is essential for all senior firefighters (deputy captain and above), both paid staff and volunteer, and that this should be encouraged.

Maintenance

Once the location of tracks is identified as a result of a risk assessment, the tracks have been built, and firefighters have become familiar with them, an ongoing program of maintenance is essential. While this can be either outsourced or undertaken within government, there is a requirement to have heavy plant available and on call in the ACT for fire operations during the summer. This equipment could be engaged in the spring, to ensure that roads and tracks are well prepared by the time the fire season arrives.

No detailed assessment has been completed, but the engagement of one grader and at least one small (D4) bulldozer for track and facility maintenance in ACT parks and forests does appear to be justified. A number of submissions referred to the advantages of this. A smaller dozer can readily be transported on poor roads, reducing the need to 'walk' the equipment in to fire locations and reducing the time taken to respond. It would have been ideal for helping firefighters at Bendora on 8 January and could have been used to establish access to Stockyard Spur on 9 January. Having this capability available to fire authorities throughout the fire season makes good sense: on fire ban days, it could be pre-positioned in the mountains, ready for immediate deployment. As with aircraft, during some years there will be minimal use and during others there will be great demand. In contrast with aircraft, though, this heavy plant can be used in a number of useful ways and on various projects throughout the summer if the fire danger is not high.

During the January 2003 bushfires in Victoria around 50 such bulldozers were used for constructing containment lines.[6] It was noted that, while ACT Forests had two contract dozers that were available and used during the fires, these were larger D7 and D9 dozers that were difficult to transport into the area of the fires.[7] Additional plant resources (dozers and graders) were eventually obtained from the Australian Defence Force through Emergency Management Australia, together with some civilian plant from outside the ACT.

The use of bulldozers as an important and readily available firefighting resource does not seem to have been a high priority for ESB. No contracts had been entered into, and when staff tried to engage private sector contractors to assist on 9 January none was able to respond immediately. The contracted D7 and D9 dozers engaged by ACT Forests were tasked by them on Day 1 and Day 2 to establish firebreaks adjacent to the ACT border south-east of the McIntyre Hut fire.

Another form of access that is often under-exploited and is critical during the early response to a fire is air. Namadgi National Park contains numerous helicopter landing sites. Using helicopters to transport crews is an effective way of initially responding to a fire in a remote area, before vehicle crews arrive. The success of this approach depends on well-maintained landing sites strategically positioned throughout the area in question and the ready availability of helicopters capable of carrying in remote area firefighting teams.

A small, permanent team of staff dedicated to maintaining the landing sites would be needed. These officers would then be in a position to act as RAFT crews when necessary, since they would have gained good local knowledge through their daily work. Such teams already do maintenance work around the city, and a further group is required to maintain fire access in the remote areas of the Territory, particularly during spring and summer. This is further discussed later in the report.

Responsibility

Responsibility for making the suggested improvements should be shared between the fire authorities and the land managers. The land managers, ACT Parks and ACT Forests, should be responsible for the policy guidelines and for establishment of the expanded maintenance crews and plant resources. The ACT Bushfire Service is in a good position to shoulder responsibility for the risk management functions, coordinating the emergency management mapping and information system requirements, and subsequently auditing the process, to ensure that the necessary fire access trails and sites are in place.

Conclusion

Fire access is a central aspect of fire preparedness. It became critical in the attempts to suppress the fires in January 2003. Initial and subsequent suppression of the fires was adversely affected by the following factors:

- a lack of policy, leading to neglected or non-existent fire trails
- senior operational fire staff working in unfamiliar terrain
- the initial unavailability of suitable plant
- the lack of suitable mapping products.

Because of the importance of access, the revised fire management plans should identify a strategic network of tracks and fire trails and plans for the trails' progressive re-establishment and maintenance. These are needed to facilitate access by firefighters involved in controlled burning and hazard reduction,

consistent with targets and programs established in revised plans, as well as to provide easy access for future bushfire fighting efforts.

All these shortcomings should be remedied, to provide a more effective system of fire access in all parts of the ACT. Good access offers the opportunity for rapid fire suppression. Competing interests such as those associated with water catchments and conservation may call for restricted access, but it is the Inquiry's view that these considerations should not cause a policy vacuum or a lack of preparation. Day-to-day access can always be restricted if necessary.

Recommendations

- Clear policy guidelines should be developed and implemented to support the identification of a strategic network of fire tracks and trails and their establishment and maintenance. An audit process should be instituted to ensure that the policy's effectiveness is regularly monitored.
- A risk assessment should be conducted by ESB to assist in determining access needs across the ACT, linked to interstate requirements with advice being provided to land managers.
- ESB should coordinate the development of emergency management mapping products such as 'map books' for police, land managers, emergency service crews and incident management teams; these should be produced in both printed and data form.
- Greater opportunity should be provided for all senior firefighters to become more familiar with remote areas of the ACT.
- Sufficient funding should be provided for additional crews and plant, so that a program of improved fire access and trail and site maintenance can be implemented.
- Responsibility for fire access should lie with the land managers: advice and auditing functions should be the province of the fire authorities.

Notes

1 Department of Urban Services submission, p. 72.

2 ibid.

3 ibid., p. 71.

4 ibid., p. 72.

5 ESB submission, p. 141.

6 Auditor General, Victoria 2003, *Fire Prevention and Preparedness*, Report no.15, Auditor General, Melbourne, p. 130.

7 A third contracted D4 dozer was damaged earlier in January and was not available during the fires.

Aerial operations

The volatile nature of much of Australia's vegetation, the extremes of climate, and the trend for people to live in semi-rural environments mean that fires will continue to threaten life and property and pose significant economic and environmental risks. Although rural fire authorities are becoming more and more sophisticated, with their volunteer-based ground operations using improved tankers and equipment and greater speed of response, aerial operations are playing an increasingly valuable role in fire suppression. As a result of past media exposure, the public is also coming to expect that aircraft will be used.

But aircraft acting alone rarely put out fires. Wherever aircraft are used for aerial bombing of fires—for example, in North America, the Mediterranean region and Australia—firefighters are also needed on the ground. Their purpose is twofold: to achieve a coordinated effort, concentrating resources on particular aspects of a fire; and to extinguish fires that are not put out from the air. People are also needed on the ground to 'blacken out' areas doused from the air, regardless of the volume of water dropped.

In Australia aerial operations have been used for many years—for both observation and water bombing and using both fixed-wing aircraft and helicopters. The number of aircraft involved has depended on the availability of the resource, the fire authorities' ability to fund aerial operations, and firefighters' willingness to use aircraft. There have been three basic options:

- Canadair has consistently promoted the use of 'super scooper'–type aircraft from Canada. These aircraft are effective in areas with plentiful water—Canada has 13 000 lakes—but Australian fire authorities are unconvinced of their cost-effectiveness for the local situation. To date, they have not been used here.

- Erickson air cranes have been contracted to Victoria for the past six years (and more recently in NSW) and have demonstrated a high capacity for asset protection in the urban–rural interface. They are expensive—at a reported $2 million each per season—but the Victorian Government is convinced they save assets worth far more than that amount. The Western Australian Government claims that savings in the form of asset protection and suppression costs avoided exceed the annual costs of fire bombing by between five and ten-fold.

- General-purpose fixed-wing and rotary wing aircraft—normally used for agricultural spraying, general observation and transport (including medivac)—are also used. In the 2002–03 fire season the NSW Rural Fire Service used over 100 aircraft, both rotary and fixed-wing, to assist with firefighting at a reported cost of $70 million.

On behalf of fire authorities, the Australasian Fire Authorities Council recently produced a detailed submission to the Commonwealth Government and federal funding for some aerial firefighting support was provided for the first time during the 2002–03 fire season. The Council is reviewing arrangements for the coming fire season and is promoting a joint national approach to aerial support, rather than each state and territory pursuing arrangements in isolation.

Although the ACT is a very small player in this arena, the Inquiry considers there would be great benefit in it participating in any national aerial firefighting initiatives that offer the prospect of giving the ACT better access to aerial facilities when needed, at reasonable cost. In addition, the ACT would benefit from having a formal understanding with NSW that it could draw some aerial resources from the NSW Rural Fire Service on terms agreed to. Being involved with any arrangement that included Victoria could also potentially be advantageous to the ACT. Arrangements of this kind would provide better assurance that the ACT could quickly access aircraft when an urgent need arises, as well as improve the availability and use of the available aerial assets involved.[1]

Through the Australasian Fire Authorities Council, fire authorities have reached agreement that 'aerial fire suppression is indeed a safe, effective and efficient tool in many situations ...'[2], despite the following qualifications:

- It is not always appropriate for reasons of effectiveness and safety. Expectations need to be managed.

- Optimum returns come from rapid attack on incipient fires. Aircraft need to be readily available for this, and there is a direct correlation between the time taken to carry out the first drop and the degree of effectiveness in suppressing a fire.

- It must be integrated with other fire operations and is generally ineffective if used in isolation.

- It is a risky undertaking in hazardous conditions. It needs to be managed by competent supervisors and performed by experienced, skilled aerial firefighters.

Access to a range of aircraft types will ensure that optimum benefits are gained from aerial suppression.[3]

Aerial operations involve four key aspects: central coordination, aerial attack supervision, ground–air coordination, and aerial bombing.

Central coordination

Because of the strategic nature of this resource, the ability to rapidly redeploy and the high cost, aerial firefighting is generally coordinated centrally, at a state or territory level. Fire agencies coordinate deployments through cross-agency 'state aircraft units', to avoid duplication and to allocate this finite resource on the basis of agreed priority.

Air attack supervision

The greatest benefit is gained from aerial bombing when an 'air attack supervisor' coordinates it. This is a specially qualified officer, airborne above the fire ground, who has experience in observing aerial bombing and can coordinate the efforts of all available resources. Apart from being able to map the fire and direct aerial bombing efforts as required by the incident controller, an air attack supervisor ensures that the aircraft at a fire operates in such a way as to maximise safety, both in the air and on the ground.

Ground–air coordination

Ground–air coordination provides safety for firefighters and ensures that aerial bombing is used to its maximum potential. Poorly coordinated aerial bombing can be a serious hazard to firefighters: they can have tonnes of water dumped directly on them or they can be struck by limbs or debris falling from trees as a result of the aerial bombing. Ground firefighters' ability to communicate with aerial bombing aircraft (through an air attack supervisor) is therefore critical.

Further, the greatest benefit from aerial bombing is gained by concentrating the efforts of both ground and air resources. This requires coordination by the incident controller, between ground crews, air attack supervisors and pilots. The pilots should be experienced in the role and be considered firefighters themselves, albeit in the air. This is less likely to be the case with contractors or Defence pilots, who are called on to respond with little notice, are unfamiliar with the procedures or are unable to communicate with those on the ground—despite displaying exemplary flying skills, courage and determination.

Aerial bombing

Aerial bombing is done by aircraft dropping loads of firefighting foam, retardant or water. Foam is commonly used in fire operations: it expands the water bulk through air bubbles and helps the water stay on the vegetation, rather than immediately running off. The foam is mixed in on board fixed-wing and specially fitted rotary wing aircraft. It is environmentally friendly and relatively inexpensive.

Using retardant is more problematic and more expensive. The retardant mix, a red phosphate, is imported (generally from Canada) and costs almost $1000 per aircraft drop. Purpose-built facilities are needed to pre-mix the retardant with water before the slurry is pumped onto the aircraft. As an alternative to a mineral-earth break, defoliation or a back-burn, a retardant firebreak can be placed on vegetation possibly adjacent to a fire to slow the fire's spread or reduce its intensity.

A retardant's effectiveness depends on the concentration of the retardant mix, the width of the firebreak, and the time since the break was laid. As with aerial bombing, effectiveness is greatly enhanced if firefighters are present at the retardant firebreak. Use of retardant is dependent on the availability of suitable pre-mixing facilities and suitable aircraft—generally fixed-wing. Its use is limited by the cost and the potential environmental impacts since it is a phosphate-based powder and can have harmful effects in certain environments.

The final aerial bombing option—water—is perhaps the most commonly used in ad hoc arrangements. Water bombing is done by helicopters using either slung buckets or incorporated 'belly' tanks. The advantage is that the aircraft can obtain water from almost any water source, through pumping or dunking their bucket. This reduces the turnaround time, a critical factor in the overall effectiveness of aerial fire suppression. Long delays between the delivery of loads significantly reduce the benefit of aerial bombing of an active fire.

The quantity of water used is also a consideration: an aerial drop of 400 litres from a small 'bambi bucket' will have minimal effect on an active fire compared with a drop of 3000 litres (from a modern agricultural aircraft), 6000–9000 litres (from the latest Canadair model and the Erickson air crane respectively). There is a direct relationship between the quantity and frequency of drops in determining the effectiveness of fire suppression.

Tasking

Regardless of the aircraft or the quantity or type of suppressant being used, the greatest benefit is gained from aerial operations when they are used during the initial period of attacking a fire. The next-greatest benefit comes from using aerial resources to protect specific assets (particularly structures such as houses and sheds) as fire threatens them. Aircraft's flexibility also allows them to respond to emergency situations—for example when a tanker and crew are being threatened by fire and cannot escape. Whatever the role, the effective use of aircraft is dependent on high-level coordination and liaison with ground firefighters, to achieve specific goals. The Inquiry considers it doubtful that there is any benefit in individual aircraft carrying out random aerial bombing, in isolation from firefighters on the ground, for purposes such as reducing the intensity of a fire or impeding its progress.

The question of flying conditions needs to be examined before arrangements in the ACT are reviewed. Early during a fire's development, aircraft tend to be able to operate unhindered by smoke. As a fire develops, however, and fire weather intensifies, smoke, dust and strong winds can restrict (and in extreme cases ground) air operations. On numerous occasions—during the Ash Wednesday fires in Victoria and South Australia in 1983, for example—it has not been possible to use aircraft during the height of the fire because the flying conditions have been too dangerous. The Inquiry received advice that on 18 January 2003 the work aircraft could do was limited by poor visibility and strong winds. Fire managers cannot always rely on aerial bombing.

What was available to the ACT in January 2003?

At a cost of $100 000, the ACT Bushfire Service engaged a light helicopter for the 2002–03 fire season, primarily for observation but with a secondary purpose of water bombing. (The period of engagement was subsequently increased because of the potential severity of the season.) The aircraft was a light observation helicopter, so it could carry only a small bucket, of 450 litres, when engaged in aerial firefighting. The ACT Bushfire Service also had access to the Snowy Hydro Southcare helicopter for water bombing, when it was not being used for its primary task as an air ambulance; it is able to use a 1100-litre bucket. Both these aircraft were engaged in aerial firefighting throughout the period from 8 to 30 January. A further civilian light helicopter was engaged early during the fire response, but it crashed into Bendora Dam on 13 January and was not replaced.

The Snowy Hydro Southcare helicopter provided valuable support throughout the emergency. Photo courtesy ESB.

In addition, two Navy Seahawk helicopters and two light observation Navy Squirrel helicopters were requested from the Department of Defence through Emergency Management Australia and were provided from 13 to 28 January. On 18 January, as the fires moved into Canberra suburbs, additional aerial resources, including an Erickson sky crane were redirected from NSW to assist with asset protection in the ACT.

ACT aerial bombing operations involved water with limited use of foam. No retardant was used.

Procedures

The ACT Bushfire Service has used a helicopter, *Firebird 7*, for aerial observation for some years. For the 2002–03 fire season it was positioned at the Australian Federal Police complex at Weston, in order to improve its response time by locating it outside Canberra Airport's controlled air space. It conducted observation and limited water-bombing operations. The ACT Bushfire Service sought the Snowy Hydro Southcare helicopter, which was provided after it had been reconfigured. That aircraft did begin water bombing late on 8 January: ESB advised the Inquiry it completed three-and-a-half hours' flying that day.[4] It initially concentrated on the Stockyard Spur fire, then moved to the Bendora fire. No firefighters reached the Stockyard Spur fire on the first day, so the opportunity to concentrate all aerial and ground resources on a single incident early in the development of the fires was minimised.

Use of *Firebird 7* and the Snowy Hydro Southcare helicopter was coordinated centrally through an ESB air operations manager, and central management of this limited resource continued throughout the fire emergency. This was appropriate.

The ACT had no air attack supervisors since only one aircraft was on permanent standby—with that being in place essentially for air observation. As the number of aircraft increased to seven (three civilian and four military) there was definitely a need for an air attack supervisor. Not only would this have assisted with the safety of aircraft operating in difficult conditions over a concentrated area; it would also have increased the effectiveness of ground–air coordination and ensured that the aerial bombing occurred precisely where the ground firefighters wanted it. In the absence of anyone else, the pilot of *Firebird 7* effectively took on this supervisory role at various times, although he was not formally qualified to do so. Ground–air coordination is far more difficult to achieve from the ground under a canopy of trees, compared with flying in an observation helicopter directing other aircraft. Although it recognises that the ACT might have only an occasional requirement for an air attack supervisor, the Inquiry does consider that having such a capability within the ACT Bushfire Service is warranted.

In addition, it is the Inquiry's opinion that, under the existing arrangements, whereby helicopters use slung buckets and ad hoc support is provided by the Navy, the use of foam rather than just water was generally not practical. This should, however, be considered for the future. Without access to fixed-wing aircraft and the necessary pre-mixing equipment, the use of retardant was also not a viable option. In addition, retardant is likely to provide a less effective barrier in forests, where coating of the ground fuels as well as tree foliage is required. That said, the NSW Rural Fire Service does conduct aerial bombing with retardant in alpine areas and opportunities to trial retardant use in the ACT should be explored further.

The most crucial procedural factor concerns how the aircraft were initially used to assist in the suppression of the fires. Once the location of the fires had been confirmed, both aircraft in the ACT—*Firebird 7* and the Snowy Hydro Southcare helicopter—should have concentrated on aerial bombing of the Bendora fire, where firefighters were on the ground, to achieve a concentration of effort and benefit from ground–air coordination. Instead, aerial bombing occurred at both the Stockyard and Bendora fires. The fact that the most effective use of the available aerial support was not made meant that this potentially valuable

asset was squandered to some degree, and the available time was limited because water bombing could not occur after nightfall.

It might be argued that by the afternoon of 9 January, and certainly by 10 January, the existing aerial resources in the ACT were never going to be adequate. The ACT Bushfire Service did make efforts, through the existing contractor, to increase the number of aircraft, but it was informed that no additional aircraft were available because the NSW Rural Fire Service had contracted all usable aircraft in the region. (It is noted that at the McIntyre Hut fire the Rural Fire Service deployed up to 17 aircraft in aerial bombing operations.) The Inquiry received a submission suggesting that additional aircraft were available at Bankstown and that, had the ACT Bushfire Service made a greater effort at the time, these could have been engaged.

Conclusion

Aircraft have the potential to be very useful in the ACT when they are employed quickly during the early stages of fire development and in concert with firefighting operations on the ground. They also offer considerable flexibility. The ACT Bushfire Service will never be resourced in the way that the NSW Rural Fire Service is in relation to aerial firefighting, but it should enter into a joint arrangement with the Rural Fire Service to ensure optimum availability and use of assets. The ACT Bushfire Service should also consider whether the continued use of a light observation helicopter is giving it the best range of options. If a medium-lift helicopter were engaged for the fire season, it would provide greater water-bombing capability and the option of moving fire crews—particularly remote area firefighting teams—rapidly across the fire ground.

Having aerial resources on standby would be a considerable expense, and in some years they may be used only rarely. Nevertheless, adopting a view similar to that held in Victoria and Western Australia, in the long term the cost of the aircraft on standby will be much less than the cost of losses to the community from fires. Having aerial bombing resources on standby is basically an insurance policy. It is often too late to locate aircraft once major fires are under way: resources need to be immediately available, thus offering the greatest potential benefit when fires are most likely to be extinguishable.

Recommendations

- Aerial bombing should remain a capability used in the ACT during bushfires, with particular emphasis on using the aircraft for water bombing as an immediate response—as soon as fires are detected. This should be backed up by the use of ground crews.

- A small number of ACT firefighters should be trained as air attack supervisors, to provide a capability when the number of aircraft involved requires it.

- To enhance it's initial attack capability as well as to provide it with greater flexibility in the utilisation of aerial assets, the ACT should employ a medium-lift helicopter, rather than a dedicated light helicopter, to support its fire-suppression operations during the peak of future bushfire seasons. Such an aircraft, coupled with the potential use of the Snowy Hydro Southcare helicopter (when it is not engaged for medivac purposes), would provide greater flexibility and a far more formidable first-strike capability.

- The ACT Bushfire Service should seek a joint agreement with the NSW Rural Fire Service, for the purpose of providing the ACT with enhanced capacity to draw on the aerial expertise, aircraft availability and efficiencies afforded by a much larger bushfire service.

- The ACT Bushfire Service should explore conducting a joint trial with the NSW Rural Fire Service to assess the effectiveness of retardant bombing.

- The ACT should continue to participate in Commonwealth-level discussions that may result in enhanced aerial support for firefighting becoming available on a national basis in the future.[5]

Notes

1 The ACT Government announced on 22 July that it had agreed to participate in the national aerial firefighting arrangements and was negotiating funding for this purpose. The Inquiry welcomed this development.

2 Australasian Fire Authorities Council 2002, *National Aerial Firefighting Strategy*, AFAC, Melbourne, p. 5.

3 ibid.

4 ESB submission, p. 98.

5 The Inquiry was informed in late July that the ACT was negotiating to join the national aerial initiative being coordinated through the Australasian Fire Authorities Council.

Communications and computer-aided dispatch

The ESB submission stated that 'radio communications systems did not meet the substantial demands created by an event of this magnitude'.[1] Among the problems brought to the Inquiry's attention were the following:

- inadequate coverage
- congestion on various networks
- overwhelming of the communication centre
- apparent shielding, possibly because of dense smoke
- inadequate ground–air communication
- difficulties with interoperability between the various firefighting elements
- insufficient quantities of equipment.

Some of these problems can be explained by the extent and rapid progression of the emergency close to and on 18 January, but others had been apparent before then. Of particular concern are the shortcomings that had been identified 13 months before, as a consequence of the December 2001 fires; these are discussed in the section entitled 'The December 2001 fires' in this chapter.

Communications are a vital element of safe firefighting, and the highest priority should be given to ensuring that an adequate system is in operation to support all firefighters, both in Canberra and in rural areas. Inadequacies in communication systems have been a recurrent theme in past coronial inquiries.

Because of the complex nature of current communications systems, lead times for changing and replacing equipment are long. Communications upgrade projects were started at ESB in 1999, and the Inquiry was informed they were well developed before the January fires. Because of the amount of effort ESB has already devoted to this area—including the full-time assignment of the Director of the Ambulance Service to lead a communications redevelopment project—the Inquiry did not review in detail the communications projects. Nevertheless, it does point out that future communications efforts on the part of ESB need to focus on the following:

- coverage problems, particularly in the Brindabellas and other remote areas of the ACT—if necessary through supplementary use of mobile communication facilities
- commonality across emergency services and compatibility with ACT Policing.

- improved interservice compatibility—particularly with the NSW Rural Fire Service
- a balanced approach to communication capabilities, both within Canberra and across the remainder of the ACT. There is a perception that communication upgrades are centred on the urban areas at the expense of remote areas of the ACT.

The current projects are detailed in the ESB submission. They are:

- a new computer-aided dispatch system
- a mobile data sub-system—with automatic vehicle location in urban Canberra
- a direct turnout sub-system
- a new radio communication system.

In the 2003–04 Budget, which was handed down during the course of this Inquiry, the ACT Government made provision for substantial funding to procure and operate a computer-aided dispatch system and to improve the emergency services communications infrastructure. Including the funds already committed, some $40 million in capital and operating costs over the next four years will be spent on these improvements. The communications upgrade will allow for radio interoperability with the land management agencies' response vehicles, as well as improving portable radio communications, mobile data and radio relay equipment, and providing an automatic vehicle location system. When implemented, these projects will greatly improve the operational effectiveness of emergency services and their capacity to work together in a more integrated fashion.

One remaining weakness that the communication projects will not resolve is the difficulty of achieving complete systems interoperability between ACT emergency service agencies and ACT Policing (which follows Australian Federal Police nationally determined standards) and the NSW Rural Fire Service (which follows a different NSW statewide government standard). The benefit of these agencies being able to maintain effective operational communications during emergencies is self-evident.

The different communications approaches followed by emergency service bodies across Australia are related to decisions taken by the separate jurisdictions at different times, seeking to take best advantage of rapidly changing technology. The high cost of replacement goes against easy adoption of a more national approach. In addition, decisions taken by the Commonwealth spectrum-allocation body add another level of complexity.

Despite the inherent difficulties the continued pursuit of greater interoperability between emergency services organisations throughout Australia should continue to be a long-term aim.

Although it may take a long time to achieve, the ACT should take whatever steps it can to encourage the development of a national solution to communication between emergency services bodies, which as part of crisis management, need to be able to have unimpeded communication with each other.

Conclusion

The current ESB communication projects should continue, with adequate resourcing and taking account of the experience of recent events. These developments should proceed, in close liaison with ACT Policing to maximise opportunities for interoperability. In the light of the steps already being taken to identify the future communication needs of the emergency services and to develop specific proposals for approval, and of the funding commitment already made by government, the Inquiry concluded that the urgent need for an upgrade had been identified and was being dealt with. As a result, no recommendations on the Inquiry's part are called for.

1 ESB submission, p.151.

The current ESB building. Photo courtesy ESB.

The Emergency Services Bureau headquarters

The ESB headquarters building is in the Woden Valley, at the former North Curtin Primary School. Originally constructed in the early 1960s, the building was extended in the 1970s and was closed as a school in the early 1990s. ESB was being formed at that time and was located in the facility, along with other tenants. The facility currently houses ESB headquarters, a childcare centre for 85 children and a day-care association.

Building consultants engaged by ESB found that the external building fabric is sound, although major water leakage through the roof has been a continuing problem. There is considerable wasted space in the form of internal courtyards; parking facilities are inadequate; and serious security concerns have been identified by ESB management and external security consultants. At the height of the fires in January 2003, the facility proved seriously inadequate for dealing with the large number of people present as the crisis developed, the high volume of communications traffic, command and management functions, and the provision of public information and advice.

Site limitations

The physical layout of the building and site is poor for an emergency services centre, for several reasons:

- The site is located in the centre of a residential suburb.
- The site offers open access to the public.
- Security for ESB vehicles and in terms of building access is inadequate.
- The site is co-located with childcare facilities.
- The existing building layout does not facilitate the performance of emergency services functions.

Among the specific inadequacies are the following:

- lack of an adequate operations facility accommodating
  - the Incident Control System functions of planning, operations and logistics
  - purpose-built liaison functions for police, the Bureau of Meteorology, utilities, and relevant government departments
  - a media viewing and briefing facility
- limited uninterrupted power supply

- poor capacity to 'ramp up' for an ongoing emergency
- lack of air-conditioning other than in the communications and operations centre
- threats to the facility itself during the firestorm.

In January 2003 the layout and lack of functionality of the facility directly affected operational managers' capacity to receive and analyse information, control and direct their assets, plan future operations, and adequately deal with the hundreds of residents who were calling seeking emergency service support or advice.

In his submission to the Inquiry, the Chief Executive of the Chief Minister's Department noted the difficulty in maintaining continuing current operational information on the fires. He stated that this required considerably more effort than should have been necessary, essentially because of the natural focus of operational and planning staff on dealing with the fire emergency itself, as well as the limited staff available for those tasks.[1] This issue was also raised in media comments to the Inquiry. The layout and technical deficiencies at Curtin would have compounded these difficulties.

Coordination

The functionality of the facility was further stretched by the appointment of the Chief Fire Control Officer as the Alternate Controller, leading to the need for additional coordination meetings at the facility. In addition, personnel found themselves regularly travelling between the Curtin facility and the Winchester Centre in Belconnen, where the Police Operations Centre is located and where the Management Executive met from Sunday 19 January onwards.

Operating between the two facilities added a further degree of complexity to coordination and facility use, as well as placing an unwanted burden on personnel who had to travel between the two centres at the height of the emergency.

The large number of people present at Curtin during the critical stages of the event, coupled with the inadequate layout and set-up, made it impossible to separate people and functions in a way that is optimum for managing a major, continuing emergency. The Inquiry reached no conclusion about whether these inadequacies should have been better attended to when preparing for the 2003 fire season—and in the light of the 2001 fires. However, with the development of an ongoing campaign after the ignitions of 8 January 2003, it is difficult to understand why more infrastructure preparations and planning to manage a major event were not carried out at ESB between 9 and 17 January,

albeit within the existing inadequate infrastructure. There is no doubt that, compared with the police facility at the Winchester Centre, the ESB facility provided inferior management support in all areas other than access to emergency services communication.

The lack of an adequate operations centre and associated facilities has been acknowledged by ESB management. Although urban emergency services tend to use operations centres less, because of the short duration and limited impact of the vast majority of emergency responses (to house fires, vehicle accidents, and so on), rural fire and emergency service agencies historically have needed major operations centres for several reasons:

- the longer duration of many events, requiring ongoing planning and logistics
- the larger number of resources used to respond to the emergency
- the more holistic approach required by the response—for example, because of effects on the community, government and utilities.

Although the ESB facility has served reasonably well as an emergency centre headquarters for the past decade, fundamental design and structural deficiencies remain. These represent an inconvenience for small and medium-scale emergencies, but they pose serious barriers to operational effectiveness during larger events.

Operations centre facilities

Regardless of the scale of the operation, what is required is an operations centre with the following features:

- a central operations room equipped to provide timely information about deployments and developments, using displays, maps and tasking boards
- communications support to provide information and the means to task resources
- a separate area for planning, isolated from the main operations room
- facilities for planning and managing logistics support, ideally adjacent to the operations room
- purpose-designed areas for commanders and managers to be able to concentrate on specific aspects of an emergency while maintaining a strategic overview

- facilities for liaison staff from the Bureau of Meteorology, the police, other emergency services, utilities, and relevant government departments
- adequate conference rooms for planning and coordination
- an area for press briefings, near external access to the facility, together with an area for press viewing separate from but adjacent to the operations centre
- administrative support for all users, including office and other facilities.

Upgrading

Various consultancy reports have identified weaknesses at the Curtin facility and opportunities for relocation elsewhere. The Inquiry understands that some funding has already been allocated for upgrading or relocation and that ESB is forwarding recommendations directly to government.

Relationship with the Police Operations Centre

The Territory's Emergency Management Plan identifies the Police Operations Centre at Belconnen (the Winchester Police Centre) as the normal venue for the Territory Emergency Operations Centre, with the ESB headquarters at Curtin nominated as the alternative centre.

During the January fires the Curtin centre was the primary operations centre throughout the event. At the start, the fires were managed as a normal bushfire incident, and the ESB building, with its facilities, was the natural place for the management of operations. As the fires escalated, the limitations of the centre became apparent, but moving to the better set up and equipped Police Operations Centre was never really entertained because of the dislocation and distraction this would have caused at a difficult time, quite apart from its impact on normal police operations.

When the Curtin centre was threatened by fire on Saturday 18 January some contingency preparations were in hand to move to an alternative centre, but had that been necessary it would have been more likely that the move would have been to the AFP Headquarters Operations Centre in Civic.

When there were intermittent power failures at Curtin late in the afternoon the possibility of a forced relocation re-emerged but eventually temporary power was restored. The communications centre and limited other facilities at Curtin had emergency power installed, which maintained the supply without a break. The remainder of the facility was later supplied with power when an auxiliary generator was urgently acquired and connected.

The Police Operations Centre at Belconnen operated throughout the period providing normal support to police operations including supporting the police's own efforts directly associated with the fires.

When a state of emergency was declared at mid-afternoon on 18 January and the Chief Fire Control Officer, who had been responsible for managing the operational response to the bushfires, was appointed Alternate Controller, the bushfires remained under his operational command. A move to another operations centre, merely because the Emergency Plan envisaged this, was clearly not an option. Indeed the appointment as Alternate Controller appears to have been for the very purpose of ensuring that the existing command arrangements were not disrupted at the height of the crisis.

Some of the communications load generated by the public and the media was transferred from the Curtin centre to ACT Policing at Belconnen and to Canberra Connect during the Saturday afternoon. This helped to ease somewhat the mounting pressure on the Curtin facility, but it did generate significant cross-service communication and coordination problems.

In his submission to the Inquiry the ACT Chief Police Officer explained some of the difficulties in the following terms:

> While this structure enabled the fire fighting and police efforts to continue uninterrupted during the emergency, it did generate significant cross-service communication and coordination problems. There were times, for example, when it was difficult to secure a phone line between the two centres. At one stage, officers at the POC [Police Operations Centre] could communicate with the ESB office and gain fire updates only by leaving a telephone line open and passing the phone from one person to the next. Police liaison officers at ESB would attend briefings and relay this material by phoning the POC using mobile or landline. POC officers wanting to relay information or ask questions in light of police intelligence would phone the ESB based members. This was problematic given police officers were at times unavailable as they were attending briefings, and there were limited phone connections between the two centres due to infrastructure damage and the use of one main line for communication between the two centres.
>
> Members based at the POC had no other ready way to secure fire information except for relying on police field patrols. ACT Policing relied on its patrols and communications network to obtain up to date, situational reports on the fires' locations and movement.

> The communication difficulties between the two centres also affected the speed at which fire maps and other data were sent to the POC on occasion, by which time such information was received the data was out of date, such was the speed of the fires.
>
> In addition agencies working in recovery aspects did not necessarily know in the first few days which centre to contact to relay information, seek advice or direction.[2]

The Executive Director of ESB also informed the Inquiry that ESB experienced difficulties similar to those described by the Chief Police Officer as a consequence of communications problems between the two operations centres.

This experience is relevant to the long-term planning of emergency management in the ACT. There are broader considerations to be addressed—beyond simply improving the facilities available to ESB for its normal emergency management responsibilities. These include the needs of government itself for high-level operational support during a crisis or serious emergency; the relationship between the emergency services and the police and how best to support the related but different responsibilities of each of these arms in an emergency, while ensuring that there is no loss of essential contact, communication and exchange of operational information between them; the development of the Police Operations Centre as the Territory's command centre for terrorist-related events; and questions of building redundancy into the overall system, and of security.

The Inquiry limits its recommendation to ESB's need for a more efficient and effective operations centre, catering for the integrated operational management of emergency services in the Territory, and for ESB to be capable of being scaled-up to meet the needs of a significant emergency.

Recommendation

The ACT Government should take urgent steps to upgrade the Emergency Services Bureau's operational command and control facilities—either by carrying out a major refurbishment of the existing facility at Curtin or, preferably, by locating to a more suitable alternative site, where a more functional, longer term operations centre can be developed.

Notes

1 Chief Minister's Department submission, pp. 4-5.

2 ACT Policing submission, p. 29.

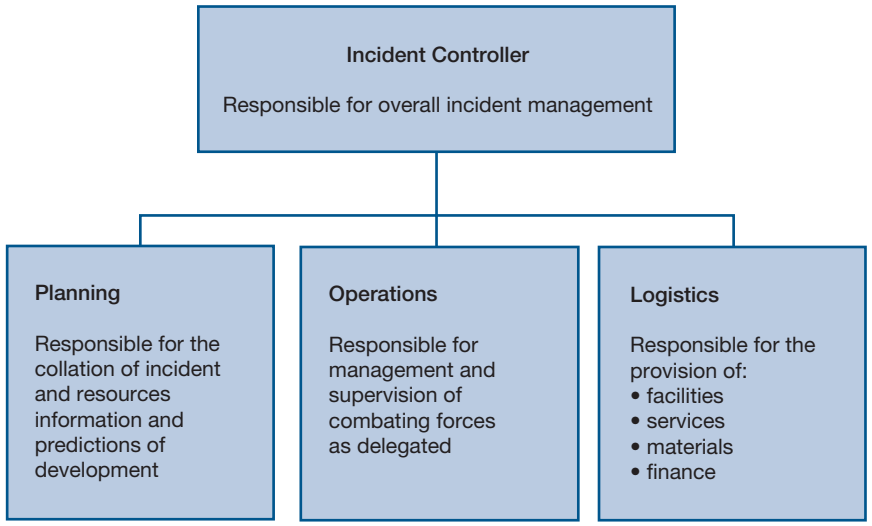
Incident command and control

To understand how the fire-suppression activities were managed in January 2003, it is necessary to examine the incident command and control system in operation in the ACT Bushfire Service. The Inquiry used as a point of reference two publications of the Australasian Fire Authorities Council: publication 4.04, *Incident Control Systems* (1999) and *Incident Control Systems—the operating systems of AIIMS* (2nd edn, 1994). The Inquiry is aware that AFAC is reviewing the AIIMS Incident Control System, although the results of the review are not yet available.

Effective incident command and control is essential for successful emergency management. It provides a framework for thorough planning, unequivocal decision making, and suitable logistical support. In the context of a wildfire, successful suppression and the safety of those on the fire ground (firefighters, police and the community) are dependent on the timely adoption of a single, consistent command and control system that is understood at all levels. This becomes even more critical as the size and complexity of an incident increases and as the risk of losing control of resources on the fire ground becomes more pronounced. Such a system should not be based on a single emergency service, such as the ACT Bushfire Service: it needs to be a multi-agency approach, in keeping with the philosophy of ESB, and there should be capacity to link seamlessly to police and interstate services—in the case of the ACT, particularly the NSW Rural Fire Service.

The AIIMS (Australian Inter-agency Incident Management System) Incident Control System has been developed for such a purpose. It is endorsed and supported by the Australasian Fire Authorities Council and all Australian fire authorities. It has been adopted by ESB and is incorporated in the ACT Bush Fire Council's *Rural Fire Control Manual*. The system is based on an American model adapted for Australian conditions and was adopted by rural fire services in the 1980s. The ACT's Chief Fire Control Officer was closely involved in introducing the System into rural fire agencies. It provides a systematic approach to complex command challenges, dividing activity into planning, operations and logistics and identifying a clear incident commander. It can be implemented at any level of an event and is applicable to large and small emergencies. Figure 3 shows the ICS relationships.

Figure 3
Incident management team
Incident Control System relationships



Australasian Fire Authorities Council, 1999 *Incident Control System*, AFAC Limited, Victoria, p. 11.

For a major wildfire event, the dissection of the operations function into division and sector commanders, who become responsible for areas on the fire ground, is a common approach—see Figure 4.

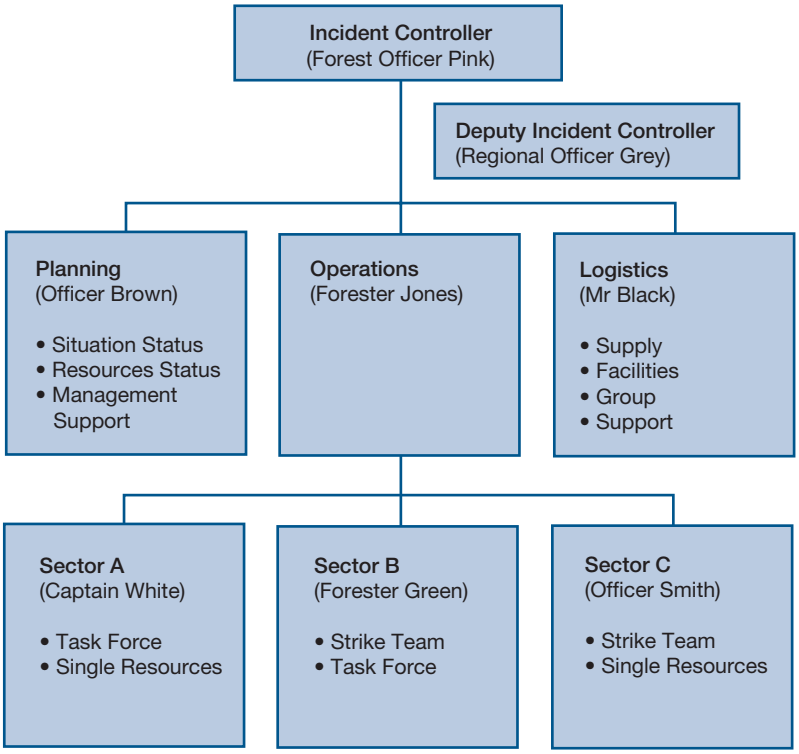
The AIIMS ICS identifies a number of principles:

- one controller for an event or a specified part of an event
- functional delegation
- management by objectives
- management plans
- span of control
- command within agencies.

Only two of these principles—span of control and management by objectives—are specifically mentioned in the ACT Bush Fire Council's *Rural Fire Control Manual*.

Figure 4
Wildfire

Likely to be a multi-agency response.
The functional responsibilities may be shared among the agencies in attendance.



Australasian Fire Authorities Council, 1999 *Incident Control System*, AFAC Limited, Victoria, p. 23.

The ACT approach

The Inquiry is satisfied that ESB is fully committed to managing in accordance with ICS principles and notes that courses were conducted before the 2002–03 fire season, providing ICS overview, planning, operations, and logistics training for officers. The Inquiry is not convinced, however, that the manner in which the ICS has been implemented in the ACT is totally consistent with the AFAC-endorsed approach, particularly in relation to large bushfire events or best serves the ACT Bushfire Service.

Smaller events often do not expose underlying weaknesses in management approaches. The extreme stresses and pressures accompanying larger and extended emergencies such as campaign fires are much more likely to expose weaknesses. What follows is a description of the ACT's application of its incident

management approach and the Inquiry's assessment of how the system measured up when placed under great stress.

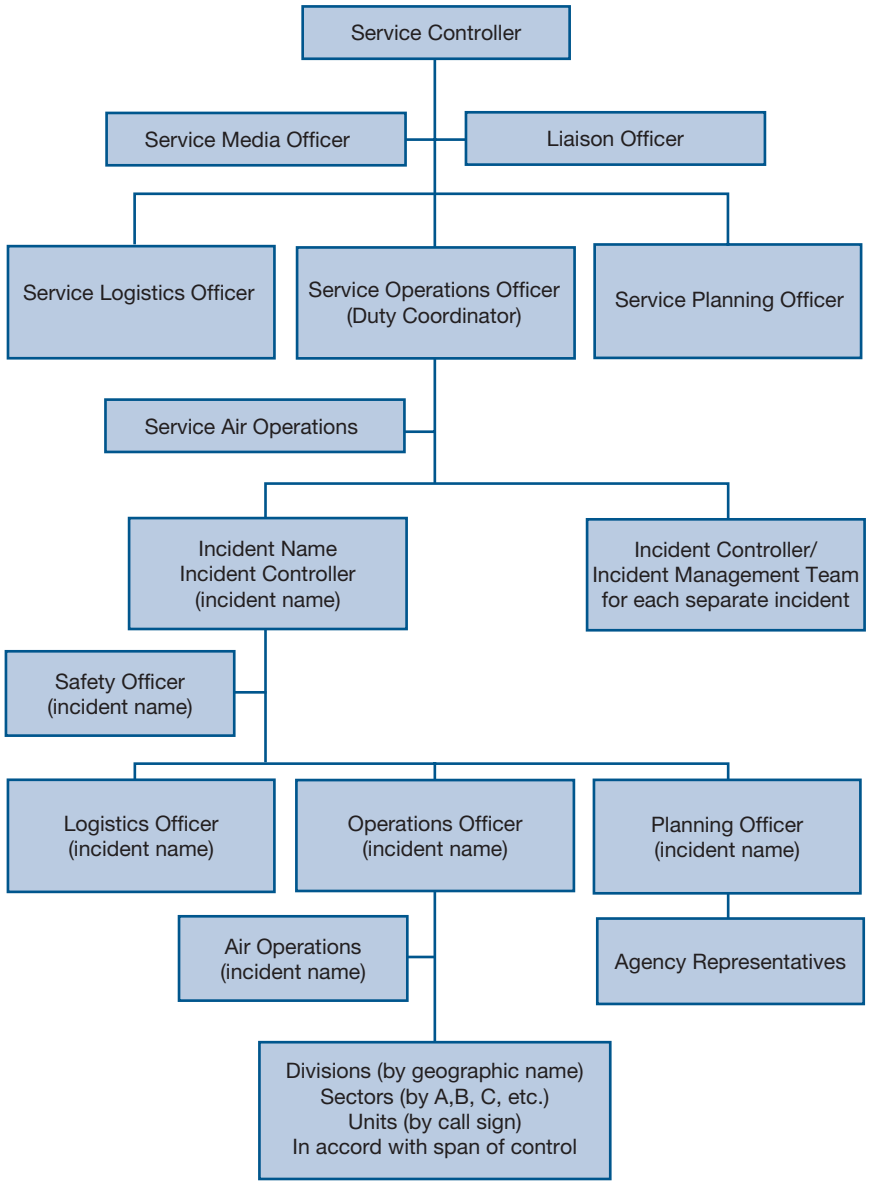
The *Rural Fire Control Manual* states that the ACT has modified the ICS to distinguish between the Incident Management Team (those in the field responsible for command and control) and the Service Management Team (which operates out of headquarters in Curtin and is responsible for coordination and support). In discussions with senior Bushfire Service staff, the Inquiry was advised that the Service had not modified the AIIMS ICS; discussions centred on how and where the various ICS functions were performed and the local terminology used.

Figure 5 shows the ACT Bushfire Service's approach to ICS implementation. The Service Logistics Officer, Service Operations Officer and Service Planning Officer—the three vital functional elements that are needed to support the incident controller—are part of the Service Management Team located at headquarters in Curtin. The Service Controller is the Chief Fire Control Officer.

The ACT Bushfire Service appoints an incident controller for each fire event in the ACT. During the 2003 bushfires, incident controllers were appointed to respond to each of the Bendora and Stockyard Spur fires and subsequently at times the Gingera fire. The difficulty with appointing the commanders of the operational response as incident controllers is that they are not in a good position to be responsible for 'managing the entire response to the incident'[11], as the ICS requires. The view was expressed by the Bushfire Service that, because of the small geographical scale of the ACT and the lack of facilities other than in Canberra, this functionality is best achieved at ACT Bushfire Service headquarters at Curtin. People in the field lack proximity to and awareness of the planning and logistical support functions that remain at ESB and do not deploy to the fire ground. The situation becomes more problematic when incident controllers are changed on a daily basis, as occurred during the January 2003 emergency, leading to a lack of continuity and of a strategic approach.

Across the border in New South Wales, in the Yarrowlumla Fire Control District, the incident controller was the Fire Control Officer, the senior officer in the Fire District. He was appointed on Thursday 9 January and remained in that role for the duration of the fires. An Incident Management Team operated with him at the district office in Queanbeyan. Operational commanders in the field were sector or divisional commanders. The New South Wales approach is more consistent with that adopted in Victoria and South Australia; it allows for continuity and a consistent strategic outlook, with field commanders focusing on action plans developed by the Incident Management Team.

Figure 5
Incident Control System operational structure



The distinctive ACT approach appears to have given rise to a range of views, reflected in submissions to the Inquiry, about the Bushfire Service's incident management through the ICS. Specific reservations were expressed in relation to aspects such as the following:

- a lack of clarity about the ICS's functioning within ESB
- the blurring of roles and poor communication between the Service Management Team and Incident Management Team
- inadequate delegation of non-essential functions
- what should have been ICS strategy meetings becoming larger general briefing sessions.

The lack of clarity about the ICS's functioning within ESB appears to turn on who is in control. There is clarity about the incident commander in the field having the authority to make tactical-level decisions on the fire ground, but the planning support required to make those decisions is at ESB. Although logistical support was well established at the Bulls Head staging area, there was no comprehensive Incident Management Team in the field to support the appointed incident controller. The mere title Service Management Team, raises doubt about the function and purpose of those in headquarters and is an unusual term to visiting firefighters.

The incident controller thus lacked an effective Incident Management Team in the immediate vicinity to provide advice and carry out directives. The resources that under the ICS that should be available to support the incident controller were in Canberra. The controller's reliance on support and advice from the Service Management Team at Bushfire Service headquarters in Curtin created an impression, real or otherwise, that headquarters was controlling or directing events. Although the purpose of this arrangement may have been to ensure that the field commander was able to make operational decisions, the reality is that, without close support from a comprehensive Incident Management Team, the appointed incident controller is powerless and basically responds to the directives of the central Service Management Team.

Such a situation makes responsibilities and expectations unclear and places a heavy responsibility on unimpeded communication between the incident commander in the field and the support functions at headquarters. In practice, this is very difficult and time-consuming, and if it is inadequately achieved confusion can result. Within the ICS arrangements as currently applied,

the recent incident controllers became reliant on handovers and radio briefings in the field for instruction about tasks to be performed during their shift. Some felt obliged to visit the Service Management Team at headquarters to exchange information, both before deploying and on return from the fires. The shifts in the field were already 12 hours, so this makes for a very long day.

Two options were immediately available. One was to have planning, operations and logistics support for a designated incident controller deployed closer to the fire ground, with the controller; the other was to manage the incident from Curtin, where the incident controller would also be located, assisted by sector commanders in the field. Either option would have been more in keeping with accepted ICS practice.

The Inquiry also considers that some functions should have been decentralised or physically separated from Curtin. Concentrating many support functions at Curtin placed great strain on an inadequate facility. Catering could have been carried out elsewhere. Further, with such an intensity of operational effort and resource deployment, the establishment of divisional forward command centres should have been considered, potentially co-located with police forward command posts, to reduce the build-up of pressures on a single inadequate command centre.

The Australian Federal Police had asked ESB for liaison officers to be represented at the Police Operations Centre and the police forward command posts. A fire liaison officer was sent to the Winchester Centre on 18 January while other rural and urban officers were based at the northern police forward command post following 20 January. Staffing pressures within ESB explained the initial absence of fire officers at the command posts.

Concerns expressed about the apparent lack of ICS strategy meetings and the diversion of planning meetings to briefing sessions are another reflection of a lack of clarity about responsibilities. Within an orthodox ICS approach, the idea of engaging in strategic planning without clear guidance from, and most likely the direct involvement of, the appointed incident controller would not be contemplated. During the fire emergency, however, this happened daily, because the appointed incident controllers were at the fires. This further illustrates the confusion and confirms that in reality, the Chief Fire Control Officer was acting as the incident controller and the appointments in the field at the fires were effectively sector controllers. As the fires merged and became larger, formal incident command eventually moved to headquarters under the Chief Fire Control Officer, on 17 January 2003.

The Inquiry is satisfied that significant operational planning was carried out, albeit much of it informally and quite possibly without all relevant stakeholders present. Those people (minus the appointed incident controllers) generally were present during the daily briefing sessions, when strategies and current fire developments were discussed. These briefing sessions did not, however, provide a suitable forum for detailed debate of strategic options, and increasingly became an information-sharing mechanism as greater numbers of senior personnel became involved in the fire event.

Although these shortcomings in themselves did not generate the disarray that was experienced on 18 January, they contributed to a weakening of the clarity of command and control, strategic direction, and consistent application in the field throughout the event. Unequivocal command and control is essential for effective emergency management. The means by which the ICS is implemented in the ESB does not fully achieve this. Adopting a standard approach to the ICS within the ACT, consistent with that used by the NSW Rural Fire Service across the border, would make it easier for the various ACT emergency services, and interstate fire crews when they are assisting, to work more closely together.

Members of the Incident Control Team working at ESB headquarters. Photo courtesy ESB.

Finally, the *Rural Fire Control Manual*'s identification of the 'Operations Room adjacent to the Communications Centre ... in order to provide coordination during large incidents or multiple incidents'[2] reflects at best a very optimistic view of preparing for such events. The Inquiry considers that the operations room, as identified, is totally inadequate for such a task. A visit to the operational facilities of the NSW Rural Fire Service in Queanbeyan confirmed this. The January fires proved the point: incident control functions had to be located in training rooms, corridors, and effectively all available space at ESB. They demonstrated that the ICS functions within ESB need to be reviewed with the aim of decentralising non-essential functions and reallocating the use of available space at ESB headquarters or at a future operations centre located elsewhere.

Conclusion

Although ESB management expressed confidence in the operation of the Incident Control System as it is applied in the ACT, the Inquiry received sufficient comment from others and reached its own conclusion that incident command as it is currently practised is not fully effective.[3] There is no doubt that the existing poor facilities at ESB headquarters hindered the effective operation of the ICS. Nevertheless, the Inquiry considers that recent events (the December 2001 fires) and the steady build-up of the January 2003 fires, gave ESB opportunities to learn how best to use the existing infrastructure and shape the ICS management team accordingly. It appears this was not done as well as it might have been. Resolution of the ICS is critical to the successful command and control of future fires in the ACT. Because of this, a review of the ICS needs to be workshopped particularly between land managers and ESB, but also including police.

The overall impression created has three main elements:

- The Incident Control System used in the ACT lacks clarity and effectiveness with terminology contributing to this.

- Too much detailed information became centralised at ACT Bushfire Service headquarters during January 2003, limiting the ability of senior operational managers to concentrate on the strategic picture and contributing to problems with decision making by incident controllers in the field because of their need to continually seek information and support from Curtin.

- There should be greater integration of ICS functions between the ACT Bushfire Service, land managers and the ACT Fire Brigade. More Fire Brigade and land management personnel could be trained in ICS management; this would increase the pool of personnel who could be drawn on in a major bushfire event in the future.

Notwithstanding these criticisms, the loss of control at ESB headquarters late in the afternoon of 18 January is explained more by a combination of communications difficulties and the inadequacies of the facilities at Curtin—coupled with the speed and enormity of events and the problems associated with obtaining a timely and accurate picture of the fire front's advance—than by a fundamental breakdown in the Incident Control System itself.

Recommendations

- The ACT Bushfire Service should review the current Incident Control System arrangements, through an inter-agency workshop involving ESB, the ACT Fire Brigade, the Department of Urban Services and ACT Policing, to better clarify the application of the system. In particular, incident controllers should not be expected to operate when separated from their supporting elements; they should function as part of a cohesive, integrated management team.

- ESB should establish joint ICS teams, made up of ACT Bushfire Service, ACT Fire Brigade and Department of Urban Services personnel, to jointly manage emergency incidents within the ACT, regardless of location or the services' areas of responsibility.

- Facilities at ESB headquarters should be such as to provide the best opportunity for the ICS to function at a tactical and strategic level in accordance with the Australasian Fire Authorities Council doctrine.

Notes

1 Australasian Fire Authorities Council, 1999, *Incident Control Systems*, AFAC, Melbourne, p. 24.

2 *Rural Fire Control Manual,* paragraph 10.5

3 During the course of the Inquiry ESB acknowledged that terminology used in the ACT should be adjusted to closer match AFAC doctrine.

Vehicles and other equipment

For emergency and fire services, properly equipped vehicles are essential items of their inventory. They provide mobility for crews, they carry the essential 'tools of trade', and they are important to the safety of personnel.

The urban fire service experienced difficulties with its Scania pumper, which displayed a design fault when embers that were sucked in set fire to paper air filters. Two appliances broke down as a consequence of this defect; a third was destroyed. The defect had been experienced at a fire in 1999, as a consequence of which the supplier fitted a modification. As events on 18 January demonstrated, however, when the appliances were exposed to extensive ember attack the modification did not eliminate the problem. It has since been ascertained that similar problems have been experienced in other jurisdictions, but this knowledge had not been passed on to ESB. Negotiations are continuing with the manufacturer.

The ACT Fire Brigade pumper burnt due to embers entering the engine. Photo printed with permission of the *Canberra Times*.

Two other pumpers suffered extensive damage to some exposed nylon air lines. A solution to this problem has since been developed. The occurrence of both the air filter and air line problems was unfortunate, but it is partly a result of the fact that urban fire appliances are not normally designed to be exposed directly to fire, as they were during the January 2003 fires.

Submissions to the Inquiry also highlighted the large amount of plastic on new rural appliances and some poor design features. Because of time limitations, the Inquiry was unable to review the concerns about design, but it did become aware that other rural fire services were facing similar problems with the multiple use of plastic in modern truck cab chassis. Because new rural tankers are built on a standard commercial truck and the ACT Bushfire Service is a small customer in terms of truck purchases, there is no opportunity to persuade truck manufacturers to better 'fire proof' their standard truck designs. Improvements need to be engineered locally.

The other problem associated with vehicles and equipment was the lack of immediate access to bulldozers and graders, to assist with track clearance and the construction of firebreaks and containment lines. In the section entitled 'Fire access' in this chapter, the Inquiry stresses the value of ACT Forests and Parks authorities having immediately available some heavy plant of this kind, so that it can be rapidly deployed to fires as soon as they break out.

These problems aside, the overall quality and level of provision of the equipment used by the emergency services was not criticised in submissions, nor were complaints raised—other than in relation to the urban pumpers and rural tankers—during the Inquiry's visits to some of the urban, bushfire and emergency services brigades.

It was noted, however, that funding has not yet been identified for replacement of the major appliances in the urban brigades' inventory when they reach the end of their economic life. The Inquiry did not deal with this question in detail. It may not be a problem when the time comes for replacement, but government, and its financial advisors, should be aware of the need to make provision for re-financing these capital assets.

Conclusion

In order to privide maximum flexibility to the fire services the Inquiry sees benefit in the provision of four 'rural pumpers'—four wheel drive appliances that carry adequate water for rural operations and have a large pump for urban use. This hybrid appliance—which is commercially available—overcomes limitations of using urban pumpers at rural fires. They also enhance the existing cross crewing arrangements in the ACT Fire Brigade where crews man either an urban pumper or rural tanker depending on the fire call.

Apart from the matters raised here, the standard and quality of the operational vehicles and equipment available to the emergency services in the ACT appears to be satisfactory.

Recommendation

That four rural pumpers be added to the fire service vehicle fleet, specifically for use in the rural–urban interface.

ACT Ambulance Service paramedics supported the firefighters during the emergency. Photo courtesy ESB.

The *Rural Fire Control Manual*

The Inquiry reviewed the ACT Bush Fire Council's *Rural Fire Control Manual*. The publication is dated, having been developed over 10 years ago. It originally reflected the Bush Fire Council's responsibility under the *Bushfire Act 1936* to '... prepare a rural fire control manual containing particulars of all aspects of the operation and organisation of the service'. It covers a combination of operational policy matters and firefighting techniques, with links to the Council's Basic Training Modules.

With the introduction of the Emergency Services Bureau and its assumption of responsibility for the ACT Bushfire and Emergency Service, the manual has continued to have application through its adoption by ESB. However, although it still meets the legislative obligation in the Bushfire Act, it has been difficult to update because of the changed role of the Bush Fire Council and the recognition that the Bushfire Act itself is in need of major amendment. Despite the acknowledged need for legislative change, to date it has not been possible to give priority to reviewing the Act.

The purpose of the manual is described as seeking to:

- optimise [the Council's] ability to control fires
- protect life and property
- minimise adverse effects of fires that do occur
- promote responsible land use management
- educate the public about the dangers of bushfires and minimisation of risk.

The manual is divided into sections on fire suppression and fire protection. It aims to detail the legal requirements, bushfire realities and feasible practices, with a stated objective of helping to make these things better understood by the public. This intent is commendable, but the Inquiry considers that the manual, when updated, should be in a different form.

In its current form, the manual aims to serve three different purposes: to describe the Council's policy approach; to provide information the Council considers the public should have in order to understand and prepare for bushfire threats; and to describe a range of detailed operational procedures. ESB has already begun reviewing the manual and separating it into three parts, reflecting these separate purposes. The Inquiry considers that, following government's consideration of the recommendations in this report, the Bushfire

Act should be entirely replaced by new legislation. The need for a comprehensive manual of the type that currently exists should then no longer be necessary.

The operating procedures and instructions governing bushfire operations, which are essentially for internal use, should be solely a matter for management. They should of course be open to public scrutiny, but there is no need for them to be contained in the form of a disallowable instrument. They deal with operational matters, so it is not appropriate that they can be countermanded by the Legislative Assembly. The Assembly's role should be confined to establishing the legal framework within which the operations are conducted and defining the governance and accountability arrangements that ought to apply.

The Inquiry notes that the Victorian Code of Practice for Fire Management on Public Land is a 'best practice' document that outlines policy for a wider public audience; it considers that the ACT would benefit from the development of such a publication.

Notwithstanding the foregoing comments, the manual contains much relevant and useful information.

Identification of the threat

The manual describes fuel types and their impact in terms of suburban gardens, open grasslands, woodlands, natural forests, pine plantations, and so on. The following are among the observations:

> For most of Canberra, the type of suburban garden has little effect on the [Bush Fire] Council's activities; but where houses are located on the suburban perimeter or close to hill parks clothed with native vegetation, the type of garden can have a serious effect on the level of damage done to buildings and the threat to life and other property when a bushfire burns into them.
>
> ...
>
> Because [dry forests] often contain rough bark species such as peppermints and stringy barks they have a high spotting potential and fires in these forests can present a serious threat to the adjoining properties and particularly houses in suburban Canberra adjacent to hill parks. [The Bush Fire] Council recommends periodic fuel reduction by burning with low intensity fires as a practical means of reducing the fire hazard in these forests; the aim is to maintain the fine fuel loads at less than 10 tons per hectare. [section 2.6]

The manual also details characteristics of fire and fire weather in the ACT:

> Under the worst recorded conditions grass fires can travel up to 18–20 km per hour and fires more than 60 km away may threaten Canberra.
>
> ...
>
> It is important that we recognise that, under these extreme fire weather conditions, which may occur every five years or so, it is impossible for any fire suppression organisation to control the fire if it is burning in abundant fuels.
>
> ...
>
> While much can be done with early detection and rapid initial attack, if a fire burns from some distance away and enters the ACT in a broad front then suppression forces available in both rural and urban fire brigade services will be overwhelmed.
>
> ...
>
> Prevention of loss of life and damage to property can be undertaken only by individual home-owners.
>
> ...
>
> ... the potential weather to create widespread havoc within the suburban area has existed and there are adequate examples in history to indicate the potential for a bushfire disaster. [The ACT's fire history is detailed in Chapter 1 of this report.]
>
> ...
>
> Often the fire danger may be low in the early morning and rise to very high or extreme by early afternoon and then drop back to low again some time in the late evening. [section 2.7]

These statements show that the possibility of a bushfire threat to Canberra was recognised and documented. Many of the statements were borne out in the December 2001 fires; 13 months later, they were all borne out.

Despite acknowledging that it appreciated the risks, ESB management failed to translate that into timely advice to the public. How this happened is discussed in Chapter 5.

Firefighting practices

The firefighting practices as detailed in the manual clearly identify the types of risks the emergency services were facing in January 2003 and the potential implications. The following examples highlight important matters that were clearly understood by the Bush Fire Council in 1992.

The need for rapid intervention and containment:
The fire suppression policy of the RFS[1] is to have very rapid initial attack to contain all fires to as small as possible an area. If the initial attack fails and the fires defeat the first crews sent to suppress it, the RFS policy is then to attack the fire to keep its area to the minimum practical size with the resources available to it ... in general the RFS policy changes from a minimum area suppression to a minimum time suppression. Some areas need to be sacrificed in order to contain the fire at defensible fire lines within the available time-frame. [section 11.23]

Spotting during back burning:
If the main fire is spotting at all then it will be virtually impossible to control spot fires produced from the back burn and escape will be inevitable ... in almost every situation in forest country, backfires (fires from back burning) are unsuccessful and only serve to increase the difficulty of suppression and the final burnt area. [section 11.23.5] [This accurately describes the experience of crews as early as 9 January 2003].

Fire breaks:
Fire breaks are not considered useful in native forest country because fire brands from even moderate intensity fires will carry the fire across even quite wide fire breaks. [section 11.6]

Training

On 28 April 1988 the ACT Bush Fire Council adopted a number of policies relating to training and minimum standards. The Inquiry notes these and commends the Council for its foresight in seeking to prescribe a minimum of training at a time when this was not a general practice across the bushfire industry.

Conclusion

The *Rural Fire Control Manual* deals with a combination of operational policy matters and firefighting techniques. It is dated and requires revision, but it contains considerable wisdom, presumably gained from experience. Much of the manual remains relevant and some will be reinforced by the most recent bushfire experience.

Recommendation

Work already begun on the review of the *Rural Fire Control Manual* should be resumed with the view to replacing the manual by new publications that cover the following:

- a document detailing public policy in relation to fire management
- an operational policy manual for internal use
- a supporting set of standing operational procedures covering techniques and practices reflected in the Basic Training Modules publications.

Notes

1 The ACT Rural Fire Service, the forerunner to the Bushfire Service.

ACT Bushfire Service personnel combating grass fires close to Canberra. Photo printed with permission of the *Canberra Times.*

Training and development

The training and development of personnel are primary obligations of authorities seeking to establish and maintain an efficient and effective emergency services organisation. The same applies to organisations for which firefighting is an important but ancillary function—for example, the agencies that manage forests and parks.

The Inquiry is satisfied that all the ACT authorities concerned attach high importance to the 'skilling' of their personnel. In each organisation, training and development programs appear to be well developed, well structured, and relevant to the needs of both the organisations and its personnel.

The National Training Agenda has stimulated the fire and emergency sector like all other industry sectors, to develop and prescribe national training standards based on the competencies required to work effectively and safely in the sector.

The Australasian Fire Authorities Council has developed the Fire Qualifications Training Framework, which prescribes the national training standards required for bushfire fighters at all levels in Australia, with particular reference to firefighting and incident management roles performed under AIIMS (the Australian Inter-Service Incident Management System). A central component of AIIMS is the Incident Control System, which specifies the structure for chain of command and communications during a fire.[1]

In 1998 all fire agencies in Australia, through the Council, began developing their training programs, consistent with the National Framework. ESB has been working on linking all training requirements in the ACT to the national competency and assessment standards. Although the competency modules are part of the national framework, ESB and other similar agencies have developed and are continuing to develop training modules and assessment tools appropriate to the structures, procedures and equipment configurations applying in the ACT.[2]

The Inquiry was advised that training in the ACT is conducted to national standards in each of the necessary skill areas, including the skills required to operate each piece of equipment used to fight a bushfire. Training is provided by qualified firefighters with significant experience in the practical aspects of firefighting.[3]

Training, both initial and refresher, seems to have a high priority in all services. There are four levels of bushfire fighters in the ACT firefighting training framework:

- *Basic bushfire fighter.* This is the initial level of training provided to all firefighters. Once they have completed it, they are permitted onto the fire ground under supervision. Training is the responsibility of each of the brigades, including the parks and forests brigades, although ESB sets the modules and assessment tools for the training program. Eight 'units of competency' need to be completed at this level.

- *Advanced bushfire fighter.* A person with this qualification operates under orders but can do so without direct supervision if required. The training involves four units of competency.

- *Brigade officer*. A brigade officer can supervise bushfire fighters. Training is the responsibility of ESB through the Bushfire Service. There are three units of competency.

- *Group officer*. A group officer can manage an incident where several brigades are operating. Training is the responsibility of ESB and three units of competency are involved.

Additional refresher training is conducted in spring in each year, before the start of the bushfire season. The Bushfire Service maintains an electronic log of the training competencies of every member of the Bushfire Service, both paid and volunteer.[4]

ESB submitted that it takes advantage of:

> every opportunity to provide practical training in a realistic environment ... Hazard reduction burns conducted in 2002 were used to provide volunteers and departmental bush firefighters with training opportunities, particularly in the practical management of fire and command and control measures.[5]

It noted, however, 'This training is difficult to coordinate as the "Permit to Burn" gives a narrow "window of opportunity" to complete the hazard reduction burn and the permit may only be granted a short time before the event'.[6]

The Inquiry was advised of training initiatives taken in response to the December 2001 bushfire experience and of activities designed around possible future scenarios. The following are examples.

The incident controllers exercise

In late October 2002 the ACT Bushfire Service conducted an exercise with a scenario similar to the events that occurred on 8 January 2003. The course was designed for experienced officers, to give them an opportunity to maintain their skills in incident management, and for new officers, to allow them to learn about incident management in a controlled environment. It was a condition that officers had previously completed the general Incident Control System course. Eighteen officers attended the course, which was conducted by the Manager Operations, ACT Bushfire and Emergency Services, the Manager Risk Management, ESB and the Logistics Coordinator, ACT Bushfire and Emergency Services.

The scenario involved a fire that was reported in the morning, about 1.5 kilometres north-east of Bendora Hill. Participants were required to work in groups, assuming the role of incident controller and deciding how they would respond to the fire. The exercise was designed to test the incident controller's role in:

- briefing crews and allocation of units
- deciding on the location of a control point
- determining the future fire growth and the implications of this
- assessing the suitability of a response by tankers, light units or remote area firefighting teams
- preparing a communications plan
- providing situation reports to the communications centre
- reviewing objectives and strategies
- calling for an increased weight of attack.

Participants were required to continually assess these operational factors as the fire grew in size and to consider switching from direct attack to indirect attack. A further scenario involved spot fires occurring in the Bendora Creek area, giving the course participants a different range of problems to contemplate.

Many ACT Bushfire Service officers who were later involved in the early stages of the January 2003 fires took part in the exercise. The course was well received and all present said it provided good training for dealing with fire-control problems in high country.

Map reading

In order to provide a targeted training program during 2002, ACT Forests conducted a 'fire training needs analysis' after the December 2001 fires. As a result of this, a course in map reading was developed and delivered before the 2002–03 fire season. Environment ACT is planning similar training.

Back-burning

An area ACT Forests identified for improving operational skills was back-burning. This task requires significant experience of prescribed burning and a thorough understanding of fire behaviour in response to weather, topography and fuel. At present very few staff in the Department of Urban services have formal training in the conduct of prescribed burning or back burning operations. Given the limited opportunities for gaining experience with prescribed burning and back-burning, ACT Forests sent one of its staff members to a course on fire management techniques that was held by the Department of Natural Resources and Environment in Victoria in 2002. It is intended that this officer will develop and deliver a training course on fire management techniques for land managers in the ACT.[7]

Physical fitness is an important requirement for bushfire fighting. Two years ago, the Department of Urban Services Land Managers Group introduced a compulsory fire fitness policy for all employees involved in firefighting. A similar approach has been taken in the volunteer ranks. The fitness standard requires that people have passed either the moderate or the arduous fitness level. The moderate level is required for anyone going onto a fire ground; the arduous level is a requirement for any person who is a member of a remote area firefighting team. Any fire that requires people to be self-sufficient and away from their vehicle for the full shift is classed as a remote area fire.[8]

For the 121 Department of Urban Services personnel in the forests and parks brigades who were available for testing, fitness assessment results before the 2002–03 fire season showed that 46 per cent met the moderate standard and 54 per cent were at the arduous level.

In public submissions to the Inquiry training was raised as an area of difficulty—see Chapter 3. The Inquiry makes some comments about training in the section entitled 'Scaling-up', later in this chapter.

Although it did not carry out a comprehensive training evaluation of all the organisations covered by its terms of reference, the Inquiry did form the view that there is a case for some additional resourcing to strengthen the skills base of

the emergency services and to provide more opportunities for greater exposure of some of the staff to interstate experiences. In general, competency levels in a formal sense seem quite satisfactory, but over time there has been a gradual decline in the depth of experience of personnel in the ACT Bushfire Service.

Formal training plays a part in redressing this problem, but practical experience—on the ground, dealing with fires—can be gained only by being there. More opportunity for ACT personnel to be exposed to the 'hands-on' experience would be very beneficial in terms of both morale and confidence. This experience will need to be gained principally through interstate attachments.

A joint emergency services training facility

The Government has authorised a scoping project associated with a proposed joint emergency services training facility. The facility would provide classrooms and outdoor training facilities, including hot-fire, rescue and mock structures for urban fire and rescue simulations. There was a possibility that the police driver training complex at Majura Road might be available for redevelopment but this now appears less likely. There remains a need to provide a site for practical operational training for the emergency services.

The Inquiry considers that such a facility is necessary to enable national training accreditations to be achieved as well as helping to provide more realistic practical experience to emergency services personnel in a controlled training environment.

Conclusion

General firefighter training and skills were not highlighted as deficient during the January 2003 event. The need for broader skilling in incident control roles was bought to the Inquiry's attention and some training deficits were discussed, but they did not appear to have a direct impact on the operational response during the emergency period.

Although the ESB submission detailed many of the training activities conducted in the 12 months preceding January 2003, the Inquiry notes the following:

- Use could be made of interstate expertise to 'train the trainers' for the seasonal firefighters brought in during the summer; Victoria's Department of Sustainability and the Environment has a long-running program for more than 600 firefighters annually that appears to hold particular merit.

- A formal exchange program or deliberate attachment during major campaign fires would offer considerable benefits to ACT firefighters and assist in broadening their appreciation of operations in other jurisdictions.

- There should be continued emphasis on Incident Control System training—particularly with the involvement of ACT Fire Brigade and Department of Urban Services personnel, to allow them to become more familiar with the demands of managing complex rural fires.

- Additional resources should be devoted to training in specific skills such as chainsaw use and driver expertise. Both volunteer and paid firefighters claimed there were deficiencies in skills of this kind as a result of a lack of training resources.

- ACT Bushfire Service personnel also need better training in dealing with simple-structure fires as they are the first responders to such fires on rural properties.

- All training should continue to comply with the national competency standards. The Inquiry notes the progress made in this area by ESB agencies. This emphasis should be maintained and, in particular, all firefighters within ESB need to develop common competencies, even though their roles and the nature of their employment will vary.

- With additional funding for training, Bushfire and Emergency Services would be able to accelerate their aim of having all members qualified to the appropriate national competency standard in 18 months, rather than three years as at present.

Recommendations

- In conjunction with the land management agencies, ESB should undertake a review of training and development needs for personnel involved in firefighting activities and develop a detailed future plan, identifying any additional funds required to support such a program. The plan should be submitted to government for consideration as soon as possible. It should take account of the comments and recommendations in this report that bear on training and development, including the need for secondments interstate with other fire authorities.

- The Government should consider the proposals when they are submitted with the view to allocating some additional funding to enable the bushfire authorities to improve the training and professional development opportunities available to paid and volunteer personnel, in the interests of increasing their skill base and experience.

- An outdoor training complex for all of the emergency service organisations should be provided; ESB should develop a detailed proposal for submission to government for consideration.

Notes

1 Department of Urban Services submission, p. 50.
2 ESB submission, p. 69.
3 ibid.
4 ibid, p. 70.
5 ibid, p. 73.
6 ibid.
7 Department of Urban Services submission, p. 50.
8 ibid, p. 51.

Occupational health and safety

On a number of occasions during the course of the Inquiry reference was made to occupational health and safety legislation and its relevance to firefighting. The passage of modern OH&S legislation since the 1970s has strengthened the obligations employers generally are required to accept in order to protect the health and safety of their employees. Duty of care responsibilities, formerly enshrined in the common law, have become more explicit, and better understood, by being given statutory expression.

The ACT *Occupational Health and Safety Act 1989* generally contains provisions similar to those in equivalent legislation in other jurisdictions. It imposes on employers a duty to '... take all reasonably practicable steps to protect the health, safety and welfare of the employer's employees' (s. 27(1)). 'Reasonably practicable steps' embraces the maintenance of a working environment and systems of work that are compatible with the aim of protecting employees from harm. In a firefighting environment, this includes provision of adequate equipment, appropriate training and instruction, proper supervision and use of operational methods and practices that are developed over time, being mindful of best practice in the firefighting industry.

It is in the nature of firefighting that a level of risk must be accepted as an ever-present factor. Yet the conscious exposure of personnel to the risk of injury in the course of fighting bushfires would, at first glance, appear to fit uncomfortably with a literal interpretation of legislation that aims to limit or eliminate the exposure of people to known hazards in the workplace.

This is an important concern in the bushfire-fighting sector, since governments around Australia generally have not sought to exclude the fighting of bushfires from the application of OH&S legislation. Although the ACT Act allows the relevant Minister to exempt all or some provisions of the Act from application to a class of workplace, none have been so exempted.

How then should the 'reasonably practicable' provision be applied? If too stringent an interpretation is applied to perceived safety matters there is a risk that bushfire-fighting capacity may be weakened by safety-related decisions that are risk averse, with possibly serious consequences for the community. On the other hand, no one would condone a reckless disregard for procedures and safeguards that are designed to minimise the risk of harm to bushfire fighters.

The Industry Commission dealt with this dilemma in the report of its 1995 Inquiry into Occupational Health and Safety:

> Ultimately, the issue of 'reasonably practicable' involves a value judgement. The correct standard is that of the reasonable and prudent employer. There is no objective and abstract definition of how such an employer will act. That must be determined on the particular facts of each case.
>
> Faced with this difficulty, the law has turned to 'the safety of numbers'. It will generally be assumed that if a certain method of work is a common practice in the industry, then to follow that practice is not unreasonable or imprudent. This is not an incontrovertible presumption, but an inference which can be displaced.
>
> Where employers can show they have complied with common practice, employees will find themselves making their claim 'in the teeth of the evidence' *(Paris v Stephney Borough Council* [1951] AC 383). It is possible, although difficult, to show that common practice is unreasonable, that the industry is dominated by unreasonable employers, and that the reasonable employer would have acted differently ...
>
> If there is a risk in a particular job against which no precaution can be devised, then there can be no liability on an employer if a worker suffers an injury. This is the only remaining area of risk which a worker may be said to have voluntarily accepted. A risk which is unpreventable must be a necessary one. If it could be eliminated only by discontinuing the operation, this is something the common law does not require of employers.[1]

On this basis, it seems reasonably clear that practices that are consistent with a general industry approach would comply with the 'reasonably practicable' test.

All Australian coroners are able to hold inquests into fire deaths and, with the exception of the Northern Territory and Western Australia, into fires where deaths have not resulted. In the past decade or so firefighting personnel have increasingly been subject to investigation in broad-ranging coronial inquests. This has placed a growing burden on volunteer and salaried firefighters to attend inquests as witnesses; on occasions the experience has been a difficult one for them since they are often called on to justify or defend their actions. The increasing burden of accountability may itself sometimes encourage fire controllers to err on the side of caution, possibly to the detriment of the effectiveness of the fire-suppression effort.

In this connection, the role of incident controller, as applied in the ACT, deserves mention. Incident controllers mostly operate on or near the fire ground, far from their headquarters. They are usually in the best position to assess the actual situation, and the Incident Control System adopted by all bushfire organisations, places emphasis on the vital role they play. On matters that require judgments about safety factors that can have significant operational implications, an incident controller should have the opportunity to consult with more senior personnel on the scene, such as a group officer, or with operational directors back at headquarters before decisions that are not clear-cut are reached.

The Lynton coronial inquiry's recommendations refer to the appointment of a 'safety officer' who could fulfil this function. The Inquiry also received a proposal for an 'operational mentor' to assist with command development and succession planning. Liaison with such a person would not only require that the hazards be clearly enunciated, and independently tested; it would also broaden the experience applied to the matter in hand, as well as increase the firefighting organisation's accountability for the decision ultimately taken.

The Inquiry considers that on 8 January 2003, the decision about whether or not to stay and tackle the fires overnight at Bendora was influenced to some degree, at least in the mind of some of the individuals involved in the decision-making chain, by concerns about occupational health and safety. Despite what was said, the Inquiry was of the view that there was no real examination or probing by Bushfire Service headquarters of this critical decision. Had that occurred, the relevance and weight to be attached to any safety issues present, their significance in operational terms, were they judged to be decisive factors and the level of the organisation at which responsibility for a decision was borne, would have been much clearer.

Several matters relating to the application of the ACT OH&S Act to volunteers were raised with the Inquiry. Volunteers, as distinct from employees, can be extended coverage under the Act through a ministerial instrument. This has not occurred. By virtue of another provision in the Act, however, employers have a duty to protect people from risks at or near a workplace for which they have responsibility, and this had been relied on as the basis for extending OH&S coverage to bushfire volunteers. The Act seems to apply to volunteers, but the matter is not totally beyond doubt and has never been tested in the courts in the ACT. It is therefore highly desirable, in the Inquiry's view, that a ministerial directive be issued so that any legal uncertainty can be removed.

The Inquiry was advised that extension of the Act to volunteers in this manner, while clearly necessary, would have the effect of potentially exposing some volunteers to prosecution under the punitive provisions of the OH&S Act. The *Bushfire Act 1936* provides a protection against civil liability for damage, death or personal injury caused in the honest exercise of functions under that Act: obviously, this should continue. Any possible discouragement to volunteers on the ground that the risk of prosecution would be increased under the OH&S Act should be removed. A relatively simple legislative amendment should be made to ensure that upon issue of the Minister's directive the protections under the Bushfire Act against prosecution would prevail, thereby preserving the longstanding status of volunteers.

Recommendations

- A procedure should be adopted whereby important operational decisions affecting the safety of firefighters are discussed with a more senior officer before implementation, whenever this approach is feasible.

- The responsible Minister should clarify the application of the ACT *Occupational Health and Safety Act 1989* to volunteers by issuing a ministerial directive.

- Upon the Minister's directive coming into force, a legislative amendment should be made to continue the application of the protections against prosecution afforded under the *Bushfire Act 1936*.

The relationship between the fire management and land management agencies

A number of submissions the Inquiry received referred to the relationship between the ACT Bushfire Service and the public land managers. In Victoria, fires on public lands are the responsibility of a fire service established within the Department of Sustainability and Environment specifically for this purpose. Such an arrangement offers several important benefits. First, it helps to reinforce the message that fire prevention and suppression are an integral part of land managers' role in protecting the land they control. This can have considerable psychological value in helping to shape the ethos of an organisation and in providing a balance between fire-prevention activities and environment protection and other socially desirable objectives.

Second, an arrangement of this nature can have practical value, in that the people who work in public parks and forests gain an intimate knowledge and understanding of the land they supervise. This is of inestimable value in a fire emergency when local knowledge and an understanding of the terrain and what it contains are at a premium. There are also practical spin-offs such as being able to draw on equipment, vehicles, plant, aerial support and so on, that are otherwise used for normal, day-to-day activities.

The ACT is far too small to contemplate the establishment of a dedicated bushfire service for the forests and parks agencies. The formation of the two Bushfire Service brigades staffed by personnel from the forests and parks agencies is an attempt to achieve a similar objective, but unfortunately the organisational separation between ESB and the Bushfire Service on one hand and the land managers in the Department of Urban Services on the other, has contributed to the relationship not being as close as it might be. A degree of tension between the two sides, while not necessarily marked, was apparent to the Inquiry.

The Department of Urban Services submission drew attention to the fact that, while each land management agency is responsible for specific areas of land, an agency has no control over fire suppression on that land. Nor is there any legislative mandate for land management agencies to undertake suppression or provide fire-suppression resources. The Inquiry supports the current practice of the Bushfire Service attempting to allocate incident controllers consistent with land management responsibilities; for example, officers from ACT Parks were initially appointed as incident controllers for the Bendora and Stockyard Spur fires. The Inquiry believes this practice should be reinforced through the

provision of additional seasonal staff to support the land managers' initial response to fires in parks and forests. This is further discussed in Chapter 6. With these resources in place, the initial-response responsibilities proposed for land management agencies in relation to fires on land they manage, should be reflected in ACT Bushfire Service Standard Operating Procedures.

The Department of Urban Services also suggested that there is potential for fire-suppression planning and operations to occur without reference to identified land management objectives and policies. It referred to an ambiguity in reporting and structural arrangements for land management agencies during suppression operations directed by the ACT Bushfire Service. Further, the Department claimed that during the fires in January 2003 the legislative arrangements did not afford the land managers the opportunity to participate fully in the decision-making processes associated with managing the event.

For its part, the ACT Bushfire Service advised the Inquiry that at times it felt it had no control over the availability of forests and parks brigade personnel it was required to manage. There had been some difficulty with the release of the more senior personnel in these brigades—who are members of a small, highly qualified management cadre of the Bushfire Service—for bushfire duties not associated with forests and parks. The land managers' lack of sensitivity to the Bushfire Service's need for maintained track access was also mentioned, as was the disposal of assets not needed by the forests and parks authorities for their own purposes but that represented a loss of facilities for the Bushfire Service.

A number of the propositions by both parties are arguable, and it was not for the Inquiry to seek to arbitrate. Nevertheless, the existence of these views suggests that steps need to be taken to bring the two areas closer together.

The genesis of the problem may have been a series of decisions made since 1989, when the ACT gained self-government, that had the effect of dividing the management of public land in the ACT between various groups, each with its own management charters—for example, commercial plantations, conservation reserves, recreational nature parks, and urban open space—whereas before 1989 all public land was managed by a single entity.

In addition, when the Bushfire Service was merged with the other emergency services upon the formation of the Emergency Services Group (the forerunner to ESB) most of the bushfire expertise within the land management agencies was lost to the Bushfire Service. The land management agencies have only just begun to rebuild this expertise. A decision to introduce a full-time fire

coordination policy officer in the Department of Urban Services, to assist with managing the portfolio's fire-related responsibilities is a move in the right direction and is supported by the Inquiry.

Various recommendations in this report—concerned with the number of fire-related personnel the ACT land managers should employ during the summer season, increased funding for training, the allocation to the forests and parks brigades of formal responsibility for being the first responders to fires that break out on their land, better access to plant and equipment, and a firmer responsibility for working with the ACT Bushfire Service in establishing and maintaining a better network of fire tracks and trails—are designed to strengthen the sense of obligation the land managers should have for protecting the land in their care from the damaging effects of wildfires.

The other difficulties between the two parties will be resolved only through better communication and an understanding that both portfolios need to work very closely, in a spirit of mutual trust. This will happen only with the right lead from the top of the two organisations concerned.

Recommendations

- The Chief Executives of the Department of Urban Services and the Department of Justice and Community Safety should work together to develop the means by which the public land managers and the ACT Bushfire Service can achieve a stronger, mutually supportive relationship.

- Operational procedures should be amended once additional land management resources are in place, to reflect the responsibility of land managers to initiate the first response to fires on land that they manage—within the overall operational response of the ACT Bushfire Service.

The December 2001 fires

The Inquiry examined the 2001 fires and the subsequent response to them in order to gain an insight into how active the Emergency Services Bureau was in analysing the firefighting experience and what steps were taken to learn from the event. The Inquiry considered it would have been reasonable for ESB to draw on the experience and lessons of the 2001 event when responding to the January 2003 fires. To inform itself about the 2001 event, the Inquiry reviewed the ACT Bushfire Service 'Report to the ACT Chief Coroner on the Bushfire Events of December 2001' and another ESB document entitled 'Strategic Debrief Action Status Summary'.

On Christmas Eve 2001 a series of fires threatened central Canberra. In all, six outbreaks occurred, at Huntly, Stromlo, Bruce Ridge, Red Hill, Oaks Estate and Wanniassa Hills.

It became a multi-agency event, involving 77 firefighting appliances from the ACT, Victoria and New South Wales, together with aircraft and earth-moving equipment. These were the most recent significant fires to have occurred before the January 2003 event and, in the context of that event, the 2001 fires are significant for several reasons:

- They too threatened suburban Canberra.
- Weaknesses in the response were exposed before the 2003 fire season.
- The nature of fire impact in parts of the Stromlo pine plantation was experienced during a serious fire event.

Dry conditions and high fuel loads also characterised December 2001. 'Forecasts for the Christmas period indicated that the ACT was likely to experience some of the worst fire danger levels seen so far this [2001] bushfire season ...'[1] 'The strong westerly winds experienced on the afternoon of Christmas Eve were forecast to continue for Christmas Day.'[2] The ACT Bushfire Service witnessed a powerful demonstration of severe fire behaviour under extreme conditions. The fuel loads varied at the different fire sites, but the forest fuel loads were consistent with those in January 2003.

Command and incident management

The ACT Bushfire Service report stated that incident management was 'in accord' with the national Australian Inter-Agency Incident Management System Incident Control System. As discussed in the section entitled 'Incident command and control' in this chapter, the Inquiry considers that the

ACT has developed a distinctive application of the Incident Control System, with a headquarters management team at ESB and an incident controller for each particular fire. This approach is not replicated in other jurisdictions: elsewhere, when a number of fire events occur in close proximity to each other or threaten a single location, there are likely to be sector, and possibly divisional commanders appointed in the field and one incident controller for the overall event. As ESB described it, 'The incident controller has the responsibility for developing the incident control objectives and for managing the resources assigned to their incident'.[3]

For the December 2001 fires in the ACT the Chief Fire Control Officer 'took control of all bushfire operations'[4] and established a 'headquarters management team'. Nevertheless, individual ACT Bushfire Service incident controllers were appointed to five of the six outbreaks (the Oaks Estate fire being controlled by a NSW Rural Fire Service officer), although separate supporting incident management teams were not necessarily established. In 2003 the Chief Fire Control Officer did not take control until Thursday 16 January, although the headquarters (now known as the service) management team was established on 9 January.

A state of emergency

No state of emergency was declared in 2001. The matter was discussed by the Chief Fire Control Officer's team and members of the Emergency Management Committee, but '... it was felt by all concerned that the coordination of the fires and supporting agencies was not beyond the provisions of the Bushfire Act ... It was also felt that there would not have been any command, control or coordination advantage in declaring a state of emergency'.[5] Despite this, both the ACT Bushfire Service and ACT Policing initiated road closures and ACT Policing initiated evacuations. The ACT Bushfire Service report states that all actions required to respond to the fire and protect the community did occur. Subsequently, further action (largely centred on ACT Emergency Services) was taken to improve the coordination of road closures. The view about the merits of declaring a state of emergency has changed in the light of the 2003 event, even though the fundamental elements have not changed, the only difference being the bigger scale of the 2003 emergency.

Public warnings

The December 2001 fires are thought to have been deliberately lit, so there was no opportunity to warn the public before the event. Once the event developed, however, the Standard Emergency Warning Signal was used on public radio over a two-hour period before advice and warnings about the nature and location of the fires were issued. Periodic media interviews were also conducted. A total fire ban was declared for 24 to 27 December. The ACT Ambulance Service and the Department of Health issued public health information and advice.

Following the fires the ACT Media Sub-Plan was to be reviewed. In May 2002, a meeting was called involving representatives from ACT Policing, ESB's Community Education and Public Relations section and the Public Relations area of the Chief Minister's Department to review the Plan and coordination of the media within the ACT and Commonwealth. It was intended that a working group involving ACT Policing would be established to consider public communication aspects including the use of Canberra Connect. By late June 2002 the working group had developed a project outline and discussions had commenced with the Chief Minister's Department. The group was also to assist ESB request media organisations to regularly broadcast Standard Emergency Warning Signal community service announcements. Revised media arrangements for an emergency were practised as part of Exercise Minotaur, a national foot-and-mouth disease exercise held in September 2002. Review of the Media Sub-Plan was still ongoing when the January 2003 fire emergency occurred.

Evacuation

Police and emergency services had differing views about evacuation procedures in 2001, a situation that was never satisfactorily resolved. The ACT Bushfire Service report notes, 'Each circumstance was dependent on the situation and the judgement of the officer providing the advice ... While there were no safety issues arising as a result of the evacuation decisions and processes, improvements could be made to the ACT's bushfire evacuation procedures ...'[6] A working party of police and ESB personnel had been working on this through a review of the Community Recovery Sub-Plan, although the work was incomplete at the time of the January 2003 fires.

Night firefighting did occur

On the night of 24–25 December firefighting activity took place, with the aim of 'constructing control lines around the fire edge'.[7] As expected, fire activity overnight was 'relatively calm'. Although the Inquiry accepts that there was less hazard associated with the topography of the 2001 fires compared with the 2003 fires, it points out that night firefighting did occur in 2001 and was effective.

Operational communications

The ACT Bushfire Service report notes that the existing ACT Bushfire Service VHF communication system was stretched on 24–25 December 2001 but did not appear to fail: 'The ACT Bushfire Service radio system provides fairly reliable, clear communications, particularly in rural areas'.[8] The Inquiry found that, although the ACT Fire Brigade uses an incompatible UHF system, all ACT Fire Brigade vehicles are fitted with VHF radios in order to communicate with ACT Bushfire Service vehicles and personnel. No specific changes to communications resulted from the 2001 fire event. Continuing concern that the ACT Fire Brigade failed to switch to ACT Bushfire Service radios when required by Standard Operating Procedures was reported, but this was considered a procedural weakness not requiring systemic change. ESB has since commissioned and received an independent consultant's report on radio infrastructure requirements, and the Government has allocated initial funding for 2003–04, with an express intention to spend substantially more over the next three years to substantially upgrade communications for all emergency service agencies.

Communicating with interstate firefighters

The ACT Bushfire Service report highlights communication limitations with visiting New South Wales and Victorian firefighters. The report states that communication with New South Wales firefighters 'relied on face-to-face conversation and a limited number of portable radios that could be deployed with the NSW Rural Fire Service commanders'.[9] Relying on face-to-face communication is flawed: it greatly endangers firefighters. This highlights the difficulties resulting from each jurisdiction developing its own radio system independent of adjacent jurisdictions, as is discussed in the section headed 'Communications and computer-aided dispatch' in this chapter. The Inquiry noted the 'unified command approach' adopted by Country Fire Authority firefighters from Victoria and considers that any future communications system established in the ACT should include the capability for visiting firefighters to be 'fitted out' with compatible portable communications or be accompanied by ACT firefighters with portable radios.

This matter is of sufficient importance for the Inquiry to consider interim measures or procedures should be put in place prior to the 2003–04 fire season to ensure that visiting fire crews retain a capability to communicate with ACT firefighters on the fire ground.

Communication centre difficulties

ESB operates a single communication centre for ambulance and fire calls; it is manned by the respective services. ACT Fire Brigade personnel answer rural fire calls. The report of the 2001 fires highlights deficiencies with the communication centre's procedures once the number of calls had increased, which resulted in inadequate logging of calls and events. This occurred again in 2003—to a more serious degree. The Inquiry notes that the computer—aided dispatch project is now well advanced and is funded in the 2003–04 Budget. While the new system will overcome many of the concerns identified, it is incumbent on ESB management to ensure that until the system's introduction, other measures are taken to overcome known deficiencies.

Conclusion

Having reviewed the 2001 fires and subsequent actions, the Inquiry concluded as follows:

- The 2001 fires provided ESB with a significant opportunity to trial its arrangements and responses some 13 months before the January 2003 fires. Although the scale of the 2001 event was much less dramatic, ESB entered the 2003 event with recent experience in dealing with a very serious fire that involved a major threat to suburban Canberra.

- The 2001 event occurred during similar—albeit less severe—drought conditions, providing the ACT Bushfire Service with first-hand experience of fire behaviour in very dry conditions.

- The declaration of a state of emergency was not seen to be necessary in 2001. ACT Policing initiated evacuations without the assistance of special powers, and yet this was the prime reason why a state of emergency was sought in 2003. The difference in view on evacuation between ACT Policing and ESB should have been resolved following the 2001 experience.

- Opportunities existed—and in many instances were taken—to review and improve ESB performance before the 2002–03 fire season, although it is of note that the question of disparate views in relation to evacuation remained unresolved when the 2003 fires broke out, and some difficulties still existed in relation to communicating with interstate fire crews.

The 2001 fires did not bring to attention some difficulties that emerged with the Incident Control System during the 2003 fires (see the section headed 'Incident command and control' in this chapter). The smaller scale and shorter duration of the 2001 fires probably masked the difficulties. Despite the 2001 event stretching ESB agencies and threatening the public, the fire did not destroy any houses in Canberra, which may have served to reinforce the Canberra experience of 50 years—that urban housing was most unlikely to be lost during summer fire events. In summary, ESB identified a number of lessons from 2001 and had a follow-up process in place to monitor implementation of changes that flowed from the experience. Although a number of the lessons led to changes, some significant problems remained unresolved. These should continue to be pursued.

Notes

1 ACT Bushfire Service report to the Chief Coroner, p. 4.
2 ibid., p. 16.
3 ibid., p. 6.
4 ibid.
5 ibid., p. 19.
6 ibid., p. 21.
7 ibid., p. 16.
8 ibid., p. 24.
9 ibid., p. 26.

Commonwealth and interstate contributions

Commonwealth assistance

The national emergency management system is a partnership arrangement between the Commonwealth, state and territory and local governments and the community itself. The Commonwealth provides guidance and support to the state and territory governments, helping them develop and supporting their capacity to deal with emergencies within their boundaries. The Commonwealth also provides financial and physical assistance when the response to a disaster is beyond the capabilities of the state or territory concerned.

Emergency Management Australia is the primary Commonwealth agency for coordinating the provision of physical assistance when Commonwealth help is sought. The Executive Director of the ACT Emergency Services Bureau is the designated ACT person authorised to request Commonwealth assistance. During the January 2003 bushfires, Emergency Management Australia and ESB maintained close contact from an early stage.

Defence support at an assembly point prior to deployment. Photo printed with permission of the *Canberra Times*.

The first request for Commonwealth assistance was made on 12 January—for four military helicopters to help with aerial bombing and reconnaissance and four Army bulldozers to help with the construction of firebreaks. This assistance was provided. During the ensuing three weeks considerable Defence Force resources were made available for both the firefighting effort and the recovery activities. This assistance included use of Navy helicopters

and Army bulldozers, together with graders, water tankers, an RAAF fuel tanker, and a number of experienced logistics and operations personnel. Appendix D lists the different forms of Defence support.

Liaison between the ACT Government and Commonwealth authorities—through the established mechanisms involving ESB and Emergency Management Australia—worked very smoothly and reflected a sound working relationship between both bodies. The process was aided by Emergency Management Australia having liaison officers on duty at ESB during the peak of the crisis to facilitate any requests for Commonwealth assistance.

The Director General of Emergency Management Australia advised the Inquiry that the Prime Minister had directed him to provide all the support the ACT asked for. He also commented that the ACT had a well-developed, well-thought-through set of emergency management arrangements that, despite not being tested with an event of the size of the 2003 bushfires, had nevertheless been tested during the 2001 bushfires and several other emergencies. It had also been tested with local and national incident scenarios. The Director General's impression was that, although some of the arrangements might be modified in the light of the recent fires, the overall structure was sound and the personnel involved appeared to be well trained and competent.

The Commonwealth Bureau of Meterorology provided substantive and important support to ESB throughout the emergency and the entire fire season. Its submission to the Inquiry provides insight into the particular features of the fire and is an important record of events. The Bureau of Meterorology brought on additional staff to assist in giving regular and special briefings that contributed to ESB's planning of its operational response. While not raised as a specific imediment, it was brought to the Inquiry's attention that there was no automatic weather station in the Brindabellas and the next automatic weather station west of Canberra is at Young in NSW. The location of an automatic weather station at for example, Bulls Head, would provide the Bureau of Meteorlogy and ESB with a more accurate measure of the weather conditions in the mountains. It would also assist Canberra weather forecasting throughout the year. The cost of an automatic facility would be about $40 000. The value would be considerable.

Interstate contributions

New South Wales was involved in the 2003 bushfires in two ways. It dealt with the bushfires caused by lightning within its own borders (but adjoining the ACT),

which had arisen from the same dry storm that affected the Territory. It also provided support to the ACT by supplementing the local firefighting and ambulance resources.

Apart from fighting the McIntyre Hut fire (see Chapter 2), New South Wales also provided support in the ACT in the following ways:

- A liaison officer from NSW Rural Fire Service was stationed at Queanbeyan for extended periods during the emergency and on 18 January, the NSW Rural Fire Commissioner dispatched an Assistant Commissioner who visited ESB.

- On 18 January, as a result of liaison between staff at Queanbeyan and Curtin, a number of aircraft operated out of the Yarrowlumla Fire Control District as the McIntyre Hut fire spread into the ACT. The Rural Fire Service Commissioner diverted an Erickson air crane from Jindabyne to Canberra, which was directed at property protection.

- Extensive GIS support in the form of line scans from aircraft, mapping products, and fire plots, was provided by the NSW Rural Fire Service, both during and after the fire. This sophisticated specialist support was of great benefit.

- The ACT Bushfire Service and the NSW Parks and Wildlife Service have a cross-border agreement on fire management and suppression (dated December 1998). There is no similar documented agreement between the ACT Bushfire Service and the NSW Rural Fire Service; cross-border support between the two organisations has been arranged on the basis of personal contacts and continuing relationships. Talks have been held, however, and the NSW Rural Fire Service has forwarded a range of proposals that could form the basis of a memorandum of understanding. The Inquiry supports the steps that are being taken.

- At the request of the ACT Fire Brigade, the NSW Fire Brigade provided a task force comprising four urban pumpers, two support units carrying portable pumps, and two command vehicles. It arrived in Canberra during the evening of 18 January and provided substantial assistance with the mopping-up operations that had by then begun.

- On 16 January, the Ambulance Service of New South Wales was formally asked to provide assistance. Two crews arrived on 17 January and on 18 January a liaison officer and further crews arrived. A NSW aero-medical helicopter also provided support to the ACT, releasing the Snowy Hydro Southcare helicopter to continue firebombing.

The Inquiry became aware of comments that interstate crews travelling to Canberra to contribute to the firefighting effort on 18 January were turned back. There was some suggestion that ESB or the ACT Bushfire Service directed the crews to turn around. The Inquiry raised this specifically with ESB and the Chief Fire Control Officer. Because the crews referred to were not ACT crews and not in the ACT when this alleged direction was given, no ACT agencies or officer had jurisdictional authority to influence the crews. The Inquiry was given unequivocal assurances that at no stage did ACT officers direct any interstate crew not to arrive in Canberra or to turn around. The Inquiry was advised that if this direction was given, it most likely would have emanated from within the affected crew's organisation.

The Queensland Fire and Rescue Service made an offer, which was accepted, to assist with protecting the rural–urban interface at Belconnen. Two strike teams and support staff, totalling 56 people, arrived in Canberra on Tuesday 21 January; among them were ambulance officers, mechanics and communication staff.

Conclusion

Commonwealth and state government personnel and equipment provided invaluable assistance to their ACT colleagues and to the ACT community generally. Their contributions have been acknowledged by the Chief Minister. The ready assistance provided on this occasion and in the past is an important means whereby individual jurisdictions can deal with large emergencies, which are sometimes beyond their capacity to plan for, and handle, without external reinforcement.

The ACT reciprocates from time to time in providing assistance to other states. As a small jurisdiction it tends over time to provide a higher level of assistance than its size would suggest is reasonable. This is helpful to the ACT as it builds more expertise into its own ranks.

Recommendation

That an automatic weather station be located in the Brindabella Range to assist with fire weather forecasting.

Scaling-up

In small jurisdictions such as the ACT, where the resource base is limited, it is a constant challenge to meet the range and diversity of responsibilities governments are obliged to assume. Larger jurisdictions can more easily secure the economies that come with scale and they have more resources at their disposal.

The Chief Executive of the Chief Minister's Department commented on the approach of the ACT public sector in these terms: 'Appropriately managed structures are usually more effective than a wide range of smaller separate organisations, especially where these organisations are expected to combine in the achievement of complex and large scale tasks ...' Across the ACT public sector a range of innovative approaches have been adopted to compensate for the disadvantages that a lack of size brings. Planning for and responding to very large emergencies is a good case in point. Disasters and emergencies are not respecters of political or geographical boundaries. The consequence is that the benefits self-government brings are tempered by the need to protect the Territory's citizens and assets from the impacts of occasional, potentially very damaging events.

The national emergency management arrangements

The national emergency management system is an important safeguard, particularly for the smaller states and territories, in helping to mobilise outside resources to assist a state or territory in dealing with a crisis beyond the limits of its own resources. This ability to scale up is particularly important in the case of bushfires, when political and organisational boundaries are often breached. The procedures for seeking assistance are well understood and well tested and, as was confirmed during the January 2003 fires, the arrangements are very responsive and operate with a minimum of formality.

Cooperation with New South Wales

Ideally, the ACT and the surrounding regions of New South Wales should cooperate very closely during major events that have the potential to spill over the border. Over time, a good relationship has built up between the ACT Bushfire Service and the NSW Rural Fire Authority, and an atmosphere of mutual support exists. It has been common for one service to provide support and assistance to the other: the recent fires are a good example. However, the arrangements have never been formalised. Since the 2003 fires the services have begun discussions with a view to developing a

memorandum of understanding, to clarify and formalise mutual-support arrangements for the future. This initiative is strongly supported.

The facts that fires do not recognise political boundaries and that support is provided across borders, and the reality that the ACT is an island within NSW, point to opportunities for a broader management approach in the ACT and surrounding region.

The history of fires in the ACT and surrounding regions and the nature of the vegetation and terrain suggest that if political boundaries did not exist, at both the state and local government levels, the best arrangements for managing fire suppression and providing the necessary specialist support would be based on a larger regional approach. The Inquiry did not pursue the feasibility of this, and the political considerations are such that it may not have great appeal. From a purely practical fire-suppression viewpoint however, there is merit in keeping a regional concept in mind and then pursuing cooperative arrangements that, to the maximum extent possible, offer a seamless approach to strategic planning for and joint or shared management of, large bushfire events.

Among the initiatives that should be pursued are greater opportunities for joint exercises and training, closer cooperation in the coordination and planning of responses to major bushfire emergencies, a stronger sense of 'jointness' in managing large regional firefighting operations, greater cooperation in the deployment of equipment and personnel, closer links in the development of communication protocols, adoption of common incident control arrangements, and agreement on common operational terminology. Apart from the advantages these efforts would bring in terms of creating a more integrated, regionally focused bushfire capacity, the closer personal relationships and better understanding of each other's arrangements, that would ensue could only lead to an improvement in the effectiveness of the two services acting alone.

At a more general level, the Inquiry considers that a strengthening of the relationship between the ACT and New South Wales would be worth pursuing across government agencies generally, where there are common interests. During the Inquiry comments were made to the effect that, in NSW, many systems and administrative mechanisms as part of statewide arrangements were in operation and fully staffed in the adjoining areas of the state. With appropriate clearances, ACT authorities could have taken advantage of this, in both the response and recovery phases. It was asserted that the nature of the regional support potentially available needed to be better understood and reflected in the ACT's Emergency Plan and its subsidiary plans

or in mutual cooperation arrangements developed between kindred agencies. In this way the ACT could receive the benefit of making use of arrangements that are tried and proven, rather than having to independently spend effort designing unique arrangements to meet occasional eventualities.

A somewhat similar approach has already been adopted in regard to health care, with Canberra Hospital acting as a major regional health centre for southern NSW. The ACT and NSW jointly operate the Snowy Hydro Southcare helicopter medical retrieval service, which serves southern NSW as well as the ACT.

Volunteers

The use of volunteers to provide the operational personnel needed in bushfire and emergency service bodies is a longstanding tradition in Australia. It has been effective in giving opportunities to many public-spirited individuals from many walks of life to contribute to the provision of essential community services. Each year over a quarter of a million Australians contribute voluntarily to safeguarding the community and helping with the recovery from disasters. Because many emergencies are seasonal in nature or occur irregularly, reliance on volunteers is a particularly useful way of dealing with these threats to life and property. The volunteers are not paid for their contributions, so governments gain much advantage from this form of public service, as does the community itself.

ACT Emergency Services personnel providing storm damage support after the fires. Photo printed with permission of the *Canberra Times*.

If volunteerism waned, substantial additional costs would have to be borne by taxpayers. It is thus in the interests of all that the community continues to nurture and encourage volunteers by recognising and supporting the very valuable contribution they make to the wellbeing of Australian society. This is no less important in the ACT than elsewhere. Any changed arrangements in the organisation and provision of fire and emergency services in the ACT should therefore continue to include a significant role for volunteers, in acknowledgment of their importance to the health and viability of a comprehensive emergency services structure.

Although volunteers are not paid for their work, they do not come without cost: they need to be trained and equipped, and facilities need to be made available for housing their vehicles, their tools of trade and their basic amenities, which traditionally are fairly frugal. The Inquiry received submissions suggesting that money was sometimes tight for training and operational exercises. A modest additional injection of funds for these purposes would be welcomed, as a morale boost for volunteers, to help maintain their enthusiasm and commitment, and to develop their skills. It would also assist with steps being taken to increase volunteer retention rates.

Summer support staff

Some states' parks and forests authorities recruit paid summer casuals to supplement their full-time staff, so that adequate numbers of personnel are available for firefighting purposes. The people recruited are typically young and fit and well suited to the more arduous tasks associated with direct attack firefighting. They are particularly useful in a rapid-response role (as remote area firefighting teams), when fires are often tackled in difficult terrain and vehicle support is not immediately available or is limited in number. These people need to be suitably trained to meet the normal firefighting standards, and it would be expected that many would be re-engaged over successive seasons.

The ACT would benefit from the engagement of personnel for this purpose. When not employed on firefighting duties, they could be used to perform maintenance tasks to assist fire prevention and in doing so gain a familiarity with the environment that would be useful for their role as firefighters. In contrast with forest and parks staff, their primary focus would be on bushfire prevention and suppression.

The establishment of such a capacity within land management agencies will assist in developing a greater responsibility for land managers to be the first responders to fire outbreaks on land they manage even though such responses would remain within the ACT Bushfire Service operational structure.

Remote area firefighting teams

Remote area firefighting teams are referred to in the sections of this chapter dealing with aerial operations and fire access. RAFTs provide a degree of flexibility and timeliness that is not available from conventional vehicle-based firefighting crews.

They can be deployed by air into existing landing sites in remote areas or, with one member having a chain saw, be winched into the location of a fire to clear a landing zone for the helicopter. (Of course, this method of deployment is dependent on the availability of a suitable medium-sized or larger helicopter.) Once on the ground, RAFT crews use hand tools to develop containment lines around a fire. It is difficult, demanding work that is often carried out at night, when fire behaviour is most benign.

The ACT does have some RAFT-qualified personnel. They are volunteers and paid forests and parks staff who have volunteered for this work and attained the requisite level of fitness and acquired the necessary skills. The ESB submission made only one reference to RAFT crews[1] on 10 January, at the Bendora fire, although the Inquiry was advised that they were specifically used on a number of occasions. They were not used during the initial response to the fires.

Other fire services use personnel in this role to provide a rapid response in remote areas so that a fire can be attacked more rapidly—to improve the prospect of containing the spread of the fire while reinforcements are assembled and brought to the fire ground. If summer casuals were trained and used in this role to supplement other resources, the Inquiry considers this would be a valuable contribution to the ACT's bushfire readiness.

Army firefighters preparing to back-burn using McLeod tools and drip torches. Photo courtesy Australian Defence Force, Corporal Belinda Mepham.

Recommendations

- The current discussions aimed at developing a possible memorandum of understanding between the ACT Bushfire Service and the NSW Rural Fire Service should proceed as a matter of urgency.
- The ACT should initiate discussions with New South Wales authorities in relation to ways in which the current relationships could be developed at a regional level, with the aim of strengthening the linkages between kindred agencies and identifying how the resources available in the ACT and the surrounding regions could be more easily mobilised in serious emergency situations—to the advantage of both jurisdictions.
- The level of resources for the training and operational exercising of volunteer bushfire and emergency service personnel should be increased, to improve current skill and experience levels.
- Environment ACT and ACT Forests should employ additional summer personnel as firefighters and fire prevention workers to improve the ACT's firefighting capability, particularly in terms of rapid deployment to fires in remote areas.
- These staff should provide land management agencies with a capability to be first responders to fires on land they manage.

Notes

1 ESB submission, p.105.

> …my experience over many years has demonstrated to me that forestry firefighting crews are without equal. This is because the crews usually work in the area they are required to undertake fire suppression, so they know the fuels, terrain and tracks. They also work together, so they operate effectively as a team, and because other fire related duties such as hazard reduction and high intensity slash reduction burns are a normal part of their duties.
>
> — Canberra resident

Funding of emergency services in the ACT

Integral to any consideration of the adequacy of the response to the January 2003 bushfires is an analysis of the funding made available to emergency services.

From the Inquiry's perspective, publications and reports of the Commonwealth Grants Commission, an independent statutory authority, proved an extremely useful basis for making interjurisdictional comparisons. As might be expected, however, there are qualifications to this kind of interjurisdictional analysis, and it provides no more than the broadest of indications about the efficiency of the way funds are expended and the priorities of government. Nevertheless, the information does support a conclusion that for at least the last four years the ACT has been spending considerably more on public safety and emergency services than the average level of expenditure on such services elsewhere in Australia.

By way of background, when the Commonwealth Government introduced the Goods and Services Tax in July 2000, it decided to distribute to the states and territories all the revenue collected, in accordance with a policy of fiscal equalisation. The Commonwealth Grants Commission advises the Government (Treasury) on the per capita relativities[1] used for distribution of the pool of general revenue assistance to the states and territories; that is, it determines the relative share of the pool for each jurisdiction, not the size of the pool.

Importantly, the Commission is required to formulate recommendations based on the principle of horizontal fiscal equalisation; that is, a state or territory should have the financial capacity to provide a comparable range and standard of government services, provided that it makes an average effort to raise revenue and conducts its affairs at an average level of operational efficiency.

The Grants Commission's latest available annual analysis—*Report on State Revenue Sharing Relativities: 2003 update*—is based on data for the financial years 1997–98 to 2001–02. It shows that in the category of Public Safety and Emergency Services (which excludes the law and order–related categories of police, administration of justice, and corrective services) estimated expenditure across Australia was $63.87 per head of population in 2001–02. The individual figures for the states and territories are then standardised by the Commission to take account of a range of identified disabilities that do not fall equally across all governments. In this way the Commission determines the amount each state and territory is required to spend in order to provide an average level of service.

The standardised expenditure figure for the ACT in 2001–02 was calculated to be $67.14 per head, whereas the Territory's actual expenditure was $82.43 per head: that is, the ACT was assessed as being required to spend $67.14 per head in order to provide an average public safety and emergency service. The ACT's actual expenditure was 22.8 per cent greater than the standardised national figure, reflecting a policy decision by the ACT Government to spend more. The relatively higher actual expenditure in the ACT is evident for the majority of the years of the 2003 update—and certainly for the five-year average.

The Inquiry had access to extracts from the ACT Government's submissions to an inquiry the Grants Commission is conducting into its current methodology. The ACT has submitted that the Commission is not adequately taking account of the Territory's disabilities; it is also seeking a change to the Commission's approach to the Public Safety and Emergency Services category.

The submissions draw attention to the fact that the Territory, excluding the city of Canberra and its immediate surrounds, takes in a significant geographic area, two-thirds of which is publicly managed land. In the main, this land is economically unproductive, largely because of planning and environmental constraints: 53 per cent of the ACT's land area is taken up Namadgi National Park, which was gazetted by the Commonwealth, and various protected lands that are defined by the Commonwealth under the National Capital Plan.

It is emphasised that much of the ACT is difficult, bushfire-prone country. As part of the alpine mountain ranges it does, however, have high tourism, cultural and recreational values and is an important part of our national estate. The ACT asserts that the full cost of land management activities associated with this wilderness area, conservation of the biodiversity it contains, and protection of the national capital from the inherent risks (including bushfire) should not continue to be solely borne by the relatively small ACT population.

According to the submissions, the per capita cost of the management of public lands in the ACT is at present higher than anywhere else in Australia. The cost is high because the Territory has more than twice the national average area of sportsgrounds and urban open space to manage: urban open space amounts to 19.7 hectares per 1000 people compared with the national average of 9.5 hectares.

The ACT also argues that the Grants Commission's current methodology disadvantages the Territory in another way. The submissions call for the removal of the Public Safety and Emergency Services economic environment

factor, which is based on per capita residential and commercial fire insurance claims and the unimproved value of land. The ACT considers that this approach fails to recognise the determinants of the cost of, and demand for, fire protection and emergency services.

The ACT's submissions are being considered by the Commission; the results will be released in February 2004.

On a separate but related matter, the Inquiry was informed that during the past three years the ACT and Commonwealth Governments have been in dispute about a revised formula for the Commonwealth's annual contribution to the cost of fire services in the Territory, in recognition that the significant Commonwealth presence in the ACT benefits from these services. The Commonwealth has withheld three years' payments, to the value of $9.22 million, and the ACT Government has had to fund this shortfall from its own resources. During the course of the Inquiry publicity was given to an exchange between the Chief Minister and the Prime Minister, to the effect that the Commonwealth would be agreeing to reopen negotiations to try to find a new funding formula. The Chief Minister responded favourably to this development.

The Inquiry does not have a view on the matters raised by the ACT with the Commonwealth Grants Commission; nor does it have a view on the deliberations with the Commonwealth over the funding of fire services in the ACT, other than to note that the bushfires in January 2003 exposed a range of shortcomings whose remediation in a number of cases will involve additional expenditure.

The cost to the ACT Government of managing the extensive open space, parklands and forests in the Territory represents a continuing financial commitment—from the environmental, recreational, asset protection and human safety perspectives as well as in terms of suppressing bushfires, which will remain a feature of the landscape.

Conclusion

Any change to the way the ACT is funded on a continuing basis would have implications for the Territory's ability to deal with the recommendations flowing from this Inquiry—and other steps the ACT Government may wish to take. The Inquiry hopes that agreement on future funding arrangements can be reached quickly, so that the Territory's capacity to provide the funds necessary to adequately protect the national capital, and the surrounding ACT countryside, is not compromised.

Notes

1 A relativity is a numerical expression of a state's disability relative to the Australian average. It shows whether a state's funding needs will be positive or negative.

> …on Friday 17 January, I arrived into Sydney airport from New Zealand…I rented a car…I stopped at a rest stop on the Federal Highway and slept for a few hours… I saw dozens if not hundreds of kangaroos. Eventually and inevitably I hit one, damaging the car quite badly… only a few weeks ago I realised the possible significance of seeing so many 'roos to the North and East of Canberra, when fires were raging to the South and West. Should the animals' movements have given us a forewarning of what was coming?
>
> – Captains Flat resident

Large numbers of residents taking material to the dump after cleaning up around their gardens in the week following 18 January. Photo printed with permission of the *Canberra Times.*

5 The public dimension

(How the community can help itself and what support it can expect from the authorities)

Historically, fire services have grown out of a combination of the concern of local communities about their own safety and the support of the insurance industry, which has had a financial interest in reducing losses from fires. The raising and maintenance of urban fire brigades have gradually become a responsibility of the state, although vestiges of insurance industry funding remain. There has also been a trend towards substantial state funding of rural fire brigades, although to a somewhat lesser degree.

From the community's point of view, the significance of these changes has been the move towards greater reliance on government to provide fire-suppression services. This is particularly the case in most capital cities. In earlier times, the community's commitment to protecting itself was more pronounced than it is now although the heavy reliance on volunteers in bushfire services around the country is a continuation of the practice that grew out of a strong sense of community self-reliance.

In more recent years, around Australia there has been a swing back towards greater engagement of the community in voluntary (and in some cases compulsory) fire prevention and mitigation aimed at supporting the fire-suppression activities of the formed brigades. Relative to the costs of supporting fire-suppression activity, the rate of expenditure on prevention and community education programs has risen markedly in most jurisdictions.

One theme that runs through this report is the need for a greater involvement of the ACT community in helping itself with personal and property protection. This involves the authorities working in a closer partnership with the community, helping citizens to better understand the nature of the fire risks they face, what they can do about improving their personal and property protection, and what kind of assistance they can expect from government agencies.

This chapter develops the theme of changing the focus from reliance solely or largely on the government to provide full protection against the ravages of fire, to a shared arrangement, whereby the public is helped to have a better sense of fire awareness and encouraged to take on a greater measure of self-protection, with government providing the protective back-up through the professional services it will continue to maintain.

The first step is to increase the community awareness of the nature of the risks it faces, so that people will be more receptive to the education initiatives that need to be promoted by the fire and emergency authorities.

The Canberra community's awareness of fire risk

Despite the major fire events that have occurred during Canberra's history, and the recording of fire corridors through what are now Woden and Tuggeranong, the fact that no urban houses had been lost to bushfire since 1952 had given rise to a belief that the houses of suburban Canberra were not vulnerable to bushfire. Even the intrusive fire event in December 2001 failed to adequately alert Canberra residents to the fact that their homes could be at risk. A number of factors have supported this conviction:

- the historical absence of suburban homes lost to bushfire
- urban development in Canberra being limited to the valleys and not on hills and ridges, areas that have proved so vulnerable to fire in the Blue Mountains, the Dandenongs and the Adelaide Hills
- the ACT planning controls, which clearly define the edge of urban development—in contrast with the ribbon-like and scattered urban fringe in many other towns and cities, where there is a more obvious bushland character to the urban–rural interface
- the large tracts of cleared land around Canberra, which appear to present a low fire risk to much of urban Canberra
- the non-declaration by government of any of the ACT as 'bushfire prone' in terms of the Building Code of Australia—avoiding the requirement to 'bushfire-proof' suburban homes
- the lack of unambiguous official warnings and advice that Canberra suburbs were vulnerable to bushfire damage
- a general failure to realise that Canberra residents were vulnerable. A Kambah resident was reported in The *Courier Mail* on 20 January as saying, 'We did clean our gutters and put on the right clothes, but none of us were really prepared. I mean, this is Canberra, you do not expect fires'.

It was suggested to the Inquiry that ESB, and as a consequence Canberra residents generally, had adopted an attitude of denial—not only long-term denial about the potential bushfire threat to homes but also, once the initial fires were not contained, a denial of the possibility that seasonal north-westerly winds could push the fires directly towards Canberra. This might seem a harsh comment, but there is substance in the message.

The Inquiry is of the view that, at a general level, the Canberra community has not been sufficiently well prepared to understand the nature of the bushfire risk that is present as a consequence of the siting of the city in a bushland setting. As the events of January 2003 showed, the pride the city takes in being known as the Bush Capital also carries with it a reminder that the unique environment people enjoy comes at a price.

Public education

A major new program of community education is called for to remedy this situation and to help residents understand how they can better protect themselves and their property from bushfire damage. Canberra will always be a city prone to occasional serious bushfire attack, and the realisation of this needs to pervade the psyche of the city, its inhabitants and those who govern it. Among specific measures that might be taken are the following:

- community television announcements about bushfire prevention and preparedness
- school programs focusing not only on fire safety in the home but also on safety during bushfires
- visits by emergency services to aged care, childcare and other facilities for vulnerable groups, advising what action to take when there is a bushfire threat
- roadside signage showing the daily bushfire risk—along major corridors in Canberra, not just along the approaches to forests and parks
- advice about local fire prevention measures, perhaps issued with rates notices
- a concerted effort to convince the community that smoke haze associated with fuel-reduction burning is an unavoidable consequence of limiting the risk of damage to the city.

These are but a few suggestions. An expanded and continuing campaign of community education about bushfire risks and how individuals and households can prepare for them is required. The campaign should emphasise that this is a shared responsibility for the entire Canberra community, with government, emergency services and residents all having a part to play. In terms of bushfire protection in Australia, the best-prepared communities are those that have accepted the sharing of responsibility between government and citizens.

In the 2003–04 Budget the ACT Government allocated $100 000 for a trial with some local community groups in urban fringe areas, who will be supplied with firefighting equipment and training as a self-help initiative designed to help people protect their properties when fire appliances are unavailable or delayed. While this provides an excellent opportunity for community engagement and education the concept has been adopted elsewhere in Australia only by the NSW Fire Brigade. It also provides an excellent opportunity for local fire crews to relate to local residents. The Inquiry considers it worthy as a trial, and that it should be extended to rural leaseholders, although effectiveness should be critically reviewed as part of the trial.

The unpredictability of bushfires, the speed with which they can present a serious threat, and their intensity and spread (which far exceeds the normal fire experience in built-up areas), mean that no government or community can guarantee that fire services will be able to attend all residences or structures that might be threatened by large bushfires. As a consequence, members of the public must assume greater responsibility for protecting themselves and their property against the potential impact of bushfires.

Under the ACT's *Emergency Management Act 1999* the Executive Director of ESB is responsible for conducting education programs and vulnerability analyses and coordinating public information related to emergency management. ESB advised the Inquiry that the December 2001 bushfires had raised the Canberra community's awareness of potential bushfire hazards and that ESB had undertaken a number of community education and awareness activities in the lead-up to the 2002–03 bushfire season:

- The release of the draft Bushfire Fuel Management Plan 2002–04 for public comment in mid-August 2002 provided an opportunity for ESB, Environment ACT and the Conservation Council of the South-east Region and Canberra to emphasise the possible severity of the pending bushfire season.

- Under a sponsored initiative, the United Firefighters Union distributed a *Fire Prevention Handbook* to primary school children in the ACT. The handbook

included advice from the ACT Bushfire Council's publication *Will you Survive?* informing residents about preparing their homes for a fire threat.

- A two-page colour feature on mitigating the potential effects of a disaster appeared in the *Canberra Times* on 28 August 2002. The feature included advice from the ACT Bushfire Service on preparing for bushfires.

- Advice on the probable severity of the 2002–03 bushfire season was provided in mid-October 2002 as hazard-reduction burns were carried out around Lady Denman Drive and Orana School. Residents were advised to clear bushfire fuel away from their homes.

- In October–November 2002 the Director of the ACT Bushfire Service advised residents through the print media and radio to take action to clear vegetation from around their homes and to establish some type of defensive zone.

- An article in the *Canberra Times* on 29 November 2002—after the launch of the Bushfire Fuel Management Plan 2002–04—gave advice to residents on twelve measures to prepare their homes for bushfires.

- On a number of occasions the Director and Manager Operations of the ACT Bushfire Service gave radio and television interviews about the potential severity of the 2002–03 bushfire season, what people could do to prepare their houses, and what to do under a total fire ban.

- On 24 November 2002 members of the Rivers Volunteer Bushfire and Emergency Service Brigade conducted an awareness session for residents of Chauvel Circle in Chapman, providing advice on measures they could take around their homes and what to do if a bushfire threatened them.

> I strongly support the view that people should be encouraged and assisted by government, wherever possible and prudent, to protect their own properties and to co-operate with their neighbours in this task
>
> — Chapman resident

All these initiatives are commendable. But a higher profile campaign is still needed. A sustained effort must be made to ensure that the message is heard and absorbed. Experience with community education campaigns such as those on drink-driving, wearing seat belts, and the dangers of smoking illustrates the difficulty of changing attitudes quickly. Modifying the community's attitude to bushfire threats—from one of indifference or benign acceptance to a positive

and continuing realisation of the reality—will not happen simply because the January experience is so recent. Constant reinforcement will be needed.

ESB's public education capacity should be strengthened. It has one full-time officer engaged in 'public relations', part of which is public education. Public education needs to have a much stronger emphasis within the organisational structure, so that ESB has the capacity to support an upgraded program of community education and support.

Fire authorities around Australia now endorse a policy of encouraging well-prepared people to stay with their properties when threatened by bushfires. The basic advice householders need is well established but it needs to be promulgated and reinforced if it is to be widely embraced. ESB, with government support, is responsible for ensuring that this happens.

Recommendations

- ESB should be allocated additional resources so that it can upgrade its public education capability to support a stronger, continuing campaign of public education directed at improving the Canberra community's bushfire awareness, its understanding of the nature of the threat, and its knowledge of how people can better protect themselves and their properties. The campaign should draw on the public education experience of interstate bushfire authorities, particularly the Country Fire Authority of Victoria.

- Initiatives such as fire guard and other forms of direct community support should be introduced to encourage self-help arrangements in the community.

- The message to the community should include acknowledgment that in major bushfire emergencies

  – the authorities are unable to guarantee that firefighters will always be available to assist

  – householders generally need to take sensible precautions and be prepared, if that is their choice, to protect their own lives and properties

  – the authorities are committed to doing all they can to help, including advising the community on how best to go about achieving a higher degree of personal and household self-reliance.

Public information

By far the strongest and most frequent criticism expressed in public submissions to the Inquiry concerned the lack of early warning to the community about the fire threat. Many submitters drew attention to the contrast between the dearth of information provided in the period before 18 January and the large amount provided to Belconnen residents during the following week.

Information given to the public during an emergency can serve a number of purposes:

- provide an honest and realistic assessment of what has occurred and what more to expect
- give the community the best possible indication of precautions they should be taking if there is the possibility that the threat will be ongoing and may escalate
- inform the community of immediate relief activities
- warn the community of post-disaster hazards
- motivate a required public response to the emergency
- provide direct assistance to those adversely affected
- assist with evacuation and other recovery procedures.

Media alerts and updates

As noted, ESB had issued a number of media alerts and provided media interviews in October–November 2002, warning of the early start to the 2002–03 bushfire season and total fire bans and providing advice to people about preparing their homes for a bushfire threat. The media also received information on early fire outbreaks in Namadgi National Park (29 October 2002) and on Black Mountain (5 November 2002) and a number of grass fires around Canberra (1–6 and 16–24 November 2002). On 5 December 2002 the then Minister for Police, Emergency Services and Corrections, Mr Ted Quinlan MLA, also issued a media release announcing the deployment of one task force from the ACT to assist in fighting fires in the Bateman's Bay area.

From 10 January 2003 ESB issued regular (at least daily) media updates on the fires at Bendora, Gingera and Stockyard Spur. The releases were in a standard

format, providing information on the fires' status, the fire ban status, the resources deployed, land and property damage, and road and nature park closures, as well as advice about reporting fires or suspicious activity; new information was clearly identified. They also contained information on community safety (personal and property safety), health warnings, weather details and advice about community access to information. These releases were supplemented by releases from Environment ACT, detailing restrictions on park access, and health warnings for high smoke levels from the ACT Chief Health Officer. The media release information for each day preceding 18 January is detailed in Chapter 2.

ESB provided a number of media updates on 18 January. At noon and 1pm the media updates advised that the extreme weather conditions had caused a number of spot fires to cross containment lines. The McIntyre Hut fire, which had become known as the Northern fire, had burnt out about 18 000 hectares (1 pm). A spot fire that had crossed the ACT–NSW border during the night had entered the north-western corner of the Uriarra pine plantation. The Bendora fire, which had been renamed the Middle fire, had burnt about 10 000 hectares (1 pm). A spot fire threatened property in the Tidbinbilla and Paddys River Valley, and ESB had contacted residents in the area the previous night to advise them to prepare their property; no residents had been evacuated but recovery plans were being made for a possible serious threat. A spot fire from the Stockyard fire complex (by then known as the Southern fire) was threatening property in the Naas and Top Naas areas and posed a threat to property in Williamsdale and Royalla. More than 80 firefighting units had been deployed in the ACT, involving 250 personnel per shift.

The local ABC radio also monitored events; the program record at Radio 666 is as follows:

7.30 am — Interview by Executive Director ESB gives no indication of any problems east of the Murrumbidgee River.

7.55 am — *Local news broadcast.* Public advised that road closures mean there is no access to the parks west of the Murrumbidgee River. National parks and recreation areas are closed. Executive Director ESB advises that the fires are spotting out of containment lines.

9.00 am — *News broadcast from Sydney*. A fire update by John Winter (NSW Rural Fire Service) advises of a major fire battle. Tidbinbilla should prepare but there are no evacuations.

9.30 am — News headlines announce that the fires are edging closer to the ACT.

10.00 am & 11.00 am — *News broadcast from Sydney*. ACT on heightened alert.

1.00 pm — *News broadcast from Sydney*. Fires less than 10 kilometres away from Canberra. Residents on the western edge are advised to prepare for fires and take precautions to protect their homes.

1.05 pm — *First local update*. ABC Radio 666 announces that it will provide updates on the fire situation throughout the day. Fires have entered the Uriarra pine plantation and firefighters are dropping back to the edge of the forest to fight the fires there. Information and warnings are given about the fires and property damage; advice is provided about how to deal with fire if it approaches.

1.10 pm — *Reporter update following ESB briefing*. Advises that the next 24 hours would be 'horrendous' with 40ºC degree temperatures. The fires are 8–10 kilometres away, with a spotting potential of 8–10 kilometres. Residents of the western edge of Weston Creek are advised to take precautions. Road closures announced.

1.52 pm — *Local update.* Situation has worsened. A caller advises that Pine Island has been evacuated. The western edge of Weston Creek is in danger; ESB advises residents of the area to be ready for fire.

2.00 pm — *News broadcast from Sydney*. The fire front is approaching Canberra and is less than 10 kilometres away. Major roads are closed. Chief Fire Control Officer advises that firefighters are on property-damage duty only.

2.05 pm — *Local update*. Cameron Wade (NSW Rural Fire Service) advises that the southern fires have crossed the Murrumbidgee River. There is a threat to property on Smith's Road; the Monaro

Highway is closed. Advice provided on wearing appropriate clothing. Warning to Weston Creek residents is repeated.

2.29 pm *Local update*. Fires starting to hit Canberra suburbs. Reporter at Ginninderra Falls reports flames four times the size of trees across the Molonglo River. Fire moving very quickly. Helicopters present but the water is being blown away.

2.32 pm The Standard Emergency Warning Signal is sounded for the first time. The message that was read stated that there has been a major deterioration in the ACT fire situation. There was increasing risk due to spotting from fires to the west. A number of suburbs are placed on alert and residents are urged to return home. The list of threatened suburbs is repeated.

The Executive Director ESB and the Chief Fire Control Officer held a media conference at noon on 18 January. A media representative who was at the conference informed the Inquiry that the advice given was that the situation was bad but there was no cause for panic. The fires were estimated to be 8–10 kilometres away, with spotting occurring 8–10 kilometres in front of them.

At 3.30 pm the Chief Minister, the ACT Chief Police Officer and the Chief Fire Control Officer held a media conference at which a state of emergency was declared—some three-quarters of an hour after its authorisation.

The Standard Emergency Warning Signal

The Standard Emergency Warning Signal is a signal that is played for 15 seconds every 15 minutes for two hours; it is followed by an official announcement.

The first official request to broadcast the Standard Emergency Warning Signal was issued by ESB to the media via fax at 1.45 pm. At this time ESB was aware that the three major fires were spotting considerable distances. For reasons never made clear to the Inquiry—although it appears likely to have been inadequate fax-streaming—the ABC radio did not receive the advice until 2.31 pm. The emergency message to the ACT community was authorised by the Executive Director of ESB. The message listed suburbs on the western urban edge, in Belconnen and Weston Creek that should be on alert for approaching fires. Further suburbs were added to the list in subsequent broadcasts. The message also provided advice on precautionary measures residents should take if fire approached their houses.

It is clear from events that work needs to be done to improve the alert mechanisms for residents. Among suggestions from the public were air raid–type sirens, colour-coded alert messages for increased threat levels, and Standard Emergency Warning Signal messages being broadcast in major shopping centres.

ABC Radio 666 told the Inquiry that it received the Standard Emergency Warning Signal instruction at 2.31 pm (three-quarters of an hour after it was supposed to have been transmitted by ESB) and aired it at 2.32 pm. The delay between ESB's release of the message and Radio 666's receipt of it was explained to the Inquiry as technical—a fault in the automatic bulk-addressing function on ESB's fax. This is not satisfactory: better processes should be implemented for the direct dissemination of critical emergency information to media channels.

Public submissions to the Inquiry also strongly criticised having only one radio station or communication medium broadcast the emergency warning message. Further, people commented about a general lack of understanding of the significance and meaning of the Standard Emergency Warning Signal. Some residents suggested that the Signal should have been supplemented by police sirens in areas of particular risk.

Canberra Connect

ESB advised the Inquiry that the Christmas 2001 fires demonstrated the need to broaden the then current media arrangements to encompass wider aspects of community information. During 2002 the Executive Director ESB met with managers of Canberra Connect, the Government's gateway to information and services, to explore ways of using its call centre and web presence to facilitate the provision of community information during an emergency. This would supplement the Police and ESB as a source of authoritative information. Coordination arrangements to increase Canberra Connect's information provision capability were finalised on 18 December 2002.

As noted, authorities began preparing for possible fire impacts in rural areas of the ACT on the evening of 17 January. The Canberra Connect call centre was activated at the same time, in preparation for increased information needs during the weekend. It was initially arranged that the call centre would be staffed on Saturday from 7.00 am to 7.00 pm (rather than the more limited normal weekend times), but ultimately the centre operated 24 hours a day from 18 January until 28 January, when the state of emergency was lifted.

A 1800 telephone number was also established at the Police communications facility at the Winchester Centre and an 'ACT Bushfire Status' website was constructed within the existing ESB website.

The Canberra Connect call centre was heavily used throughout the emergency: the equivalent of three months' call volume was processed in 10 days. In addition, 181 000 people visited the ACT Bushfire Status website between 17 and 27 January. The Inquiry was advised that at the height of the emergency people were contacting the call centre in an effort to locate friends and relatives; to gain updates on the fires; the status of road closures and the evacuation status of suburbs; to find out where the evacuation centres were; and to gain information about what to do to prepare their homes.

As the emergency continued into Sunday people called to donate their time or resources to victims. Suburbs in Belconnen and Weston Creek remained on alert, and concerned citizens and employers kept in contact with the call centre to receive updated information. Calls from people volunteering their time and resources continued throughout the week. Canberra Connect has continued to play a support role for the ACT Bushfire Recovery Taskforce by providing information on the bushfire recovery since January.

Overall, the Inquiry considers that Canberra Connect played an extremely important role in information dissemination during the emergency. The system responded rapidly to the need to scale-up its activities, and it quickly developed new processes when the need arose; for example, the Canberra Connect number was quickly established as a national and international number. Online services also responded rapidly; for example, with assistance from CITEC, an online and phone donation facility was quickly established to take donations from around the world.

The Inquiry was advised that Canberra Connect has carried out its own internal analysis to identify where its scaling-up capabilities might be improved. The Inquiry recommends that the role Canberra Connect has demonstrated it can play be included as a part of a revised Media Sub-Plan of the ACT Emergency Plan.

One means of ensuring that Canberra Connect can play a more vital and continuing role during major emergencies is to upgrade its facilities to include an uninterrupted power supply. A recommendation to this effect follows.

The media

Media management is an important aspect of any emergency response. The media is both a source of information for emergency services (from reporters in the field and community calls) and an effective avenue for disseminating information about the emergency to the community.

As discussed, ESB had been in regular contact with the media in the lead-up to the events of January 2003. The Inquiry is satisfied that ESB had in operation adequate arrangements for these routine activities. Basically, the media unit consisted of one professionally trained media officer, although the officer was relatively inexperienced. The Inquiry considers though, that ESB was ill-equipped to quickly scale-up its media and information management capability to cope with the demands of a major emergency.

The ESB submission stated that, as a consequence of the December 2001 fires, the Executive Director ESB presented a briefing on emergency management to public relations staff from all ACT government agencies. From that briefing, a list of PR expertise that could be drawn on to assist with information dissemination to the media and the public in an emergency was compiled. A roster of PR staff available during the Christmas–New Year period of 2002–03 was prepared. ESB drew on this network from 10 January to supplement its in-house support, as well as receiving some assistance from the media unit of the Chief Minister's Department.

Despite the injection of additional personnel, the coordination and management of these disparate resources left a lot to be desired until an experienced media consultant was engaged to take over the management of media relations generally. As a result, from the afternoon of 20 January, the situation began to improve substantially.

A well-managed media function greatly helps with the management of an incident. The Inquiry recommends that action be taken to strengthen the media and public relations capacity within ESB. It would be advantageous if this area were integrated with the unit responsible for developing and implementing an enhanced community education program. The media function should be coordinated by an experienced media person who understands the demands and sensitivities of handling a large-scale emergency, and this person should have adequate support, which might include means of drawing on additional resources at short notice when a major emergency does occur. These arrangements need to be tested to ensure that they will work effectively when necessary.

It is apparent that on 18 January there were problems with ensuring that public information was provided consistently both to the media and to Canberra Connect. This was highlighted in agency submissions, in feedback from media staff, and in community comments. Staff should be well versed in media requirements in terms of deadlines and the need for accurate, up-to-date information. It is important that there be continuing liaison with the media at all stages of an emergency. It is equally important that there be robust processes for ensuring that information is consistent and that rumours can be confirmed or denied promptly.

The media should also be well supported by having satisfactory facilities to work in. The Inquiry was advised that the media facilities at Curtin were inadequate: there was not enough space and only one dedicated phone and fax line, and major problems were encountered when the power supply was interrupted. Ideally, there should be a discrete media area, with dedicated phone and fax lines and an uninterrupted power supply. Back-up systems should be available in the event that all communication fails.

Some comments were made in the media about ESB not having an up-to-date media contact list. The Inquiry pursued this with staff in the ESB media unit. They stated that there was a current contact list for the media but that it needed to be checked with the various media outlets to determine who was on call for that particular weekend, given that it was school holiday time and that stations would switch to national programming in the afternoon.

A debrief ESB conducted with media personnel on 7 March identified a number of matters for consideration in a revised media management strategy:

- better access for journalists to the fire front and use of a 'pool system' for television footage
- better marketing of sources of public information—for example, the Canberra Connect website
- using radio for information dissemination as well as purely for news
- an increased public information profile in ESB
- raising the level of awareness of and providing training for media personnel in connection with bushfire and other fire and emergency-related issues, including the Standard Emergency Warning Signal

- using ‘crawlers’ on all television stations to alert people to listen to their radios in the event of an emergency
- during an emergency, having a different ESB liaison officer dedicated to each arm of the media—radio, television and the print press
- having a number of spokespersons—not necessarily ESB personnel—available to address the media when incidents occur
- providing media awareness training for firefighters in the field
- using email as the preferred way of disseminating press releases, information, and so on.

> The only effective communication means were the radio for an initial warning, talking with our neighbours ... family and friends. The radio alerted us to the state of emergency ... but this was patchy and did not give a good indication of what was actually happening.
>
> — Chapman resident.

In the course of discussions with the Inquiry, various media representatives made a number of other practical suggestions (which have been passed on to ESB) that would improve the quality of the working relationships between ESB and the media. They would make it easier for the media to fulfil its role as well as allow ESB to make better use of the media as an ally in any future emergency.

Some of the confusion in the information relayed by the media during the afternoon of 18 January was a consequence of the existence of two operations centres—ESB at Curtin and ACT Policing at the Winchester Centre in Belconnen. While ACT Policing was concentrating on police and recovery related matters, Curtin remained focused on fire-related media information. Partly because of the physical separation, the different interests of the two centres and communication difficulties between them, a coordinated and unified approach to the media was very difficult to maintain.

On Sunday 19 January there was agreement to redirect media inquiries from ESB to the Police Operations Centre. General communications difficulties between the two centres continued, however, and on 22 January the media functions in relation to the continuing fires, and to recovery, largely returned to ESB. By this time the media consultant engaged to coordinate and manage the entire media and public information activity had regained control of the situation.

ACT Policing's submission to the Inquiry commented:

> Issues of media liaison and coordination highlight the need for one physical or at least 'virtual' centralised information collection and dissemination point, definite coordination and sharing of information to obtain a common approach, and the benefits of senior officers liaising and agreeing on the content of media releases …
>
> There are also resourcing issues for media management that are worth further consideration. Both ACT Policing's and ESB media units called on extra staff to assist them. These officers also needed to coordinate and liaise with private sector groups (like infrastructure utilities) who issued their own releases. The job of managing and coordinating the media is vital, a fact well recognised in the ACT Emergency Plan. Media resources were stretched and appear to have needed additional capacity as there seems to have been a period at the height of the emergency where media releases were re-broadcast with by then inaccurate and potentially dangerous information while SEWS messages appear not to have been updated regularly. This is problematic given the importance of the broadcasts for informing people, retaining public trust and keeping people safe.

The Inquiry agrees.

Recommendations

- The Media Sub-Plan of the ACT Emergency Plan should be reviewed to include a greater focus on the provision of community information.
- Well-defined, well-practised processes should be developed to support the delivery of information to the public. This includes improving the alert mechanisms for residents prior to an emerging danger period.
- Media communications systems and facilities at ESB headquarters should be improved.
- There should be greater coordination of the content of whole-of-government media releases and messages.
- Back-up power should be available for the Canberra Connect call centre.

- The Community Information Sub-Plan of the ACT Emergency Plan should be reviewed to reflect needs broader than just media arrangements.
- The role Canberra Connect has demonstrated it can play should be included as a part of a revised Media Sub-Plan of the ACT Emergency Plan.
- Before each bushfire season familiarisation briefing sessions should be held for the media.
- ESB should have the capacity to engage an experienced media director to be available in an emergency, to coordinate the provision of information to the media and for general public information purposes.

Evacuate or stay?

The apparent inconsistency in steps taken by the Police to evacuate people at certain stages during 18 January when advice emanating from the Emergency Services Bureau was encouraging residents to stay with their homes if they felt confident about doing so attracted much adverse comment, both immediately after the fires and during the Inquiry. Submissions to the Inquiry cited many instances of disagreement between the police and local residents who wished to stay or to return to protect their homes.

This difference of view has been debated by police and firefighters in Australia for many years but has now been resolved in most jurisdictions by legislation or agreed protocols. In Victoria, for example, while the police have the power to remove a person who is on land or buildings threatened by fire, they may not do so if the person has a '… pecuniary interest therein or in any goods or valuables whatsoever thereon …' (s. 31(4) of the *Country Fire Authority Act 1958*). The NSW Rural Fire Service policy is that capable people should not be evacuated from properly prepared dwellings that are likely to be affected by bushfire, although the Service advises people that if ordered to evacuate by the police they should comply. By agreement, however, senior police must seek advice from the Rural Fire Service incident controller before authorising an evacuation.

> The call to evacuate was unnecessary and resulted in several houses in our area being lost as there was no one available to extinguish the fires. Most of our street was saved by those who ignored the evacuation warning
>
> — Kambah resident

In an endeavour to obtain a nationally consistent approach, the Australasian Fire Authorities Council presented a position paper, 'Community Safety and Evacuation During Bushfires', to a meeting of Australian Police Commissioners held in Canberra in October 2001. The paper, the full text of which appears in Appendix G, makes a number of important points:

- *Bushfires regularly threaten communities throughout Australia*. In the preamble it is noted that responsibility for reducing loss of life and property lies jointly with government, communities and individuals and that fire authorities are not able to guarantee the presence of a firefighting vehicle and crew to protect every residence during a major bushfire or multiple fires.

- *Houses protect people and people protect houses*. Research conducted over many years following major bushfires in Australia shows that most buildings losses are the result of sparks and embers starting small fires. If adequate preparations have been made, a building will usually survive the initial passage of a fire front. People who are well prepared and take shelter in their homes have an excellent chance of survival. Homes will also be saved if people remain to extinguish small fires that start in and around them.

- *Fire authorities no longer advocate large-scale evacuation of people from threatened areas*. Research into Australian bushfire fatalities shows that last-minute evacuation is dangerous and can cause greater risks than remaining in the fire area.

- *Communities at risk from bushfires should be allowed and encouraged to take responsibility for their own safety*. Where fire protection measures have been taken, able-bodied people should be encouraged to stay with their homes. When there is sufficient warning time, people such as the very young, the old, the infirm, those who feel they would not cope with the trauma of fire, and those who have not taken sufficient measures to protect their homes should leave. The decision to stay or leave during a bushfire must be made following careful consideration of all the factors bearing on the situation.

- *Authority to evacuate*. The Australasian Fire Authorities Council considers there should be a national framework that allows and encourages members of the community to take responsibility for their own safety and that of their property. The Council also considers that a decision to evacuate people should be made by the lead fire-combat authority. It notes that the time involved in dealing with resisting citizens can seriously hamper the process of warning and evacuating other members of the

community. Citizens should be able to choose the option that best suits them—for example, sheltering in their own home, moving to a neighbour's home, or relocating to a nearby point of refuge.

With the exception of Queensland, which wanted to seek clarification on certain matters before expressing a view, the Police Commissioners accepted this policy framework. The ACT was present at the meeting.

The Inquiry is satisfied that the Australasian Fire Authorities Council position represents the soundest framework available to guide the authorities in dealing with this aspect of bushfire crisis management. A common, coordinated approach between the police and the fire authorities on this important and sensitive issue in the course of an emergency is essential; agreement in advance would also greatly assist with incorporating the policy in community education programs. Knowledge of how the authorities will act in a crisis is an important and integral part of an expanded community education and information responsibility the ACT authorities are urged to embrace (see 'Public information', in this chapter).

During the Canberra bushfires, ESB advice to the public was consistent with the Australasian Fire Authorities Council framework. After the state of emergency was declared, in mid-afternoon on 18 January, and the Chief Fire Control Officer had been appointed Alternate Controller, he acquired the power to 'direct the movement of persons, animals or vehicles within, into or around the emergency area' (s. 27(1)(a) of the *Emergency Management Act 1999*). However, he did not formally exercise this power at any stage during the crisis.

The Chief Police Officer, believing that he continued to hold the powers vested in his office when the state of emergency was initially declared, could have invoked the Emergency Management Act powers to authorise police actions aimed at compelling evacuations. This does not appear to have occurred: the Inquiry was informed that police actions that involved attempts to force evacuation resulted from individual decisions of police officers 'on the ground' and were based on normal common law police powers.

There seems to have been no real coordination between the Police and ESB before police took unilateral evacuation action in the field. There may have been some consultation between individual police officers and firefighters on site, but there should have been consultation at a policy level with ESB before ad hoc action of this kind was taken. At the very least, this would have helped to avoid confusion and inconsistency—in the advice the authorities were giving to the

community on one hand and in the actions of individual officers in the bushfire-threatened areas on the other.

During the December 2001 fires similar divergent views about evacuation emerged. Although there was an intention to resolve the different approaches, this had not occurred before January 2003, when the inconsistencies were again evident.

Police culture places great emphasis on their role as guardians of society and protectors of the citizens they are there to serve. Positive values flow from this, exemplified in a strong police response to situations that endanger the lives of citizens. This lies behind the traditional inclination of police to use their powers to require people to withdraw from situations of danger, in the belief that removal from the source of a hazard eliminates the risk. In many circumstances this is the appropriate response, but in bushfire situations experience has led to the view that a different or modified response is generally better. At least, the matter needs to be resolved at a policy level rather than relying on the judgment of police in the field.

> Large numbers of people were leaving Duffy and the Police were assisting in making their evacuation as safe and orderly as possible. This action is essential but I do not believe that their role should extend beyond this to forcing people to leave. Police should not be allowed to do this.
>
> — Duffy resident

ACT Policing's defence of its actions during the fires covered the following points:

- Attempts were made to clarify with ESB the policy to be followed in relation to evacuations, but communication problems as the crisis approached its climax created difficulties.
- Attempts were also made to consult fire authorities 'on the ground' who in some situations supported evacuation action.
- It is acknowledged that where police officers in the field were unable to obtain advice from fire authorities, they exercised their personal judgment in situations where they believed evacuation was the appropriate course to adopt.

- They believed that their actions resulted in the rescue of a large number of people (162 alone in Duffy it was suggested) who were elderly, ill-equipped or appeared shocked or distressed.

- They believe the low loss of life supports the police policy of evacuating people.

The Police acknowledge that an agreed policy is needed for the future. They accept that a common and coordinated approach by the authorities is preferable, that an informed and prepared public is necessary and that it is unfortunate that an agreed policy framework was not finalised, following the 2001 fire experience, prior to the 2003 events. However, it wasn't and the police believed they needed to act in the way they did, in the absence of a policy that suggested otherwise.

The Inquiry accepts that the Police acted in good faith and in many situations their efforts were welcomed by the members of the public they assisted. It is equally true, though that in many other situations their actions did not accord with the wishes of people who wanted to return to or remain with their homes.

The Inquiry is also aware that there was debate about whether Canberra homes were 'well prepared', so that it was appropriate for people to stay with them, and that the advice issued by ESB was not always timely: lack of advice was still a problem in some instances after people had left and the fire front had struck. However, these perceived deficiencies should not cloud the need to clarify the policy and consistently apply it in the field in the future.

Conclusion

The problem of conflicting advice and philosophies in the ACT in relation to evacuation needs to be tackled outside the circumstances of a major crisis. The framework adopted by the Australasian Fire Authorities Council should be followed to the maximum extent in developing a policy formulation suitable for the ACT.

The Inquiry is also attracted to adoption in the ACT of the provisions in the Country Fire Authority Act of Victoria, which while providing authority to evacuate people in bushfire situations, excludes police from evacuating people who choose to remain, to protect property in which they have a pecuniary interest. This provision is considered to be more in line with contemporary societal values.

When the policy framework is settled ACT Policing and ESB should develop a training program suitable for police and fire personnel dealing with the provision of guidance to the community in relation to 'evacuate or stay'.

Recommendation

ACT Policing and the Emergency Services Bureau should develop as a matter of urgency—and before the start of the 2003–04 bushfire season—a joint protocol covering their policy on community safety and evacuation during bushfires having regard to the framework adopted by the Australasian Fire Authorities Council and the evacuation provisions in the Victorian Country Fire Authority Act. The protocol should be promulgated widely as part of future community education and information programs, and it should be incorporated in the training and operational procedures of both services, so that it is followed consistently during future bushfire events.

> In urban/interface areas such as Duffy, there should be a strong onus on property owners to take responsibility in preparing their property for possible bushfires...this could be something along the lines of neighbourhood watch
>
> — Duffy resident

The recovery centre at Lyons. Photo courtesy ACT Publishing Services.

The recovery

An examination of the recovery phase of the emergency is relevant when attempting to gain an understanding of the impact of the January 2003 fires on the Canberra community. It also casts light on one aspect of the ACT's preparedness for dealing with a major community emergency.

Immediate recovery actions: 18 to 27 January

Recovery action initially focused on ensuring that people who had been affected by the fires were safe, had access to essential services, and were able to obtain accurate and helpful information.

The ACT Emergency Plan, which provides the basis for responding to emergencies in the Territory, contains a number of sub-plans. The Community Recovery Sub-Plan sets out the management arrangements that have been developed to enable recovery action to begin immediately in the event of a major disaster.

Recovery training had been carried out in November 2002. As a consequence of this exercise designed to test the procedures in the Community Recovery Sub-Plan, relevant staff in the Department of Education, Youth and Family Services, which has primary responsibility for the Sub-Plan, were familiar with the procedure for establishing evacuation centres.

On 18 January four evacuation centres were established, at Phillip College, Erindale College, Lake Ginninderra College and Narrabundah College, each with staff and a full complement of support services—including registration, first aid, food, clothing, personal support workers, and housing. The centres accommodated about 5000 people during the first 48 hours. Initially they operated 24 hours a day, but this was scaled down as the need subsided. Immediate financial assistance was offered to victims, a number of organisations provided support, and the ACT community and businesses were generous in the provision of food, blankets and other goods. Almost from the outset offers of assistance began coming in from outside the Territory.

Coming within the framework of the Health Emergency Management Sub-Plan of the Emergency Plan, Canberra's medical emergency services, ambulance service and hospitals experienced an unprecedented level of demand from people with bushfire-related injuries. Three people with severe burns were transferred to Sydney. Disability ACT successfully coordinated the evacuation of over 20 group homes that were threatened between 18 and 21 January.

Over 40 000 ACT residents lost utility services during the fires. Restoration of infrastructure damaged during the fires was managed successfully under the Infrastructure Recovery Sub-Plan and involved ACT government agencies, ActewAGL, the National Capital Authority, and telecommunications organisations. Facilities were repaired by 25 January and residents were able to resume normal service use.

The provision of information to people directly affected by the crisis, as well as to the wider Canberra community, was crucial to the recovery process. The media—in particular, radio—were instrumental in providing information about access to evacuation centres.

A 1800 Bushfire Information Service hotline was established to provide information, support and advice for Canberra residents and interstate callers. Canberra Connect became the central point for information dissemination. As this service became more widely publicised it assisted in alleviating the heavy load on the emergency services 000 hotline. On 18–19 January Canberra Connect received over 25 000 phone calls and 50 000 website visits from people with a range of queries about the fire event and the immediate recovery activity.

The Inquiry considers that the system of managing public information for the recovery generally worked well. At the peak of the crisis, however, many callers would have had difficulty getting through. In addition, the information that was available for passing on might not always have been as precise or helpful as callers would have liked. Canberra Connect is carrying out its own evaluation in order to determine how to augment its demonstrated capacity to manage the information dissemination process in future emergencies.

The Inquiry recommends elsewhere in this chapter (under the heading 'Public information') that the Media Sub-Plan of the ACT Emergency Plan be reviewed for the purpose of establishing more robust communication processes and ensuring the provision of timely, helpful emergency information to the public in the future. The Inquiry also recommends that Canberra Connect be more formally integrated into the emergency information management process.

The Bushfire Recovery Taskforce has identified a number of areas where improvements might be made to the community recovery planning process (see Box 1 on page 196); it advised the Inquiry that the matters raised will be examined and built into a revised Community Recovery Sub-Plan, work on which is under way.

The Inquiry agrees that specific responses targeted at people who were directly affected offered an extremely effective way of managing the recovery process. It notes, however, the comments of some rural landholders and residents of rural settlements, who by and large felt that the focus of the recovery effort, especially in the early phases, was on urban areas and urban residents who had lost their homes. The revised Community Recovery Sub-Plan needs to ensure that action is designed to support and respond to the needs of all sectors of the community.

After the state of emergency

The evacuation centres closed on 27 January and were replaced by the ACT Recovery Centre, which had opened at Lyons Primary School on 24 January. The Centre was the primary contact point for services, including distribution of disaster assistance and information to people affected by the fires. The Centre was well publicised and much used.

The Inquiry considers that the Recovery Centre operates well, and this was generally reflected in comments made in the public submissions. One of the Centre's strengths arose from early identification of the need to adopt a case management approach to assisting victims. This initiative was highlighted as 'best practice' in discussions the Inquiry had with emergency service managers in other jurisdictions, who have been observing activities in the ACT. The Centre also developed valuable direct links with community sector organisations.

ACT government agencies moved quickly to implement more medium term recovery activities—meeting accommodation needs, including for ACT Housing clients; developing a range of government financial grants for affected households, businesses and rural lessees; managing waste and establishing safe disposal sites for contaminated waste from block clearance; instituting a streamlined demolition and building approvals process; dealing with emerging public health and safety concerns (such as asbestos); monitoring air and water quality; providing services to replace lost personal records; conducting road safety inspections and cleaning up roads and verges; removing fire-affected trees; carrying out environmental restoration in Tidbinbilla Nature Reserve and Namadgi National Park; restoring fences in rural areas; and carrying out salvage operations in ACT forests and clearing away burnt pines. Processes were also implemented to support ACT Public Service staff affected by the fire event.

Box 1

The Bushfire Recovery Taskforce has identified the following areas for improvement to the community recovery planning process:

- Develop procedures for maintaining up-to-date contact numbers for the Community Recovery Team.
- Expand the degree of participation of government agencies and key community groups in the preparation of the Community Recovery Sub-Plan.
- Review the Major Technical Systematic Failure Sub-Plan so as to include major technical systems providers.
- Investigate the co-location of response and recovery operations centres, including emergency power supplies, back-up telecommunications, access to the ACT government network, and appropriate accommodation.
- Develop processes for effective and regular liaison between disaster management agencies at the planning and activation stages.
- Review the Community Recovery Sub-Plan to more explicitly define the roles and responsibilities of participating agencies.
- Improve processes for issuing emergency financial assistance to victims.
- Improve the management of donations.
- Develop procedures for effectively managing public information, including public health and safety information, and appeal processes.
- Develop safety plans for the frail aged and people with disabilities.
- Adopt case management and community development models as best practice.
- Consider the need to establish dedicated management arrangements for planning for and coordinating community welfare recovery services to respond to emergencies in the ACT.

These activities were complemented by the community response, which was overwhelming: over 1000 volunteers registered through Volunteering ACT to help with the clean-up and rehabilitation of the environment, and the Bushfire Appeal, established at arm's length from government, raised some $8.5 million.

Overall, the Inquiry considers that the response to the emergency—including the activation and implementation of the Community Recovery Sub-Plan and the wider recovery process—has worked extremely well. The public submissions generally reflected this view.

The Inquiry particularly considers that the successful early establishment of the evacuation centres illustrates the importance of well-developed, pre-planned, well-rehearsed emergency management procedures. The benefit of including community groups in the Community Recovery Sub-Plan was demonstrated in the valuable support they were able to provide.

Nevertheless, considering that this was the first time such procedures had actually been implemented, it is natural that there were some things that might have been done better.

Longer term recovery

The Government instituted special arrangements for coordinating and managing the longer term recovery process. While individual Ministers and agencies were responsible for particular aspects of the recovery, the Chief Minister took formal responsibility and provided a focus for whole-of-government coordination of the recovery effort and community participation. The ACT Bushfire Recovery Taskforce, comprising ACT residents and government officials and chaired by Mr Sandy Hollway, was established on 24 January to advise government, provide leadership for the recovery, and act as a bridge between government agencies and the community. The Taskforce is supported by a high-level secretariat that coordinates and manages the wide range of recovery activities, both within government and across the community. The Taskforce Action Plan, released on 12 February, identifies six goals for recovery under the general themes of supporting people, community involvement, clean-up, rebuilding, learning lessons, and building a stronger future.

A Community and Expert Reference Group, which brought together community groups, fire-affected residents, unions, the business community and the Commonwealth, was established on 3 February as the main advisory body to the Taskforce, to ensure that the recovery strategy was informed by

community views and needs and by local knowledge and expertise. The Group has directly intervened and assisted in a number of areas as well as playing an important role in identifying and monitoring factors associated with community health and safety. It has also provided early warning of issues generally and been a channel for communication between the Taskforce, government and the community in responding to the concerns of urban and rural residents. It provides direct feedback to government, to assist in targeting and streamlining program delivery.

The longer term recovery effort is well under way. The task involves support for affected individuals and families and extensive rebuilding and restoration. Proposed expenditure of $22.8 million in 2003–04 will build on the $29.7 million spent in 2002–03 to meet initial needs in supporting people, community involvement, clean-up and rebuilding, and learning lessons and building a stronger future.

Among the programs identified in the 2003–04 Budget are continuing the Recovery Centre's operation, to provide a broad range of support services; business assistance grants; interest subsidies; additional resources for counselling; free school bus travel for students who have had to relocate; activities to ensure community participation in the recovery effort (including running a community firefighting units trial); and continued cleaning up and rebuilding.

In addition to recovery activities directly supported as government initiatives, over $44 million from insurance cover will be invested in rebuilding and other replacement activity, excluding ACT forests. This will involve reinstating damaged and destroyed assets—including fire and ambulance stations, the public health facilities in Holder, bridges, public housing, playgrounds, depots, signage, observation towers, fencing, and replacement of vehicles and equipment. A further $21 million of insurance cover will be used for clean-up, debris removal, and replacement of a depot and property in ACT forests.

It is estimated that the ACT will receive about $17 million from the Commonwealth under the natural disaster relief arrangements. Among the areas where the Territory seeks assistance are costs incurred for personal hardship and distress relief; restoration or replacement of essential public assets; interest subsidy grants to small businesses; psychological counselling; and other acts of relief and restoration. Additional Commonwealth assistance is being made available to individuals through programs of agencies such as the Department of Community Services and Centrelink. The ACT has also asked the

Prime Minister to consider providing further assistance for the recovery and, in particular, for addressing the longer term impacts of the disaster. Four main areas of direct assistance have been sought—a tourism promotional package, a forest industry package, a 're-greening' the ACT initiative, and an improved emergency communications system. To date the Commonwealth has agreed to provide $0.5 million towards the tourism promotional package and $1 million towards the forest industry package. It has also made a commitment to work with the Territory to develop proposals relating to other requests.

The ACT Government has announced two land use reviews in response to the fires. The Minister for Planning announced on 12 February a review of urban-edge land use. Coordinated by the ACT Planning Authority, the review is investigating the planning, design and management of the urban edge, including current urban-edge treatments, design standards, guidelines and management approaches. It will assess the bushfire risk to residential property and whether any areas should be considered for bushfire-prone designation. It will also examine future residential and other land use areas.

Repairing powerlines as part of the recovery process. Photo courtesy ACT Publishing Services.

The second review—of the non-urban areas of the ACT that were affected by the fires—was announced by the Chief Minister on 19 February. This study will be informed by the development of a new draft business plan by ACT Forests and a recreation study being developed by Environment ACT. The results of the review will contribute to the development of the Canberra Spatial Plan.

Conclusion

The Inquiry considers that the ACT authorities responded to the damage caused by the fires in a well-organised and effective fashion. The ACT administration was well prepared for the recovery operation, even though the Emergency Plan had not previously been exercised or tested in all of its elements. The wisdom of devoting time and effort to pre-planning and the development of procedures for dealing with significant potential emergencies, which can take many different forms, was amply demonstrated by the recent experience.

The Emergency Plan and those of its sub-plans that were activated served their purpose admirably. It is inevitable in times of major emergencies that not everything will work exactly as planned for, and some problems and difficulties did occur in the early hours and days of the recovery process. Overall, though, it is the judgment of the Inquiry that the ACT authorities responded extremely well in quickly restoring a sense of order and security to the ACT and the citizens whose lives were tragically affected by the bushfires.

The members of the ACT community, and its commercial and community-based organisations, also deserve acknowledgment for the generous and energetic way they responded to the crisis, assisted by an equally generous array of people from outside the Territory.

Forestry settlements: a situation where greater community engagement was needed

The Inquiry spoke to residents of various settlements that were virtually wiped out by the fires. Although they expressed general concerns about a lack of initial response, their major criticism concerned their sense of isolation and abandonment once the fires reached their settlements. Efforts were made by Police to advise residents to evacuate on the morning of 18 January, but this advice did not reach everyone. Furthermore, many residents chose not to take the advice, assuming that the firefighting resources at their settlements would be there when the fire front reached them.

Firefighting resources were withdrawn from forestry settlements before the arrival of the fire front—apparently with no warning and certainly with inadequate communication with locals. This left residents with the least appealing options of evacuating late or remaining to defend what they could, often with depleted water supplies and inadequate firefighting equipment. In one instance, the fire units were withdrawn from one settlement only a few kilometres away, much to the frustration of residents battling to save their homes and possessions. What this highlighted to the Inquiry was the need for these settlements to have received clear advice about what resources would be available to assist them and what plan was in place by the authorities. Redeployment of resources without advice being given to the residents of isolated settlements caused special concern.

People living in isolated communities or locations in the ACT away from the built-up area of Canberra do not expect the same level of responsiveness from the emergency services as those who live in the city. This is an accepted part of choosing to live away from the city where these services are generally concentrated. Equally, though, the authorities have a particular obligation to these citizens, especially if they live in a more bushfire exposed environment, when major fires break out. The experience of some of the forestry settlement residents suggests that there were some breakdowns in the level of support provided by the authorities and that is unfortunate. It is hoped that the recent experience will act as a stimulus for building closer relationships on both sides in the future.

These sentiments apply to all people living in rural parts of the ACT. The Inquiry detected a significant level of discontent between some of these members of the ACT community and the authorities, whom they regard as excessively city focused at times. It would be disappointing if this gulf were to continue. Rural dwellers add a richness to the Territory. Many have played an important

role in helping to protect Canberra from the ravages of bushfires due to the value their properties play in mitigating bushfires before they reach the city boundries and through their past and present strong support of the volunteer-based Bushfire Service.

Recommendation

A sub-plan of the ACT Emergency Plan should be developed to assist with the design of special arrangements to cater for the needs of those ACT residents who live beyond the city bounds.

Burnt young pine forest clearly showing the direction of the fire storm. Photo printed with permission of the *Canberra Times.*

6 The future

(Proposals for institutional and legislative change to help create a more secure future)

A more unified and independent emergency services organisation

The ACT has two firefighting organisations—the ACT Fire Brigade and the ACT Bushfire Service.

The ACT Fire Brigade, which is made up of full-time, paid employees, is based in Canberra. Its primary role is to protect buildings and people in the city, but it has a number of other functions:

- assisting at road accidents and rescues
- attending to the spillage of hazardous materials and incidents involving chemical, biological and radiological agents
- dealing with grass fires and other fires within the built-up area
- providing an initial response to grass fires and other fires outside the fire season when Bushfire Service crews are not immediately available
- providing staff who can 'cross over' to bushfire tankers.

Like most similar organisations in Australia, the ACT Bushfire Service, is crewed primarily by volunteers. It does, however, have a small group of full-time, paid employees in senior management and administrative support positions as well as two brigades of personnel employed by the Department of Urban Services agencies responsible for forests and parks and Cityscape and Canberra Urban Parks and Places. These people fight fires as part of their duties. In the forests brigade, membership is part of normal duties for specific positions; the parks brigade consists of paid volunteers from within the organisation.

The primary role of the Bushfire Service is to deal with bush and grass fires outside the gazetted urban areas, although it does assist with bushfire suppression within the city boundary and help the land management agencies conduct controlled burns on public lands.

The equipment operated by the two services is very different. Large, expensive urban pumper vehicles designed for use in built-up areas are the main units used by the Fire Brigade. These vehicles do not have an off-road capability and they largely rely on access to water from street mains. They are designed to

deal with a fire in a single building or a confined group of buildings, where the pumper is stationary in a safe position and not exposed to the fire. In contrast, the Bushfire Service uses smaller vehicles that are designed to be taken off-road. They are therefore much more mobile than the city pumpers and, because they cannot rely on access to water from street mains, they carry more water.

Reflecting the particular roles, the equipment and the techniques used, staff in the two firefighting organisations have differing skills and their training differs significantly.

Although preventing a fire's spread is often important with fires in buildings, the firefighting task in this situation is typically more static and surgical, requiring intensive attack using sophisticated, specialised equipment. As well as being conversant with these circumstances, urban firefighters must also be trained in techniques for entering burning buildings to rescue people and dealing with the threats of hazardous and highly flammable materials.

In contrast, bushfires and grass fires are more unpredictable targets, strongly affected by weather conditions, terrain, and the amount of flammable material in their path. Dealing with these fires calls for a range of skills that are, in some ways, broader and more basic—using different means to control or extinguish fires, coordinating efforts with units dispersed over sometimes wide areas, and using different methods of suppressing or containing fires, including back-burning and the construction of firebreaks.

These differences help to explain why distinct bush and urban fire services have developed in Australia.

The development of the emergency services institutional arrangements in the ACT has matched the growth and development of Canberra. When the federal capital was created in 1911, its population was under 2000. It took 50 years to reach 50 000. Since 1960 the population of Canberra has increased more than sixfold, to its present level of over 320 000; that is to say, until the 1960s Canberra was a small city occupying a relatively small portion of the Australian Capital Territory.

When the city was smaller, the bushfire risk to dwellings and other buildings was more manageable. As the city expanded and its suburbs pushed out into what was previously bushland or open country, the risks expanded commensurately and a higher premium was attached to the need for coordination of bush and urban firefighting efforts. This higher premium has been expressed institutionally in numerous ways, including the following:

- establishment of the Emergency Services Bureau in 1995, to better coordinate the response of urban and bushfire services, ambulance and other emergency services to emergency-related incidents

- co-location of the headquarters of the various emergency services at Curtin and establishment of seven joint depots with unified management and command arrangements

- introduction of the Emergency Management Act in 2000, to provide an up-to-date statutory basis for dealing with emergencies, including a management structure for coordinating the response to and recovery from such events.

A critical question that arose in the course of the Inquiry is whether the current emergency services machinery and organisational arrangements can be further evolved to offer the ACT and its people better protection and security from the threat of bushfire, which will inevitably recur.

In many instances the personnel, skills and equipment of the Fire Brigade or the Bushfire Service will be adequate to deal with the risk posed, without the need to call on the support of the other. But when bushfires are likely to threaten built-up areas the coordinated effort of both services will be needed. Additionally, when large bushfires occur the Fire Brigade should have greater capacity than it currently has.

In January 2003 the various fires in the ACT eventually became a single problem. Once they reached their full power in the conditions of 18 January, they demonstrated that they were beyond the strength and resources of those who courageously and tenaciously fought them. Some risks were contained; others could not be. Considering the speed, breadth and ferocity of the fires when they reached the city, it is surprising and fortunate that more people did not lose their lives.

Of course, fires know nothing of boundaries, and when there is a chance that they might develop to an extent even approaching the dire circumstances of 18 January, it is vital that all available resources can be optimally deployed to either subjugate them or reduce the threat.

The mechanisms for the coordination of efforts to combat the January fires worked reasonably well for most of the time, and the dedication and commitment of all those involved were of the highest order. As described in Chapter 2, the urban Fire Brigade relieved the Bushfire Service of the task of responding to

fires around the fringe of Canberra, so that the Bushfire Service could concentrate on the fires in the hills. Nevertheless, practically all fire-suppression activity before 17 January was handled by the Bushfire Service; it was not until 17 January that the urban Fire Brigade became directly involved.

It could be said that the urban Fire Brigade was waiting for the problem to come to it, so that it could apply its firefighting skills and specialised equipment to its primary task—extinguishing fires in buildings. When the fires reached the edge of the city, fire units within the boundaries, assisted by some bushfire units and many individuals who chose to stay, worked strenuously to suppress the fires in or threatening homes, and many were saved. By that time, though, the fires were so severe it was well beyond the Brigade's capacity to extinguish them. Indeed, it was probably beyond the capacity of any urban fire brigade in Australia.

As noted, the equipment, skills and abilities of staff in the Fire Brigade and the Bushfire Service are different. There are, however, significant overlaps in terms of their capacities; for example, Fire Brigade staff deal with bush and grass fires in the built-up areas and they can cross over to bushfire tankers. It is vital that in the future more urban Fire Brigade staff have sufficient skills and training to allow them to be deployed with their colleagues in the Bushfire Service to control or extinguish significant fires in the bush in the hope that risks to both the city and rural settlements and holdings will thereby be reduced.

The urban Fire Brigade's capacity to contribute to fighting fires outside the city was demonstrated when it assisted the Bushfire Service with back-burning operations at Tharwa and Tidbinbilla. This combined effort may well have saved Tharwa when fires moved through that area on the following day.

The January 2003 fire experience confirms the need for a relatively small community such as the ACT to have the capacity to mobilise all the local assets at its disposal when a crisis occurs. The institutional arrangements for provision of emergency services should be designed in such a way as to facilitate this.

There has been a sensible evolution towards this goal with the strengthening of coordination and planning and the benefits of headquarters co-location and sharing arrangements resulting from the creation of the Emergency Services Bureau. There remains, however, scope for these services to be better integrated. In the Inquiry's view, the next logical step in the evolution of emergency service management in the ACT should now be taken by fully integrating the services' operations.

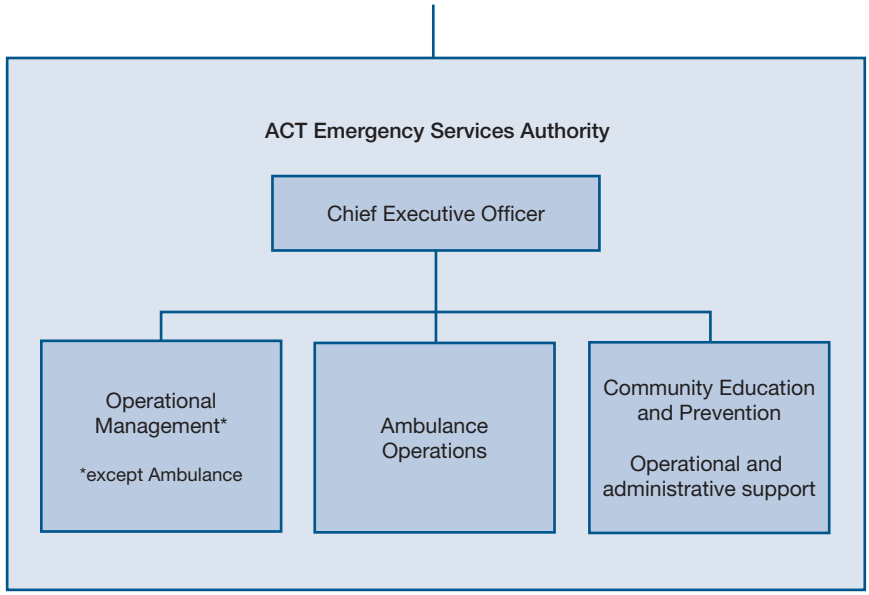
The question is: how can a more integrated and coordinated bush and urban fire effort best be achieved institutionally, in ways that preserve and enhance the distinct skills and abilities of both fire services, increase their combined power, and allow them to work more effectively with other related emergency services?

The Inquiry concluded that these objectives can best be achieved through the creation of a new statutory authority to replace the Emergency Services Bureau. This new authority would have the following characteristics:

- It would be separate from and independent of any department of state and would be outside the public service.
- It would be responsible for the overall strategic direction, management and operational control of the ACT Bushfire Service, the ACT Fire Brigade, the ACT Ambulance Service and ACT Emergency Services.
- It would report directly to the Minister responsible for emergency services.
- It would be headed by a full-time Chief Executive Officer.
- It would be structured in such a way as to
  - maximise the opportunities to improve the operational effectiveness and flexibility of all of the emergency services organisations
  - acknowledge the upgraded emphasis on community education and information and media relations
  - retain a degree of operational separation for the Ambulance Service, in recognition of the extremely limited opportunities it has for cross-over with other emergency service agencies.
- It would provide common planning, administrative and logistical support to all its component parts and would have a common communications facility, command and control centre, and headquarters.

The basic structure of the proposed Authority is shown in functional groupings in Figure 6.

Figure 6
Minister responsible for Emergency Services



Legislation is needed to support the establishment of the new Authority. Because the existing legislative instruments that create the urban fire brigade (the *Fire Brigade Act 1957* and the *Fire Brigade Administration Act 1974*), the Bushfire Service (the *Bushfire Act 1936*), the Ambulance Service and ACT Emergency Services (the *Emergency Management Act 1999*) will all require amendment and because a number of the provisions in this body of legislation are out of date or needing revision, a major exercise will be involved in developing modern legislation consistent with contemporary legislative practice.

In order to avoid delay in setting up the new Authority, it is proposed that if there is support for creation of such a body, an enabling piece of legislation be developed—with the minimum amount of prescription necessary to support its establishment, but with provisions to permit the new authority to be deemed the relevant authority for the purposes of these other Acts.

This would assist in getting the authority under way with a minimum of delay, and would enable it to contribute to the review of the existing legislation. There would be scope to simplify the legal framework considerably in time, but in the meantime the benefits that should be gained from integration of the services in this fashion, can start to be harvested more quickly.

A new and independent authority along these lines offers the following benefits:

- a stronger, more cohesive strategic and operational direction for fire, ambulance and emergency services
- decision-making authority resting more in the hands of those with the technical and specialist experience, skills and abilities to give it practical effect
- a unity of command that is currently lacking in the emergency services area
- a stronger operational culture for all its components by virtue of removing its functions from the public service environment
- direct access to the relevant Minister
- improved operational ties and cooperation between the Bushfire Service and the Fire Brigade through the creation of a pool of firefighters who will have the opportunity to be more broadly skilled, in both urban and rural firefighting disciplines. This will increase the flexibility to use personnel in scaling-up during a large crisis, as well as increase the options available for an initial attack on bushfires
- a better working environment for the members of all services, both full-time employees and volunteers, and greater identification of one with the other.

The proposed Authority would bring with it the incidental prospect of some efficiencies. This is not a specific objective behind the recommendation; it would therefore be appropriate for the new Authority to be able to retain any savings it is able to realise as a result of different management arrangements.

As far as the two fire services are concerned, in the vast majority of cases it could be expected they would continue to deal with specific incidents in much the same way as they now do. In more serious circumstances, though—when bushfires are likely to threaten buildings in the urban area or when urban fires might cause other fires in the bush—operations could be expected to be more joint and the boundaries of responsibility regarded more flexibly, so that efforts to eliminate the danger can be maximised.

It will be a particular objective of the head of the Authority to develop a common operational culture within the firefighting elements of the Authority.

Although the ACT must devise fire services that best suit its needs, experience and developments in the Australian states provide a measure of reassurance in relation to a recommendation that a new, independent statutory authority be established. For example:

- Most fire services are established outside public service structures.
- As urban encroachment has become a pronounced feature of the expansion of most capital cities, there has been a gradual move towards some multi-skilling of staff in most fire services.
- Both the Tasmanian Fire Service and the Country Fire Authority in Victoria are examples of the successful merger of bush and urban fire services; they would be good models to follow. In most other states stronger links between the fire services have progressively been developed at higher management levels, although without amalgamation.

It is worth noting that the land area of the ACT is about 3.5 per cent of that of Tasmania and about 1 per cent of that of Victoria. Moreover, there is only one level of government in the ACT, whereas in all states there are both state and local levels of government. These facts add weight to the wisdom of moving towards full integration in the ACT.

The proposed Authority, through its direct access to the Minister, would be able to provide advice to government on matters that directly affect its operational responsibilities. It will still be necessary, though, for the department that supports the Minister responsible for emergency services to have a small policy-advising cell covering the government's interests in the shape and form of the formal emergency management arrangements across the Territory and in the Territory's involvement with the Commonwealth and the other state governments in planning and exercising the national emergency management and anti-terrorism plans.

The position of Executive Director and its statutory responsibilities under the Emergency Management Act, are, with only very minor modification, ones that in the future should be undertaken in the relevant department. Upon the abolition of the Emergency Services Bureau, the Executive Director position should transfer to the department and continue to undertake the planning, monitoring and policy formulation functions envisaged in the present Act.

Consideration will need to be given to the role of the Bush Fire Council if the Authority is established along the lines proposed. This is dealt with later in this chapter in the section entitled, 'The *Bushfire Act 1936* and other legislation'.

Consolidating separate functions into a single organisation is never easy. Long-held and valued cultural norms and ways of doing things are inevitably affected. This would need to be dealt with directly, sympathetically and realistically. The professionalism and esprit de corps of the full-time employed workforce and the strong sense of community service and motivation of volunteers must be protected and encouraged, so that in combination the two groups make up something greater than they do separately.

> In the longer term it should be remembered that fighting bushfires is an essential public service which is needed in most parts of Australia, and our society's ability to deal with emergencies will always be hindered so long as responsibility is spread among a multiplicity of authorities. We think an umbrella organisation able to draw members as needed from all existing control authorities, and with statutory powers to call upon Commonwealth and interstate resources when emergency conditions exist across borders, should be the way to go.
>
> — Queanbeyan resident.

It cannot be expected that all this will happen overnight: it will take time, dedicated resources and effort to bring it about. It is one thing to establish a new organisation through legislation, to define its organisation chart and to staff it; it is quite another thing to make it work well and allow it to realise the potential envisaged for it. This would be a special initial responsibility of the person appointed as the inaugural Chief Executive Officer and their senior team, with the support and backing of the ACT Government and the relevant Minister.

The Inquiry suggests that the Chief Executive Officer position be advertised and filled on a contract basis before the passage of the enabling legislation, to begin the process of managing the transition to a new structure as soon as possible.

It would help if the Government assured the existing staff of the emergency service bodies that creation of a statutory authority would not prejudice the rights of tenure they currently enjoy. This would allay personal fears about the future as well as obviate the possibility of any suggestion that the proposal is a disguised cost-cutting exercise. Volunteers would also appreciate being given an early assurance that their role will not diminish in any way under

the new arrangements. Indeed, the new arrangements will probably create greater opportunities for career and personal development, for both employed staff and volunteers.

Because a recommendation to create a new authority will generate expectations, and a degree of uncertainty in the minds of some staff and volunteers, it is highly desirable that the Government reach an 'in principle' decision on the recommendation as quickly as possible.

It would also be of substantial benefit if there were bipartisan political support for the proposal.

Recommendations

- The separate organisations that make up the emergency services group, that is coordinated by the Emergency Services Bureau, and the associated arrangements, should be replaced by a statutory authority, the ACT Emergency Services Authority.
- The proposed Authority should be headed by a Chief Executive Officer.
- The position of Chief Executive Officer should be advertised and filled on a contract basis before the enactment of the legislation. In this way the person appointed can contribute to formulating the legislation and the transition process can begin without delay.
- Upon the abolition of the Emergency Services Bureau, a small policy formulation unit should be established in the department that supports the Minister responsible for emergency management.

The Emergency Management Act

The current organisational arrangements in the emergency services area arose from a series of decisions taken in the early 1990s with the purpose of strengthening coordination and cooperation between the various emergency service organisations. This reflected similar policy directions in most other Australian states.

A program of major change began, the central elements of which involved the following:

- a strong focus on creating a top management group comprising the executive heads of the various bodies involved in emergency management—the police, the urban and rural fire brigades, the emergency services body, and the Ambulance Service. The heads of the government agencies responsible for managing forests and national and Territory parks were also included
- the collective involvement of these agencies in emergency management, encompassing an all-hazards approach to disaster planning
- a consultative approach to change through various mechanisms that were established
- a commitment to achieving some efficiency improvements in the process.

The Emergency Services Bureau was formed to provide an overarching management structure to lead the coordination and strategic planning of all emergency service activities. It was located at a former school in Curtin, and the chief executives of the urban fire brigade, the bushfire and emergency services organisation and the Ambulance Service were co-located there. The intention was to strengthen the capacity for overall coordination and planning and to achieve greater synthesis between these hitherto separate organisational elements. The Bureau was headed by an Executive Director, whose role was to take the lead in providing strategic direction.

A common command and control centre was established at the Curtin complex for the three separate services, whose operational command was, and remains, the responsibility of each of the component chiefs.

ACT Policing—the other important element in the ACT emergency management structure—is not represented at Curtin, but it is included as an equal partner in all the planning arrangements. ACT Policing headquarters is at the

Winchester Centre in Belconnen, some 10 kilometres away. For reasons of practicality, the Police operate their own command and control centre there.

The passage of the *Emergency Management Act 1999*, which came into operation on 1 January 2000, formalised these arrangements and set out the emergency management support mechanisms, including providing the legal framework for the development of the ACT Emergency Plan, the establishment of high-level arrangements covering the management of emergencies, and arrangements associated with the declaration of a state of emergency in the Territory.

The Act provides that on a day-to-day basis the Executive Director of ESB is responsible for emergency management in the ACT. Among the Executive Director's responsibilities are conducting vulnerability analyses, providing education programs and coordinating public information, developing preparedness plans, and establishing and monitoring communications networks.

The Emergency Plan is developed through an Emergency Management Committee, chaired by the ACT Chief Police Officer and consisting of the executive heads of the major ACT government departments and agencies. Meetings are held regularly and are usually attended by the executive heads themselves.

The Emergency Plan contains a series of sub-plans dealing with different aspects of the management of emergencies—such as medical, flood, hazardous materials, and exotic animal diseases—but, interestingly, there is no sub-plan for bushfire emergencies, presumably because, unlike other kinds of emergencies, management of bushfire-related emergencies is already well covered from the legislative, policy and management viewpoints by the *Bushfire Act 1936* and associated arrangements.

At government level, the Emergency Plan and amendments to it are approved by the Minister responsible for emergency management.

In a serious event, the Chief Minister may declare by instrument a state of emergency in the ACT. Considerations for such a declaration may be that the event or situation:

- has the potential to overwhelm existing personnel, facilities, equipment and capabilities

- requires a significant and coordinated response

- is or could be an escalating multi-agency, multi-jurisdiction event
- could disrupt both the structure and function of the community
- requires emergency powers to manage it.

The Emergency Management Act provides that when a state of emergency is declared the Emergency Plan is automatically activated and a Territory Controller is appointed to manage the emergency in accordance with the Plan. The ACT Chief Police Officer automatically becomes the Territory Controller.

The Minister can assign to the Territory Controller a number of functions, among them managing the response by ensuring that agencies, organisations, people and other resources are deployed appropriately and coordinating the immediate recovery to restore the ACT to normal operations. The Minister can also assign to the Territory Controller wide-ranging powers to reduce the risk to life and property in an emergency; this includes the power to evacuate people from an emergency area.

The Act provides that, at the instigation of the Territory Controller and with the approval of the Minister an Alternate Controller can also be appointed; this office has the same functions and powers as that of Controller.

During an emergency, ACT government agencies continue to operate within the boundaries of their legislated or agreed roles and responsibilities. However, the Controller has authority to direct the head of an agency, including an emergency service agency, to carry out response or recovery operations. The agency head determines how the action will be taken.

The basic purpose of these arrangements is to replace the normal, and sometimes complex, government administrative arrangements that involve many different players—Ministers, departmental and agency heads, Cabinet, interdepartmental committees, and so on—with much simpler and more direct decision-making processes and to permit the assumption of a range of special coercive powers that would not normally be able to be exercised by an official without being accompanied by a range of checks and balances. The management of emergencies often requires quick and firm decisions, which would be substantially inhibited if it were necessary to adhere to normal governmental processes.

Declaration of a state of emergency

At 2.45 pm on 18 January 2003, the Chief Minister declared a state of emergency throughout the ACT. This was the first occasion in the Territory's history that such a declaration had been made. The immediate effect was to vest in the Chief Police Officer of the ACT, Mr John Murray, the special powers of Territory Controller under the Emergency Management Act. Shortly after, with the approval of the Chief Minister, the Controller appointed Mr Peter Lucas Smith, the Director of ACT Bushfire and Emergency Services, to be the Alternate Controller. These actions were in accord with the provisions of the Act and were designed to meet the Chief Minister's wish that Mr Lucas Smith's responsibility for operational management of the fires continue uninterrupted, while extending to him the range of additional coercive and directional powers under the Act should they need to be exercised.

Declaration of the state of emergency also had an important symbolic value in publicising the extreme seriousness of the threat and putting the community on notice that a very significant event was happening. This was an incidental consequence, however: it was explained to the Inquiry that the main motivation in declaring the state of emergency was to have available the power under the Act to evacuate people from the emergency area if this became necessary. In the event, the special evacuation powers were not used. The Police relied on their traditional Common Law powers in seeking to evacuate people, as they had done so in the 2001 fires.

As subsequent events demonstrated, the appointment of an Alternate Controller exposed a weakness in the Act. The Chief Police Officer was of the view that his powers as Controller were not extinguished upon the appointment of the Alternate Controller and that they both had available to them the same array of powers, provided by the Act. The evacuation power was important to the Chief Police Officer since it was the power most likely to be of greatest significance if conditions deteriorated. He had legal advice that supported his view.

Although it may be that the Act, as it is written, legally allows this to happen, the Inquiry is of the view that it was never contemplated that more than one person might be in charge of the management of an emergency at a particular point in time. The Inquiry considers it more likely that the Alternate Controller provision was intended to provide the flexibility of permitting, with government approval, the appointment of a person other than the Chief Police Officer to in effect be the Controller if the circumstances warranted it—as appeared to be the case on 18 January 2003.

It seems highly improbable that it was envisaged that two 'El Supremos' could exist at the same time, with identical powers, in the absence of any reference in the Act as to how they would relate to each other and how any disagreement between them would be resolved.

The Controller (or the Alternate Controller if one is appointed) is required to establish a Management Executive as soon as practicable after the declaration of a state of emergency, to provide support in managing the crisis. The members of the Emergency Management Committee and anyone else the Controller (or Alternate Controller) considers appropriate, make up the Management Executive.

In the event, the Chief Police Officer saw his role as concentrating on the recovery task, leaving Mr Lucas Smith to devote his attention to managing the firefighting operation. This arrangement was agreed at a meeting of the Management Executive, chaired by the Alternate Controller on the morning of 19 January. This was a very sensible sharing of responsibility in the circumstances, but it still created some uncertainties and vagueness in terms of precise roles and the relationship between these two key players.

On 20 January the Chief Police Officer convened at police headquarters in Belconnen, the first of a subsequent series of daily meetings of what was described in some contexts as the Management Executive and in others as the Emergency Management Committee, to deal with matters associated with the recovery task. The accurate identification of the committee is of more than semantic significance because of the different purposes each have under the Emergency Management Act.

The Emergency Management Executive exists to provide close support to the Territory Controller (or the Alternate Controller when one is appointed) whereas the Emergency Management Committee is a permanent committee also set up under the Emergency Management Act, with an ongoing planning and policy formulation role unrelated to the declaration of a state of emergency. The Chief Police Officer is the permanent chair of the Emergency Management Committee, whereas the Management Executive exists only while there is a state of emergency. If it was in this latter role that the Committee sat, for the Committee to have been properly constituted there needs to be acceptance of the validity of two Controllers functioning at the same time, with the same formal powers under the Act.

Whatever the legal position, the convening of the Committee while the state of emergency was in force—involving as it did basically the same people who needed to be available at Curtin for Management Executive meetings convened by Mr Lucas Smith—necessitated travel between the two centres at a difficult time. It also raised questions about the relationship between the two centres and the respective roles of the Controller and the Alternate Controller and added another layer of ambiguity to the management arrangements.

The Inquiry is not suggesting that the matters that were discussed were not germane to the situation and that they did not need to be dealt with at the time. What it does point out though, is that the structure of the Act and the purpose and intent of its provisions need to be clarified. An unambiguous line of authority and description of roles and responsibilities should be contained in the legislation, so that in the pressure of a crisis, leadership and operational decision making can proceed with the maximum possible certainty and clarity.

For the future, it is especially important to remove any ambiguity in the Act about the role of an Alternate Controller. The principle the Inquiry believes should be followed is that, where it is necessary to declare a state of emergency and to introduce the special management arrangements that follow, government should have full discretion in appointing as Controller a person who is considered best qualified to take the leadership role, given the character of the emergency and the demands likely to be involved. It may be the Chief Police Officer; it may be the head of the lead agency, having regard to the nature of the emergency; or it may be someone from elsewhere inside or outside government. To provide the maximum flexibility in choice of the best person for the particular task, the Inquiry believes that the option and the responsibility for making this choice should rest with the government of the day and not be pre-determined by the Act. There is no difficulty with a provision in the Act that nominates the Chief Police Officer, 'subject to the discretion of the Minister (that is, the government) to determine otherwise'.

The appointed Controller should then have the capacity to delegate his or her special powers to others to assist in the management of parts of the emergency and for them to have, by delegation, the capacity to exercise whichever of the available powers are necessary for that purpose.

The Inquiry has less concern about leaving the ACT Chief Police Officer as chair of the Emergency Management Committee, which is essentially an ongoing planning body that carries out its tasks away from the management of a specific emergency. It is the role of the Management Executive to provide assistance to

the Controller during an actual emergency—not the Emergency Management Committee, which has (or should have) a distinct and different role under the Act, notwithstanding the close similarity in the membership of both groups.

The Chief Police Officer submitted to the Inquiry that since the events of September 11, the link between law enforcement and consequent management of large-scale natural disasters or terrorist incidents is seen to be artificial and counter-productive. He pointed to the inclusion of Emergency Management Australia on the National Counter Terrorism Committee as an indication of this reasoning.

The value of developing the capacity of ACT Policing's Winchester Centre as a multi-functional operational command and control facility for big emergencies, whatever their character (including for the ACT's involvement in counter terrorism incidents and exercises), is also seen by the Chief Police Officer as an option government should consider.

He informed the Inquiry that flexibility in appointing a Controller on a case-by-case basis may result in a system that provides little scope for rehearsed or well-exercised channels of command and control. Such a scenario, he claimed, may have major impacts on the fluid operation of agencies and on cooperation during a major emergency, especially between police and other services, at a time when the community least needs confusion in its services.

Against this background the Chief Police Officer argued that his role under the Emergency Management Act should not change and that while clarification of the operation of parts of the Act was needed, the capacity for the Territory Controller to continue to exercise powers in a state of emergency, notwithstanding the appointment of an Alternate Controller, should also be confirmed.

These are valid considerations.

Because the Emergency Management Committee is a planning body that involves many of the heads of the ACT government service, and because its role is to formulate and refine a robust Emergency Plan, it could be argued that the appropriate person to chair the committee is the Chief Executive of either the Chief Minister's Department or the Department of Justice and Community Safety (the department responsible for supporting the Minister for Police and Emergency Services).

On balance, the Inquiry's preference would be for the Emergency Management Committee to be chaired by the head of the Department of Justice and Community Safety since the role is in keeping with the policy-advising role of that official and it emphasises that the function of the Committee is to help develop and monitor the Territory's emergency management structure and arrangements from a policy standpoint. In other words, its function is policy development and support to government, rather than being basically operationally focused.

Selection of the chair is a matter for government.

A tiered approach to emergencies

It was suggested to the Inquiry that it would be helpful if the Emergency Management Act contained provisions for notification of the escalation of an emergency through different stages or levels. This was considered to offer more options for a government to choose differing arrangements appropriate to emergencies of varying levels of seriousness or as a particular emergency either increases or decreases in intensity.

Some states have emergency management legislation of this kind; South Australia is an example. The declaration of a state of emergency is an 'all or nothing' proposition in the ACT. The value of a more graduated framework, with different arrangements for management and the exercise of powers appropriate to the different levels of emergency events, has appeal.

Care is needed, however, to avoid blurring the distinctions between different degrees of emergency, which could create confusion within the community. It would also be unfortunate if the psychological value and impact that the declaration of a state of emergency currently has in alerting the community, were to be weakened.

Nevertheless, emergencies come in many guises and can change character during their course. The Inquiry concluded that a government should have the option of being able to select the type of management structure it considers best fits the situation at hand. The Inquiry therefore favours amendment of the Act to allow more flexibility of choice in this regard.

Executive government authority during a state of emergency

It was also suggested to the Inquiry that the current Act does not sufficiently recognise the continuing role and responsibility of the executive government during a state of emergency. In the Inquiry's view this is worth reconsidering when examining how the Act stood up to the bushfire crisis.

Governments are elected to govern and—short of situations where there is a total breakdown of authority, when normal governmental institutions and arrangements are unable to function—the handing across of political control and authority to a public official to manage an emergency, with substantial coercive powers and few checks and balances, should normally be contemplated only in the most extreme of situations. This is probably why in the state government arena the extant powers to declare a state of emergency have rarely been exercised. They have never been exercised in New South Wales, for example, despite the occurrence of numerous large-scale emergencies such as severe floods, earthquakes, major bush fires and railway disasters.

Although the declaration of a state of emergency under ACT legislation does not completely remove the government's capacity to influence the manner in which the emergency is managed—for example, the Act allows the Minister to give a written direction to the Controller—it is the Inquiry's view that the design and expression of the Act would benefit from a re-think. The aim would be to see whether it is possible to achieve a better balance between acknowledging the executive government's retention of ultimate power and authority while allowing an appointed official considerable discretion to manage a situation quickly and decisively, unhindered by normal bureaucratic controls.

Other provisions of the Act

Apart from the uncertainties associated with the appointment of an Alternate Controller, the opportunity to provide for a graduated scaling of emergency management arrangements, and the need for stronger recognition of the continuing responsibility of the executive government during declared states of emergency, the provisions of the Emergency Management Act, covering the way in which preparation and planning for emergencies occurs, generally worked very well and confirmed that in other respects the Act is not in need of change.

Recommendation

The ACT's *Emergency Management Act 1999* should be reviewed with the aim of preparing legislation that provides as follows:

- In a declared state of emergency, the ACT Government should have the capacity to appoint as Territory Controller a person who is considered to be best qualified to take this role, having regard to the nature of the emergency or event giving rise to the declaration.
- The Controller shall have the capacity to delegate to a nominated person any or all of the powers that have been assigned under the instrument of appointment as Controller.
- The chair of the Emergency Management Committee shall be appointed by the Minister responsible for the administration of the Emergency Management Act.
- There should be a capacity for different levels of special powers and the capacity for escalation to be invoked to assist in the management of emergencies, having regard to the differing scales or types of emergencies that may arise or the changing nature of an emergency during its course.

The Bushfire Act and other legislation

The *Bushfire Act 1936* (as amended) expresses in legislative form the fire management arrangements that have evolved in the ACT since the original enactment in 1936. It is, however, out of date in a number of respects, and there is general acknowledgment that it needs revision and re-expression in a contemporary context. The Government's consideration of this report and other matters associated with the January 2003 bushfires should provide the stimulus for a major overhaul of the legal framework governing the manner in which the ACT responds to its obligations to protect the Territory, its citizens and assets, and the natural environment held in its trust.

The Bush Fire Council

The Bush Fire Council was set up in 1939, following the damaging bushfires that occurred in that year. It has a statutory existence under the Bushfire Act with responsibility to take action it considers necessary to 'prevent or control the outbreak or spread of fire and to protect from the outbreak or spread of fire life and property in any part of the ACT other than a part that is a built-up area'. It also is empowered to 'acquire firefighting equipment, employ workers, organise fire prevention and control associations and distribute literature relating to fire prevention and control'.

Despite the appearance that the Council is the controlling body of bushfire organisations in the ACT, for many years it has not performed this role. After some years of uncertainty as to its role, the Council in recent years, with the agreement of successive governments, has developed into an advisory body that undertakes a program of research activities and prepares reports on selected topics of interest and concern to the Bushfire Service. Its role has been defined as 'to provide strategic information rich, expert advice on bushfire matters for the benefit of the people of the ACT'.

Its members all accept office on a voluntary basis and comprise a range of people with varying expertise in different matters of relevance to bushfire management.

In its submission to the Inquiry ESB acknowledged the need to review and modernise the role of the Council and to have the legislation amended so as to more accurately reflect the council's current (or future) role. The Council also agrees with this view. ESB is supportive of the Council and believes it has been operating very successfully in its current advisory capacity.

The Inquiry considers it important that if a new authority is to be established, as is recommended, the Council should continue to exist in its current role and the Chief Executive Officer of the Authority should have the discretion to establish other advisory bodies to support the Authority's activities. Bodies of this kind that tap outside expertise and strengthen broader relationships are important to an organisation that has close links to the community through its reliance on volunteer support and its charter to build a strong partnership with the community in developing new fire-protection and mitigation strategies.

Recommendation

The *Bushfire Act 1936* should be reviewed and redesigned to reflect contemporary needs, and the ACT Bush Fire Council's role should be re-expressed in the Act to more accurately describe its current activity.

Review of emergency management legislation generally

Establishment of the proposed Authority would generate the need for more legislative change—the Emergency Management Act, the Bushfire Act, the Fire Brigade and Fire Brigade Administration Acts, would all need to be changed. This should present an opportunity to review all the relevant provisions. Placing those that have a continuing validity into a single emergency management act would seem to the Inquiry to be a desirable outcome to work towards.

Bushfires and land planning

Notwithstanding the set of circumstances that combined to create bushfires of such ferocity on 18 January 2003, the speed and ease with which the fires travelled across the tract of land between the Murrumbidgee River and the city surprised many experienced observers. Corridors of highly volatile vegetation, such as the Stromlo pine plantation, obviously aided the passage of the fires, but even paddocks and pasture land with very little apparent surface vegetation as a result of the drought failed to cause the fires to falter.

The physics of the fires and how they became such a lethal force is still being studied by experts. One aspect that does seem clear, though, is that the bulk of the property damage was caused by airborne embers[1] resulting from the huge amount of combustible material. Embers were being spread widely and quickly by an extremely strong wind, which most probably had been generated by the enormous convection column that formed when the fires were at their fiercest.

If this explanation is accepted, the wisdom of having a pine plantation—or any kind of plantation, for that matter—very close to the edge of a large city is highly questionable. It is recognised, of course, that the Stromlo pine plantation's existence precedes by a number of years the extension of the urban edge of Canberra to Weston Creek. The homes along Warragamba Avenue and Eucumbene Drive in Duffy and Holder, which bore the brunt of the fires coming out of the plantation, were about 100 metres from the plantation. On any reasonable test, this would appear to be an adequate distance; in New South Wales for example, the laws relating to bushfire-prone areas that attract more stringent building requirements exclude all properties more than 100 metres from the edge of the adjoining forest or bush.

Although the danger of spot fires is greater close to a fire front, embers are known to be capable of starting spot fires large distances away from the fire source. When gale-force winds or convection currents are present, spotting has been known to occur up to 35 kilometres away.[2] Eucalypt forests are notorious for being the world's most dangerous forests in terms of spreading spot fires. Pine trees also spot dangerously, although over shorter distances than eucalypts.[3]

Spotting over long distances is a phenomenon connected with bushfires that crown—that is, where fire reaches the tree canopy. This is more likely to occur where trees are closely packed, as in dense forest or in plantations. Fires are generally less likely to crown in a sparsely wooded landscape, with a

consequent likelihood that spotting, if it results from surface fires, will only extend over quite short distances. In a PhD thesis dealing with spotting, Peter Ellis, from the CSIRO Division of Forestry and Forest Products, estimated that when flames from a surface fire are less than 1 metre high there will be no spotting; with flames 2.5 metres high, spot fires can start up to 20 metres away.[4]

The most serious bushfire threats are likely to continue to come from the north-west and west of Canberra because of the weather conditions that generally prevail during periods of high fire danger and the nature of the bushland vegetation in the Brindabella Range and surrounds.

Against this background, the Inquiry considers there are some principles the authorities should keep in mind when determining and planning land use between the vulnerable western perimeter of Canberra and the foothills of the mountains further west. One of the primary planning considerations should be to treat this area in such a way as to maximise its value as a fire-abatement zone. In this way, land use will be consistent with the aim of providing a protective belt around the city as a central part of a fire-mitigation strategy. By deliberately creating an area where fires can be attacked more easily and where the intensity of the fires can be moderated by the relative absence of high-density fuel loads—which is difficult or impossible to achieve in the more mountainous, forested country—Canberra's vital assets will be better protected.

Much of the country to the west of the city is already being used for purposes consistent with this aim—for example, grazing properties, equestrian parks, agistment paddocks, golf courses and playing fields. What needs to be done is to fill in the gaps with a sensitivity to the value of the proposed zone as a fire-suppressant area that is more effective than the current landscape.

The landscaping of the zone should be in sympathy with the zone's purpose, as well as with its public and private uses. For example, tree plantings can serve a positive purpose from a fire-mitigation viewpoint if the species used and the location are carefully selected. Some tree species can slow the rate of spread of bushfires, and dense foliage can trap radiant heat and stop the spread of burning embers, thus limiting a fire's reach and intensity.

In the Inquiry's view, a number of principles warrant consideration before any substantial new structures are proposed for or land use decisions are taken in relation to the area north-west and west of Canberra.

A bushfire-abatement zone: planning principles

1. The history of bushfire behaviour in the ACT, and the knowledge that Canberra will continue to be exposed to bushfire and grass fire threats of varying degrees of severity on a fairly regular basis, should be factored into future planning decisions affecting the use of land on the vulnerable western and north-western edge of the city.

2. A fire-abatement zone to the west and north-west of the city should be identified for use as a planning tool when considering future development proposals that fall within the zone. The zone should be defined and gazetted after further detailed examination.[5]

3. The ACT bushfire authorities should have an opportunity to express their views on the risk of bushfire impacts and the degree of seriousness of the threat associated with proposed new land use developments in the zone.

4. High–bushfire risk developments, such as commercial plantations, should not be located in the zone.

5. Suitably developed recreational parks and woodlands could be permitted, provided that the density and nature of tree planting and vegetative growth are such as to minimise the risk of crown-fire spotting should a fire break out in extreme conditions. The choice of flora planted in the zone should be made having regard to the species' value in complementing the fire-mitigation purpose of the zone.

6. The abatement zone should be a declared bushfire-prone area. Public and private buildings and infrastructure constructed in the zone should conform to the requirements of the Building Code of Australia, which contains standards for bushfire-prone areas.

7. All public areas in the zone should be subjected to a rigorous maintenance regime, to minimise the risk of uncontrolled fire. The Bushfire Fuel Management Plan should be the vehicle for government endorsement of the program of fuel management, to be carried out in the zone by public land managers. Private leaseholders are already obliged to enter into land management agreements covering, among other things, fuel management plans. These agreements should be the vehicle for inclusion of any additional requirements that are needed following the introduction of a fire-abatement zone planning concept. The fuel management plan should reflect a stepping-up of the scale and intensity of fuel reduction where the zone approaches the edge of Canberra.

8. Any proposal for an extension of the city's boundary or any other residential or business development in the zone should specifically take account of, and publish the results of, an assessment of the bushfire risks associated with the development—noting that any decision to approve a change to the Territory Plan is a disallowable instrument and would therefore open the change up to scrutiny by the Legislative Assembly.

The impact of the fires and tornado strength winds on pine forest. Photo courtesy Pat Barling.

If the abatement zone is declared a bushfire-prone area, the Inquiry considers there is no need to place a similar declaration on the western and north-western outer suburbs. Undoubtedly, the outer suburbs face a greater threat than the rest of the city—particularly the first couple of streets closest to the bushland—but the Inquiry favours an approach whereby recommendations are made to householders in relation to desirable building features and garden landscaping, rather than creating a mandatory building and landscaping code of practice.

The question of whether existing areas of Canberra should be declared bushfire-prone is being considered as part of the ACT Planning Authority's Urban Edge Review. That Review might be taking into account factors this Inquiry has not specifically considered, since there has been no opportunity to consult on this matter. However, the Inquiry draws the Review's attention to the comments made here.

The Building Code of Australia is being reviewed following the 2003 fire events in south-eastern Australia. That review is due for completion by September 2003 and the results should be published before the coming fire season. Any recommended changes should be acted upon in the ACT as a matter of course.

Adoption of a planning approach that is more bushfire conscious should not impose unreasonable restrictions on government or the community in determining a mixture of land uses that satisfy the ACT's economic, recreational and environmental needs. The aim is to achieve a comfortable synthesis between the different objectives, which, in the Inquiry's view, are not necessarily incompatible.

Finally, similar measures have some relevance to the north, east and south of Canberra. Although serious fires are less likely to affect these areas and measures may not need to be as rigorous as those proposed for the west and north-west, it would be unwise to ignore the risks of bush or grass fire affecting all approaches to Canberra.

Recommendations

- A fire-abatement zone should be defined between the north-west and western perimeter of Canberra and the Murrumbidgee River and the foothills of the Brindabella Range.
- A set of Bushfire Protection Planning Principles in relation to fire mitigation and suppression should be adopted and applied to future developments in the designated abatement zone.
- The abatement zone should be declared a bushfire-prone area, and the requirements of the Building Code of Australia—in particular, its standards for bushfire-prone areas—should be applied to all future developments in the zone.

Notes

1 Embers are small, glowing particles, often in dense aggregations. Large, usually isolated particles, often flaming, are sometimes termed 'burning brands'. These can be responsible for spot fires that ignite many kilometres from the source. For the purposes of this Inquiry, 'embers' covers both forms.

2 Webster, J 2000, *The Complete Bushfire Safety Book*, 3rd edn, Random House, Sydney, p. 15.

3 ibid., p. 11.

4 ibid., p. 14.

5 The NSW Rural Fire Service guide *Planning for Bushfire Protection* is a useful starting point from which to develop a set of planning requirements for application to the proposed abatement zone.

7 Summary of recommendations

Fuel management

1. The ACT Bushfire Fuel Management Plan should be reviewed in the light of changed circumstances since the January 2003 fires. Increased emphasis should be given to controlled burning as a fuel-reduction strategy.

2. The Victorian Code of Practice for Fire Management on Public Land should be used as a 'best-practice' guide when revising the ACT Bushfire Fuel Management Plan and a similar set of priorities should be developed in relation to zones identified in the Plan.

3. An addendum to the existing 2002–04 Bushfire Fuel Management Plan needs to be prepared prior to the 2003–04 bushfire season, noting the extensive consultation process required under the *Bushfire Act 1936.* This addendum should focus on the area unaffected by the 2003 fires and the buffer zone surrounding Canberra's exposed northern and western perimeter. The addendum should be submitted to government for approval.

4. An annual audit of achievements under the Bushfire Fuel Management Plan should be conducted, with the results reported to government and published.

5. A public information strategy should be prepared to educate the ACT community about the beneficial and protective aspects of fuel-reduction burning and about the degree of inconvenience that will inevitably result for ACT residents during such burning. This should accompany the public launch of the revised Bushfire Fuel Management Plan.

6. The approval process for individual fuel-reduction burns that are consistent with the government-approved Bushfire Fuel Management Plan should be simplified so as to enable the limited time when the weather conditions are right to be used to maximum advantage.

Fire access

7. Clear policy guidelines should be developed and implemented to support the identification of a strategic network of fire tracks and trails and their establishment and maintenance. An audit process should be instituted to ensure that the policy's effectiveness is regularly monitored.

8. A risk assessment should be conducted by ESB to assist in determining access needs across the ACT, linked to interstate requirements, with advice being provided to land managers.

9. ESB should coordinate the development of emergency management mapping products such as 'map books' for police, land managers, emergency service crews and incident management teams; these should be produced in both printed and data form.

10. Greater opportunity should be provided for all senior firefighters to become more familiar with remote areas of the ACT.

11. Sufficient funding should be provided for additional crews and plant, so that a program of improved fire access and trail and site maintenance can be implemented.

12. Responsibility for fire access should lie with the land managers: advice and auditing functions should be the province of the fire authorities.

Aerial operations

13. Aerial bombing should remain a capability used in the ACT during bushfires, with particular emphasis on using the aircraft for water bombing as an immediate response—as soon as fires are detected. This should be backed up by the use of ground crews.

14. A small number of ACT firefighters should be trained as air attack supervisors, to provide a capability when the number of aircraft involved requires it.

15. To enhance its initial attack capability as well as to provide it with greater flexibility in the utilisation of aerial assets, the ACT should employ a medium-lift helicopter, rather than a dedicated light helicopter, to support its fire-suppression operations during the peak of future bushfire seasons. Such an aircraft, coupled with the potential use of the Snowy Hydro Southcare helicopter (when it is not engaged for medivac purposes), would provide greater flexibility and a far more formidable first-strike capability.

16. The ACT Bushfire Service should seek a joint agreement with the NSW Rural Fire Service, for the purpose of providing the ACT with enhanced capacity to draw on the aerial expertise, aircraft availability and efficiencies afforded by a much larger bushfire service.

17. The ACT Bushfire Service should explore conducting a joint trial with the NSW Rural Fire Service to assess the effectiveness of retardant bombing.

18. The ACT should continue to participate in Commonwealth-level discussions

that may result in enhanced aerial support for firefighting becoming available on a national basis in the future.

The Emergency Service Bureau headquarters facility

19. The ACT Government should take urgent steps to upgrade the Emergency Services Bureau's operational command and control facilities—either by carrying out a major refurbishment of the existing facility at Curtin or, preferably, by locating to a more suitable alternative site, where a more functional, longer term operations centre can be developed.

Incident command and control

20. The ACT Bushfire Service should review the current Incident Control System arrangements, through an inter-agency workshop involving ESB, the ACT Fire Brigade, the Department of Urban Services and ACT Policing, to better clarify the application of the system. In particular, incident controllers should not be expected to operate when separated from their supporting elements; they should function as part of a cohesive, integrated management team.

21. ESB should establish joint ICS teams, made up of ACT Bushfire Service, ACT Fire Brigade and Department of Urban Services personnel, to jointly manage emergency incidents within the ACT, regardless of location or the services' areas of responsibility.

22. Facilities at ESB headquarters should be such as to provide the best opportunity for the ICS to function at a tactical and strategic level in accordance with the Australasian Fire Authorities Council doctrine.

Vehicles and other equipment

23. Four rural pumpers should be added to the fire service fleet, specifically for use in the urban–rural interface.

The Rural Fire Control Manual

24. Work already begun on the review of the *Rural Fire Control Manual* should be resumed with the view to replacing the manual by new publications that cover the following:

- a document detailing public policy in relation to fire management
- an operational policy manual for internal use
- a supporting set of standing operational procedures covering techniques and practices reflected in the Basic Training Modules publications.

Training and development

25. In conjunction with the land management agencies, ESB should undertake a review of training and development needs for personnel involved in firefighting activities and develop a detailed future plan, identifying any additional funds required to support such a program. The plan should be submitted to government for consideration as soon as possible. It should take account of the comments and recommendations in this report that bear on training and development, including the need for secondments interstate with other fire authorities.

26. The Government should consider the proposals when they are submitted with the view to allocating some additional funding to enable the bushfire authorities to improve the training and professional development opportunities available to paid and volunteer personnel, in the interests of increasing their skill base and experience.

27. An outdoor training complex for all of the emergency service organisations should be provided; ESB should develop a detailed proposal for submission to government for consideration.

Occupational health and safety

28. A procedure should be adopted whereby important operational decisions affecting the safety of firefighters are discussed with a more senior officer before implementation, whenever this approach is feasible.

29. The responsible Minister should clarify the application of the ACT *Occupational Health and Safety Act 1989* to volunteers by issuing a ministerial directive.

30. Upon the Minister's directive coming into force, a legislative amendment should be made to continue the application of the protections against prosecution afforded under the *Bushfire Act 1936*.

Relationship between the fire management and land management agencies

31. The Chief Executives of the Department of Urban Services and the Department of Justice and Community Safety should work together to develop the means by which the public land managers and the ACT Bushfire Service can achieve a stronger, mutually supportive relationship.

32. Operational procedures should be amended once additional land management resources are in place, to reflect the responsibility of land managers to initiate the first response to fires on land that they manage—within the overall operational response of the ACT Bushfire Service.

Commonwealth and interstate contributions

33. An automatic weather station should be located in the Brindabella Range to assist with fire weather forecasting.

Scaling-up

34. The current discussions aimed at developing a possible memorandum of understanding between the ACT Bushfire Service and the NSW Rural Fire Service should proceed as a matter of urgency.

35. The ACT should initiate discussions with New South Wales authorities in relation to ways in which the current relationships could be developed at a regional level, with the aim of strengthening the linkages between kindred agencies and identifying how the resources available in the ACT and the surrounding regions could be more easily mobilised in serious emergency situations—to the advantage of both jurisdictions.

36. The level of resources for the training and operational exercising of volunteer bushfire and emergency service personnel should be increased, to improve current skill and experience levels.

37. Environment ACT and ACT Forests should employ additional summer personnel as firefighters and fire prevention workers to improve the ACT's firefighting capability, particularly in terms of rapid deployment to fires in remote areas.

38. These staff should provide land management agencies with a capability to be first responders to fires on land they manage.

Public education

39. ESB should be allocated additional resources so that it can upgrade its public education capability to support a stronger, continuing campaign of public education directed at improving the Canberra community's bushfire awareness, its understanding of the nature of the threat, and its knowledge of how people can better protect themselves and their properties. The campaign should draw on the public education experience of interstate bushfire authorities, particularly the Country Fire Authority of Victoria.

40. Initiatives such as fire guard and other forms of direct community support should be introduced to encourage self-help arrangements in the community.

41. The message to the community should include acknowledgment that in major bushfire emergencies:

- the authorities are unable to guarantee that firefighters will always be available to assist
- householders generally need to take sensible precautions and be prepared, if that is their choice, to protect their own lives and properties
- the authorities are committed to doing all they can to help, including advising the community on how best to go about achieving a higher degree of personal and household self-reliance.

Public information

42. The Media Sub-Plan of the ACT Emergency Plan should be reviewed to include a greater focus on the provision of community information.

43. Well-defined, well-practised processes should be developed to support the delivery of information to the public. This includes improving the alert mechanisms for residents prior to an emerging danger period.

44. Media communications systems and facilities at ESB headquarters should be improved.

45. There should be greater coordination of the content of whole-of-government media releases and messages.

46. Back-up power should be available for the Canberra Connect call centre.

47. The Community Information Sub-Plan of the ACT Emergency Plan should be reviewed to reflect needs broader than just media arrangements.

48. The role Canberra Connect has demonstrated it can play should be included as a part of a revised Media Sub-Plan of the ACT Emergency Plan.

49. Before each bushfire season familiarisation briefing sessions should be held for the media.

50. ESB should have the capacity to engage an experienced media director to be available in an emergency, to coordinate the provision of information to the media and for general public information purposes.

Evacuate or stay?

51. ACT Policing and the Emergency Services Bureau should develop as a matter of urgency—and before the start of the 2003–04 bushfire season—a joint protocol covering their policy on community safety and evacuation during bushfires, having regard to the framework adopted by the Australasian Fire Authorities Council and the evacuation provisions in the Victorian Country Fire Authority Act. The protocol should be promulgated widely as part of future community education and information programs, and it should be incorporated in the training and operational procedures of both services, so that it is followed consistently during future bushfire events.

Forestry settlements

52. A sub-plan of the ACT Emergency Plan should be developed to assist with the design of special arrangements to cater for the needs of ACT residents who live beyond the city bounds.

A more unified and independent emergency services organisation

53. The separate organisations that make up the emergency services group that is coordinated by the Emergency Services Bureau, and the associated arrangements, should be replaced by a statutory authority, the ACT Emergency Services Authority.

54. The proposed authority should be headed by a Chief Executive Officer.

55. The position of Chief Executive Officer should be advertised and filled on a contract basis before the enactment of the legislation. In this way the person appointed can contribute to formulating the legislation and the transition process can begin without delay.

56. Upon the abolition of the Emergency Services Bureau, a small policy formulation unit should be established in the department that supports the Minister responsible for emergency management.

The Emergency Management Act

57. The ACT's *Emergency Management Act 1999* should be reviewed with the aim of preparing legislation that provides as follows:

- In a declared state of emergency, the ACT Government should have the capacity to appoint as Territory Controller a person who is considered to be best qualified to take this role, having regard to the nature of the emergency or event giving rise to the declaration.

- The Controller shall have the capacity to delegate to a nominated person any or all of the powers that have been assigned under the instrument of appointment as Controller.

- The chair of the Emergency Management Committee shall be appointed by the Minister responsible for the administration of the Emergency Management Act.

- There should be a capacity for different levels of special powers and the capacity for escalation to be invoked to assist in the management of emergencies, having regard to the differing scales or types of emergencies that may arise or the changing nature of an emergency during its course.

The Bushfire Act and other legislation

58. The *Bushfire Act 1936* should be reviewed and redesigned to reflect contemporary needs, and the ACT Bush Fire Council's role should be re-expressed in the Act to more accurately describe its current activity.

Bushfires and land planning

59. A fire-abatement zone should be defined between the north-west and western perimeter of Canberra and the Murrumbidgee River and the foothills of the Brindabella Range.

60. A set of Bushfire Protection Planning Principles in relation to fire mitigation and suppression should be adopted and applied to future developments in the designated abatement zone.

61. The abatement zone should be declared a bushfire-prone area, and the requirements of the Building Code of Australia—in particular, its standards for bushfire-prone areas—should be applied to all future developments in the zone.

8 Concluding remarks

(An attempt to answer an important question and some brief final remarks)

> Damage at present impossible of estimation was caused in the Federal Capital Territory during the weekend by bush fires which raged over a total front of 45 miles along the Murrumbidgee, and crossed it at several points close to Canberra on Saturday afternoon. It was the worst fire in the recollection of district settlers … Although more than 500 volunteers from Canberra, Queanbeyan and Captain's Flat fought desperately against the fires on a dozen fronts on Saturday, they had no hope of checking it against the fierce wind, which carried the flames along gullies and depressions at amazing speed … Burning tinder was carried five and six miles by the wind before being dropped to start fresh outbreaks in the dry grass and trees. Burning leaves from Uriarra fell on Parliament House at 11am on Saturday.
>
> —*Canberra Times* Monday 16 January 1939

Were these fires unique?

A number of comments in the media, and in some submissions to the Inquiry, described the January 2003 bushfires as unique or unprecedented. It is necessary to examine this proposition because a judgment about the authorities' performance in responding to the fires is influenced by knowledge of the nature of the threat they perceived to exist.

Bushfires are a natural part of the Australian environment, particularly in the south-east of the country. They vary in intensity according to climatic conditions (for example, drought, temperature, humidity and wind) and the nature and volume of the available fuel (vegetation essentially). Their rate of spread can also be influenced by topography.

There appears to be some substance behind the proposition that the longer the period since a major bushfire, the more severe a bushfire is likely to be when it does happen. Some have postulated that historical bushfire experience can be viewed in relation to a cycle or to cycles within a cycle. In her useful publication *The Complete Bushfire Safety Book*[1], Joan Webster draws on the work of RH Luke and AG McArthur to describe possible cycles for average to mild bushfires happening every season, serious fires every six or seven years, major fires every 10–11 years, and exceptionally bad ones every 22 years. She notes that the average time between great conflagrations is 44 years and speculates that the apparent rough mathematical relationship with 11 and 22-year cycles

might be related to sunspot activity (which intensifies each 11 years), the El Nino phenomenon and other weather patterns.

When the inexact science of climatology is coupled with the science of bushfire behaviour—which is also a very challenging area to submit to scientific explanation—the prospects for speculative hypotheses are large. Nevertheless, whether the cyclical theory is correct or not, it seems well established (even if solely based on the empirical evidence of past events) that very large bushfires will occur from time to time, when the fuel and weather conditions combine in a particular way.

Chapter 1 includes a history of serious fires in the ACT. Reference to that information confirms that some very serious fires have occurred. Further very serious fires occurred in January 2003. In that sense, the most recent fires were not unique, nor were they a one-in-100-year event. They were part of a pattern of serious fires emanating from the Brindabella Range, crossing the Murrumbidgee River, traversing rural grazing properties and because of relatively recent urban development, moving into suburban Canberra.

An examination of the maps in Appendix E is instructive. They show a pattern of serious fires that have mostly emerged to the west of the site of Canberra in the last four decades. Overall, most of the ACT has been burnt by these significant fires, some parts on several occasions, although it will be noted that the 2003 fires led to a larger footprint than any of the previous major fires in the last 80 years.

Were the fires predictable? In terms of when they would actually occur, probably not. Had the fires not been ignited by lightning strikes on 8 January, the ACT community might now be in the situation it was in immediately before they broke out. The high fuel loads in the hills would have remained and the drought conditions would still have had an impact on dryness, although with the onset of cooler winter weather and some rain the immediate fire danger has diminished substantially. Come the next bushfire season, the volatility of the fuels will depend heavily on the amount of rain the ACT receives between now and then. With little rain and high temperatures, though, the extreme dryness that has characterised the drought could return quickly and bring with it a level of threat similar to that which existed in the bushfire season of 2002–03.

The extreme dryness of the soil and vegetation and the high fuel loads in the hills were known, and their significance was generally understood by the bushfire authorities. When the fires broke out, the weather conditions over

the ensuing week were relatively benign, even though the winds were unseasonably coming from the east for longer than would normally be expected.

The weather conditions on 18 January were predicted to be extreme but not at record levels. As the fires developed and their cumulative effect hit the city, fire weather indices did reach record levels in some areas.

It seems that it was the factors that combined on 18 January—very high temperatures, strong prevailing winds, high fuel loads, extremely low humidity, extreme dryness in the soil as a consequence of the prolonged drought and, possibly most significantly, the major fires merging—created a fire environment of exceedingly high intensity overall. This may have been responsible for creating extreme localised weather conditions, causing very high winds (up to force 2, tornado strength), increasing the speed of advance of the fires and increasing the extent and length of spotting. The 14-kilometre convection column of hot air and smoke that was created is thought to have collapsed, causing further wild turbulence in the fire zone as it approached Canberra.

Scientists are still studying the fire behaviour in order to gain a clearer understanding of its characteristics. While this endeavour may result in a conclusion that aspects of the fires on 18 January in themselves were unique—in that they helped to add to the knowledge of the characteristics of extreme fire behaviour, specifically relating to wind behaviour and the effect of large fires fusing together—it is the view of the Inquiry that it would be misleading to regard the event as a one-in-100-year occurrence, on this basis alone. Although it was probably the most severe fire experienced in the region in the last 100 years, the emergence of large destructive fires in the region, from time to time, is by no means unique.

It would be more accurate to say that the event was unique in the experience of the residents of Canberra and its surrounds, and probably of all the firefighters, because fires of this kind have never before caused such damage to the region. A house had not been lost to bushfire in suburban Canberra since 1952.

The Inquiry's view is that one of the lessons of the fires is the realisation that very serious and potentially destructive fires that may threaten the city could happen again in the future. The Canberra community must not forget this. The fires cannot be simply explained away as an unfortunate, unlucky or 'one-off' event.

Notes

1 Webster, J 2000, *The Complete Bushfire Safety Book*, 3rd edn, Random House, Sydney.

A final word

Some concluding observations are necessary so that readers gain a balanced understanding of what is said earlier in this report.

A fundamental question raised by the Inquiry's examination of the operational response to the January 2003 bushfires is whether, realistically, the fires could have been extinguished at all, before the damage to Canberra occurred. A plausible case can be argued that the effects of the long drought, the build-up of fuel levels in the mountains, the presence of commercial plantations from close to the source of the fires right up to the edge of the city, and the dangerous weather conditions on 17 and 18 January all combined to make it nigh on impossible to contain or extinguish the fires before they reached Canberra, regardless of the effort and resources that might have been applied.

The Inquiry considers, however, that there was a chance to extinguish the fires if the opportunity to put them out in the first 36 to 48 hours after the lightning strikes had been grasped more vigorously. The ACT fire authorities are criticised for not coming to this realisation quickly enough and for failing to immediately attack the fires with all the aggression they could muster. Had this occurred—while the Inquiry is not in a position to conclude unequivocally that it would have made a difference in the absence of the fullest response that was potentially available—the doubt remains that the fires that originated in the ACT could have been stopped. There would be little ground for criticism if, despite no effort being spared during those critical first days, the fires had in fact proved unstoppable. Unfortunately, in the Inquiry's judgment, this was not the case.

Many recommendations are made in this report. If they had all been implemented before the fires, would that have made a difference? The Inquiry considers that, had the improvements it recommends in relation to strengthening the initial attack capability of the Bushfire Service already been implemented when the fires first broke out, things could have been different.

Beyond that point, if the fires proved impossible to suppress or contain, they may still have been difficult to stop before they reached Canberra. The Inquiry is confident, though, that with an improved and strengthened bushfire capacity, as recommended, the ACT will be better able to deal with the range of bushfires that are more likely to be encountered in the future. There will still remain the possibility of the occasional very big fire that will fully test the available resources, but the prospect of minimising damage to the city will be improved if the measures recommended are adopted.

The Inquiry questioned at length the personnel responsible for managing the response to the fires and tried to place itself in their shoes so as to reach fair and objective judgments about the critical decision points during the long campaign on the fires. This disaster has had serious consequences for many people, and for the ACT community generally, and it needs to be analysed closely and critically.

Experience is the basis of most of the progression of human knowledge, and there is much we can learn from our mistakes. It is inevitable therefore that inquiries of this kind concentrate on weaknesses, errors and shortcomings. They do not dwell to the same extent on those aspects where systems and people performed satisfactorily or in the way intended.

The Inquiry considers that the basic structure of the ACT Public Service, which underpinned the whole operation and has responded so well during the recovery phase, is fundamentally very sound. Readers need to recognise this when reflecting on the search for improvement that pervades most of the report.

The recommendations made in this report will considerably strengthen the ACT community's capacity to withstand and recover from serious emergencies including bushfires, in the future. The Government has already made a number of decisions that involve commitment to expend considerable sums of money on improving the operational capability of the emergency service organisations. The Inquiry's recommendations, if adopted, will involve additional expenditure.

Finally, a word about the people involved. The individual government officials, employees and volunteers spared nothing in terms of their personal commitment during a long and difficult crisis, then as soon as the crisis had passed they had to cope with the demands and complexities of the recovery phase. After that, the investigators started to come along, forcing many of them to relive the experience, asking them to try to reconstruct events from their sometimes blurry recollection, and requiring them to respond to a myriad of hypothetical, and possibly at times irritating, propositions. The Inquiry is full of admiration for the way those people it dealt with who occupied positions of responsibility or authority during the fires continued to respond to the changing challenges of an event that is, in different ways, very much still the focus of their attention.

Any criticism directed at individuals because of the role they were required to perform is in no way intended to question their integrity or their honesty in doing what they felt in the circumstances was the right thing to do at the time.

Appendix A The Inquiry's terms of reference

On 20 February 2003 the Chief Minister issued the following terms of reference for the Inquiry into the Operational Response to the January Bushfires:

> The disastrous ACT bushfires of January 2003 caused the deaths of four people and a heavy loss of private and public property. The Government proposes to undertake an Inquiry into the preparation for and operational response to those bushfires by the ACT's emergency services in order to identify improvements that might enhance the capacity to respond effectively to large scale events of that kind.
>
> The Inquiry will examine and report on the adequacy of the response to the bushfires by the ACT Emergency Services Bureau and its components (ACT Bushfire Services, ACT Emergency Services, ACT Fire Brigade and ACT Ambulance Service) and other relevant agencies, including ACT Policing, Environment ACT and ACT Forests with particular reference to:
>
> i) the preparation, planning and response to the bushfires and of strategies for the evaluation and management of bushfire threat and risk;
>
> ii) ESB's management structure, command and control arrangements, and public information strategy;
>
> iii) the coordination and cooperative arrangements with other ACT and interstate, Commonwealth and non-government agencies, including utility providers, for managing such emergencies; and
>
> iv) the adequacy of ESB's equipment, communications' systems, training and resources.
>
> In undertaking its work, the Inquiry Team will consult closely with the Coroner conducting inquests into the deaths caused by the bushfires to avoid any interference with the process of inquiry being directed by her.
>
> The Inquiry is also to advise the Government on the ACT's overall structure for dealing with emergency situations, given the Territory's unique context (geographic, population, financial and administrative), including the operation of the Emergency Management Act. In providing this advice, the Inquiry should make reference to arrangements that exist in other jurisdictions for dealing with emergencies.

The Inquiry Team will report to the Chief Minister by 30 June 2003, in order that relevant recommendations that may result from the Inquiry may be fully implemented prior to the onset of the 2003–04 bushfire season.

The Inquiry's reporting date was subsequently extended to 31 July 2003.

Appendix B Reviews and studies established as a result of the January 2003 bushfires

Judicial inquiries

The ACT Corner's Inquiry (2003 Bushfires)
The ACT Coroner's Inquiry was established to investigate the cause, origin and circumstances of the fires that destroyed and damaged property in January 2003 and to undertake inquests into the deaths associated with those fires.

ACT government studies

The Canberra Plan
The Canberra Plan began in 2002, but is now being adjusted in order to take account of the consequences of the fires. The purpose of the Plan is to provide a sustainable framework for Canberra's economy, people and environment. It has three components—the Canberra Spatial Plan, the Economic White Paper, and the Social Plan. The Canberra Spatial Plan sets out a spatial framework for the future development of Canberra—what goes where, when, how and why—over the next 25–30 years. The Stromlo Option Survey was conducted as part of the development of the Canberra Spatial Plan.

The Urban Edge Review
The Urban Edge review aims to develop recommendations for mitigating bushfire risk and to consider the potential declaration of bushfire-prone areas.

The Study into Non-Urban Bushfire Affected Areas
This is a major study of the non-urban areas of the ACT affected by the bushfires. Important decisions need to be made about the short-, medium- and long-term future of the area. The aim of the study is to provide the Government with recommendations for the best use(s) of non-urban land for the sustainable development of the Territory.

The ACT Forests Business Case
This study aims to provide substantial technical advice on matters associated with the replanting of plantation forests in the Canberra region.

The ACT Five Year Recreation Strategy for the Non-Urban Natural Areas of the ACT
This study aims to provide guidance for the restoration, recovery and redevelopment of recreation facilities destroyed or damaged by the January 2003 bushfires.

The ACT Lowland Woodland Conservation Strategy

The Strategy aims to conserve in perpetuity all types of lowland woodland communities in the ACT as viable, well-represented ecological systems.

The ACT Water Strategy

The Strategy aims to guide the management of ACT's water resources.

Parliamentary and intergovernmental inquiries

The House Select Committee on the Recent Australian Bushfires

The Committee aims to identify measures that can be implemented by governments, industry and the community to minimise the incidence of bushfires and their impact on life, property and the environment.

The Council of Australian Governments

The Prime Minister has written to state and territory leaders seeking their views on, and support for, a national bushfire inquiry to be held under the auspices of COAG.

The Australian Building Codes Board Strategy

The Strategy will review Building Code of Australia by September 2003 in order to ensure that the existing provisions and standards meet community needs, so that any changes that may be necessary can be published before the next bushfire season.

Appendix C Organisations visited or consulted as part of the Inquiry

Government agencies

Commonwealth

Bureau of Meteorology
CSIRO Bushfire Behaviour and Management Group
Emergency Management Australia

New South Wales

Chairman NSW State Emergency Management Committee
NSW Fire Brigade
NSW National Parks and Wildlife Service
NSW Rural Fire Service

Victoria

Country Fire Authority
Department of Sustainability and the Environment
Emergency Service Commissioner

Tasmania

Forestry Tasmania
Parks Tasmania
Tasmania Fire Service

Queensland

Queensland Fire and Rescue Service

Western Australia

Fire and Emergency Services Authority

South Australia

The South Australian government report, *Emergency Services Review*, reviewing governance arrangements for fire and emergency services, was consulted by the Inquiry.

ACT Government

ACT Emergency Management Committee
ACT Police Consultative Board
ACT Bush Fire Council (Chair)

National peak bodies

Australasian Fire Authorities Council

Background briefings

ACT Ambulance Service
ACT Bushfire and Emergency Service
ACT Bushfire Recovery Centre
ACT Bushfire Recovery Taskforce
ACT Fire Brigade
ACT Forests
ACT Occupational Health and Safety Commissioner
ACT Policing
Canberra Connect
Department of Justice and Community Safety
Department of Urban Services
Emergency Services Bureau
Environment ACT

Site visits

ACT pine plantations
Fly-over of overall fire-affected area
Fyshwick fire station
Ignition site of Bendora fire and staging area at Bulls Head
Jerrabombera Bushfire and Emergency Service Brigade
Kambah fire station
Namadgi National Park
Southern Bushfire Brigade
Tour of fire-affected suburbs and areas:

- Chapman
- Duffy
- Kambah
- Rivett
- Weston
- Mount Stromlo

Other organisations and groups

ACT Fire Controller's Group
ACT Sustainable Rural Lands Group
ACT Rural Lessees' Association
ACT Volunteer Brigades Association
Colinton Volunteer Fire Brigade (NSW)
ABC Canberra
Representatives from Pierces Creek settlement
United Firefighters Union

Appendix D Australian Defence Force assistance provided to the ACT for the January 2003 bushfires

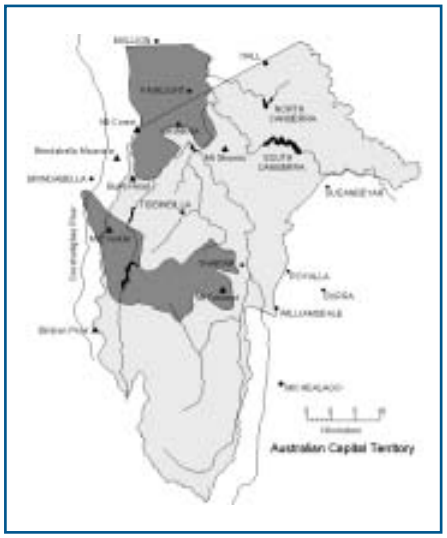
Item	Number requested	Number provided	Duration
Helicopters	4	4	13–28 January
Bulldozers	4	4	13–28 January
Fuel tanker Jet A-1	1	1	14–28 January
Fuel tanker diesel	1	1	19 January – 2 February
Water tankers	7	7	16 January – 2 February
15KVA generators	10	10	19–28 January
Graders	10	5	19–28 January
Accommodation	400 personnel	400 personnel	19–28 January
Chainsaw operators	30	34	19–28 January
Fire tender	1	1	20–28 January
Buses	2	2 x 12 seater	19–28 January
Planning and logistics officers	6	6	19–28 January

Emergency Management Australia, February 2003.

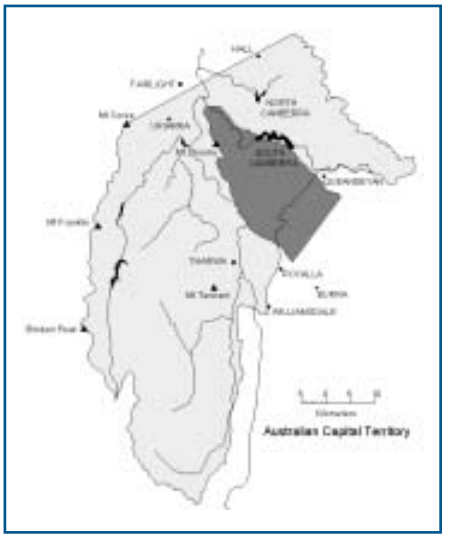
Appendix E Areas burnt in the ACT in the last 80 years[1]

1919-20

1925-26



1938-39



1951-52

1978-79

1982-83

1984-85

2001

Note

1 www.esb.gov.au

Appendix F National emergency service arrangements: an overview

For reference and to place the ACT in context with other jurisdictions, the Inquiry reviewed state and territory emergency service arrangements across Australia. Information was obtained from agency websites and, while efforts were made to confirm accuracy, the Inquiry cannot be held responsible for the correctness of the information provided.

Introduction

The Constitution of Australia states that responsibility for emergency responses lies with each of the states and territories. This includes preparedness for and mitigation of potential emergencies, as well as response and recovery action. The philosophy of emergency management in Australia has been to ensure an immediate response to emergencies. Although this objective is still paramount, greater emphasis is now being placed on preventive action through risk management strategies and community education programs.

The Commonwealth, through Emergency Management Australia, provides assistance to the states and territories to develop their emergency management capabilities. EMA promotes a national approach to emergency management and coordinates Commonwealth physical assistance to states and territories during major disasters. EMA is located within the Commonwealth Attorney-General's Department.

While the administrative arrangements for the management of and response to wildfires and other emergencies differ in each jurisdiction, there is an increased emphasis on inter-agency operational coordination and administrative efficiencies across all emergency service agencies. This has led to the adoption of common professional competencies, the co-location of local emergency services in single facilities, the provision of common administrative support and, in some jurisdictions, common governance arrangements—for example, the Fire and Emergency Services Authority in Western Australia, the Department of Emergency Services in Queensland, the Northern Territory's Police, Fire and Emergency Services, and the ACT Emergency Services Bureau.

Queensland

Queensland has a single Department of Emergency Services that is responsible for emergency services and emergency management. The Department covers all areas concerned with the prevention of, preparation for, response to and recovery from all types of emergencies—the Queensland Fire and Rescue Service, the Queensland Ambulance Service, and the Counter Disaster and Rescue Service.

The Queensland Fire and Rescue Service combines urban and rural firefighters. It employs full-time and part-time (auxiliary) firefighters to staff its more than 240 urban stations. Volunteer firefighters make up the state's 1623 rural fire brigades.

The Counter Disaster and Rescue Service is responsible for Queensland's disaster management arrangements. It is made up of the State Emergency Service, chemical management services and emergency helicopter services. The organisation supports community helicopter providers and manages government support to the Volunteer Marine Rescue Association.

Relevant legislation

Ambulance Service Act 1991
Fire and Rescue Service Act 1990
State Counter Disaster Organisation Act 1975

Western Australia

Emergency management in Western Australia was restructured in 1999. Before then, all emergency service organisations were separate administrative structures with their own responsibilities for emergency response. To effectively rationalise the services, the Bushfire Service, the State Emergency Service and the Urban Fire and Rescue Service were combined under the Fire and Emergency Services Authority of Western Australia.

The Authority is responsible for the response to bush and structural fires, hazardous material incidents, floods, storms, cyclones and road crash rescues. It has 1100 full-time staff and more than 26 000 volunteers. It has a representative board that reports directly to the Minister. A Chief Executive Officer is responsible for the Authority's overall performance.

Three divisions make up the Authority—Emergency Management Services, the Fire and Rescue Service, and the State Emergency Service. The Fire and Rescue Service has 830 career firefighters and 2500 volunteer firefighters, with urban and rural firefighters incorporated in one division. Both arms are responsible for their own operational matters but they are managed under one structure. There are 144 volunteer bushfire brigades in Western Australia.

Relevant legislation

Fire and Emergency Services Authority of Western Australia Act 1998
Fire Brigades Act 1942
Bush Fires Act 1954
Emergency Services Levy Act 2002

Tasmania

Before 1979 fire protection in Tasmania was the responsibility of separate organisations—the Fire Brigade Commission and a multitude of individual fire brigade boards that separately administered the urban and rural brigades. The *Fire Services Act 1979* gives responsibility for fire protection to the Tasmanian Fire Service, under the control of the State Fire Commission.

The State Fire Commission is responsible for and controls the administration of the Tasmanian Fire Service. To this end, it provides advice to the Minister on the administration of the Fire Service Act. The Tasmanian Fire Service is the lead authority for fires, hazardous materials, urban search and rescue, and high-angle and confined-space rescue. Mutual aid is provided on a cooperative basis with other emergency services and specifically to land management agencies (Forestry Tasmania and Parks and Wildlife Tasmania) for wildfire suppression.

The Tasmanian Fire Service has 240 brigades across the state, consisting of four full-time brigades (285 full-time firefighting personnel), in the cities of Hobart, Launceston, Burnie and Devonport, and 236 part-time and volunteer brigades located in urban and rural centres around the State. There are 5000 volunteers. The Chief Executive Officer (or Chief Officer) is responsible for controlling and managing the Service's firefighting resources.

Relevant legislation

Fire Service Act 1979
General Fire Regulations 2000

Fire Service (Miscellaneous) Regulations 1996
Fire Service (Finance) Regulations 1996

The Northern Territory

The Northern Territory police, fire and emergency services were formally merged in 1983. The Commissioner of Police exercises Chief Executive Officer authority over the Northern Territory Police Service, the Northern Territory Fire and Rescue Service, the Northern Territory Emergency Service, and administrative support services. The Commissioner reports to the Minister and has a Director (or Chief Fire Officer) appointed to administer the Fire and Rescue Service. The Northern Territory Bushfire Council is an umbrella organisation that has a planning and coordination role in fire management as its primary purpose, rather than acting as a firefighting service.

The Northern Territory Fire and Rescue Service's primary role is to provide response to and suppression of fires across the Territory. The Service has 141 permanent firefighters, 54 part-time firefighters and 250 volunteers working in Darwin and regional centres.

Relevant legislation

Police Administration Act 2003
Fire and Emergency Act 2001
Disasters Act 2003

The Australian Capital Territory

Emergency services in ACT come under a single administrative umbrella, the Emergency Services Bureau, which is responsible for protecting the community from a range of hazards. The ACT Bushfire Service, the ACT Ambulance Service, ACT Emergency Services and the ACT Fire Brigade are all part of the organisation. ESB is managed by an Executive Director, who reports to the Chief Executive of the Department of Justice and Community Safety. Each operational service has a designated head who is responsible for operations.

ESB headquarters provides administrative support to each of the four operational services, including communications, staff development and training, regional support services and risk management. There are 55 administrative and 78 operational staff.

The ACT Bushfire Service is primarily responsible for the suppression of bushfires. It maintains two departmental brigades from the land management agencies—ACT Forests and ACT Parks—and nine volunteer brigades across the ACT, at Hall, Gungahlin, Molongolo, Rivers, Tidbinbilla, Southern Districts, Guises Creek, Jerrabombera and headquarters. The Hall, Gungahlin, Molonglo, Jerrabomberra, Rivers and Guises Creek brigades are joint Bushfire and Emergency Services brigades. The ACT is a single fire-control district, with all brigades available for any fire. The Service has 20 tankers, 29 light units and nine command vehicles.

The ACT Fire Brigade is a full-time professional urban firefighting body consisting of 290 officers and firefighters located at seven fire stations across the ACT (Belconnen, Ainslie, Fyshwick, Phillip, Chisholm, Greenway, and Charnwood), two Joint Emergency Services complexes in Gungahlin and Kambah, and communications and headquarters at ESB in Curtin.

Relevant legislation

Emergency Management Act 1999
Bushfire Act 1936
Fire Brigade Act 1957
Fire Brigade Administration Act 1974

Victoria

Emergency management in Victoria is the responsibility of a number of different organisations—the Metropolitan Fire Brigade, the Country Fire Authority, the State Emergency Service and the Ambulance Service Victoria.

To ensure that emergency management and services in the state are coordinated, the Office of the Emergency Service Commissioner was established in 2000. The Commissioner provides independent, objective and strategic policy advice to the Minister.

The Country Fire Authority is a community-based fire service providing fire and emergency services to rural and provincial communities, as well as urban Melbourne communities outside the Metropolitan Fire and Emergency Services Board legislative district. The CFA does not have responsibility for publicly owned land managed by the Department of Sustainability and the Environment. The CFA reportedly has 66 000 volunteers and 284 career firefighters, 1218 rural and urban fire brigades, and 800 paid operational and support staff.

The Melbourne Metropolitan Fire Brigade is managed by the Metropolitan Fire and Emergency Services Board. Its primary role is to provide an effective and rapid fire and emergency response to the community. The organisation has 1511 professional firefighters and is supported by a number of technical and administrative staff. Although it is primarily concerned with emergency response, it also takes an active role in educating the community about fire safety and ensuring that the risk of fires to communities is minimised.

Relevant legislation

Country Fire Authority Act 1958
Emergency Management Act 1986
Metropolitan Fire Brigades Act 1958
Victoria State Emergency Service Act 1987

South Australia

Emergency management in South Australia has recently been reviewed, and it has been recommended that the current administrative arrangements be restructured with the forming of a Fire and Rescue Commission, bringing together both urban and rural fire services and incorporating the State Emergency Service. Government has not yet endorsed the recommendations of the South Australian Emergency Services Review.

The current situation in the state is that the Emergency Services Administration Unit, established in 1999, provides administrative support to the emergency service sector. The South Australia Metropolitan Fire Brigade and the Country Fire Service operate as distinct organisations each with their own legislative framework. The State Emergency Service is a division within the Administration Unit and reports to the Chief Executive.

The South Australia Metropolitan Fire Brigade is a corporation and is responsible for protecting life, property and the environment from the effects of fire and other dangers. The Chief Officer administers the Brigade and reports directly to the Minister. The Brigade has 770 career employees and 207 retained (part-time) firefighters. They are situated in 35 fire stations located in Adelaide and regional areas.

The Country Fire Service is a statutory authority reporting through a board to the Minister and is responsible for preventing and suppressing fires and responding to other emergencies in rural South Australia. The Service works closely with

Forestry South Australia and the South Australian National Parks and Wildlife Service, which both form brigades that operate as part of the Country Fire Service. The Chief Executive Officer is responsible for management and administration of the Country Fire Service; the Chief Officer is responsible for operational matters. The organisation comprises approximately 16 500 volunteers and 71 career employees operating from 431 brigades and six regional offices.

Relevant legislation

South Australia Metropolitan Fire Service Act 1936
Country Fires Act 1989

New South Wales

Emergency management in NSW is the province of a number of government organisations—the NSW Rural Fire Service, the NSW Fire Brigade, the State Emergency Service, the Ambulance Service of NSW, and the NSW Police Service. Each organisation has a separate administrative structure and reports directly to the responsible Minister.

The NSW Rural Fire Service is responsible for the prevention and suppression of bush and structural fires within its legislative areas, covering over 90 per cent of the State. It is the designated agency for the management, coordination and suppression of all rural fires and achieves this by working closely with the NSW Fire Brigade, the National Parks and Wildlife Service, and State Forests. The Rural Fire Service is responsible for the coordination of all agencies in a major bushfire.

The Rural Fire Service is administered by the Commissioner, who is responsible to the Minister for Emergency Services. The Service has 2400 brigades throughout the State. Volunteer membership is listed as approximately 70 000 people and there are 482 permanent staff. The Service has divided the State into four regions—North, South, East and West—and 141 districts reflecting local government boundaries. The ACT is located with the NSW Fire District of Yarrowlumla (based in Queanbeyan) which reports to the Southern Region, based in Batemans Bay.

The Service maintains both permanent (full-time) stations and retained (part-time) stations. Community fire units have been introduced in some urban–bushland interface areas, providing limited equipment and training to local residents.

The NSW Fire Brigade prevents and responds to fires and attends to hazardous material incidents, rescues and other emergency incidents within its legislative area, which comprises the Greater Sydney area and regional centres. It has 3090 full-time and 3198 part-time firefighters at 337 stations across the State. Together with the NSW Rural Fire Service, the Brigade provides significant integrated support to communities in the urban–rural interface.

Relevant legislation

Rural Fire Act 1997
Rural Fires and Environmental Legislation amendment Bill 2002
Rural Fires Regulation 2002
Fire Brigades Act 1989

Appendix G Previous ACT inquiries and reviews

Elements of the ACT's emergency services, particularly the urban fire service, have been the subject of various inquiries and reviews in recent years. Among the resultant reports have been the 1986 Attwood report, the 1988 Purdue report, the 1991 Hannan report, the 1992 Purdon report, the 1993 McDonald report, the 1994 McBeth report, and the 1995 Glenn report.

The Attwood report

The Committee of Enquiry into the ACT Fire Brigade was established in 1986 following a long period of serious industrial disputation centred on actions of the then Federal Firefighter's Union concerning the appointment of a non-ACT Fire Brigade member, Mr Bill Kerr, as Fire Commissioner in 1984. The Attwood Committee comprised:

- Mr N Attwood AO, a member of the Commonwealth's Administrative Appeals Tribunal and a former Deputy Secretary of the Department of Defence
- Mr R Knowles of the Federal Firefighter's Union
- Mr R Orchard, a former Chief Officer of the Country Fire Authority of Victoria.

The Committee was assisted by a Review of Organisational Needs for the ACT Fire Brigade, conducted by Jack Cohen and Associates, which focused on the Brigade's senior structure. The Committee reported in August 1986.

The Attwood report was scathing in its criticisms. It concluded that the Brigade suffered from a legacy of neglect and deficient management as a result of being established as a separate organisation without the management and support structure to operate independently. The Brigade's problems were compounded by:

- failure to develop a proper definition and assignment of responsibilities
- inadequate training and staff development activities that might have improved its management capacity
- limited use of new technology
- generally poor relationships with other ACT emergency services
- failure to substantiate funding needs and to use available funds effectively
- failure to develop effective union–management consultative processes.

Among the 97 recommendations were calls to:

- establish an ACT Fire Brigade Board
- develop a forward plan for major capital works, vehicles and equipment, partly with a view to improving the condition of fire stations, expanding and improving the fleet, equipment and appliances, and upgrading maintenance activities
- introduce an improved management structure
- provide industrial relations expertise, improved consultative arrangements and better personnel-management practices
- engage a consultant to review training and staff development
- develop communications and computer systems
- improve relations with other emergency services and recognise that the Fire Brigade has a legitimate role in road rescue work and hazardous materials incidents
- update the boundary defining the built-up area (related to Rural Fire Service responsibilities).

Many of the recommendations were put into effect, although there is no record of the degree of implementation. The Fire Brigade Board was abolished by ministerial decision in 1988.

The Purdue report

The need for improved management training in the ACT Fire Brigade was emphasised in the Attwood report. The then Fire Commissioner commissioned a review by WA Purdue and Associates, who produced a substantial report in December 1988. The report presented a comprehensive model for management development, which was taken into account in developing a subsequent approach to training. The Federal Firefighter's Union declined to participate in the review because of differences between it and the Fire Commissioner.

The Hannan report

The Hannan Group conducted a review of the effectiveness of fire and emergency service organisations in 1991, as part of the change program in the Department of Urban Services. The terms of reference for the review did not encompass police and ambulance services. The report, presented in October 1991, emphasised that constraints on the effectiveness of the organisations related to:

- their structure—with three services, there were a variety of administrative and reporting lines and different policies in relation to service delivery
- boundaries—with responsibility for incident management varying according to the location of the incident. Control over the suppression effort would pass from one service to another during an incident but there was no clear definition of boundaries
- duplication of resources—including communication centres, administration, maintenance and repair practices, personnel administration, training and equipment—and lack of regional facilities
- varying standards among the services in relation to readiness, training, response times, discipline, uniforms and equipment
- attitude
- urban planning that concentrated on aesthetics, functionality and lifestyle, without fully taking account of preventive fire-control measures.

The Hannan report recommended that the ACT Fire Brigade, the ACT Rural Fire Service and ACT Emergency Services be merged into a new service—ACT Fire and Emergency Services—to be led by a Chief Executive with a non-statutory board and a compressed management structure.

The report was only mildly received, especially the recommendation for the merger of the urban and rural fire and emergency services. The Chief Fire Control Officer (ACT Rural Fire Service) considered a partial merger but with the operational integrity and identity being maintained. He also favoured the Bush Fire Council becoming a non-statutory liaison forum to facilitate coordination and cooperation in fire management activities. The ACT Volunteer Bushfire Brigades Association generally supported amalgamation. Emergency Services volunteers rejected the recommendation for full amalgamation but saw some scope in a partial merger, provided it was restricted to a rearrangement of the permanent staff.

The then Fire Commissioner was in favour of full amalgamation within a two-year facilitating period. He recommended the immediate amalgamation of a number of administrative and support functions—including all training functions, personnel, and vehicle service and maintenance; the co-location of all administrative staff; the introduction of a single piece of legislation; and the establishment, in the longer term, of a broad-based Fire and Emergency Services Advisory Board.

The Chief Police Officer considered that the Hannan report was narrowly focused in relation to the handling of emergencies in the ACT. The emphasis of the report was on fire emergencies, and there was concern about the recommendation to include ACT Emergency Services in the combined organisation, given its support for the police service in its rescue role. The police considered that ACT Emergency Services should maintain its independence within the Department of Urban Services, that specific legislation supporting ACT Emergency Services should be drafted, and that the Chief Police Officer should retain the position of Territory Controller.

The Purdon report

Government recognised the divergence of views on the issue and the need for broad community input before a decision could be made. The Purdon consultative process in 1992 found that among the people directly affected there was confusion about the impact of the Hannan recommendations. It also found that, while there were significant cultural differences between the services, there was much common ground between them in terms of the possibility of improved cost efficiencies in administration. There was also a divergence in the official views of the organisations directly affected by the Hannan recommendation for a full merger, even though all services acknowledged the need to rationalise a range of administrative and support services.

The Government considered the Hannan and Purdon reports and on 23 September 1992 the Minister for Urban Services advised relevant staff of the Government's decision not to proceed with the proposed full merger. Instead, the Government had decided that the services would be combined within one administrative organisation but with each of the services retaining its individual operational identity and statutory responsibilities. For example, the Bush Fire Council was retained, as were the arrangements relating to land management responsibilities in ACT Parks and Conservation and ACT Forests. There was general, although not unanimous, support for this sort of approach during the

consultative process. The Government considered that this kind of administrative link was necessary in the light of the cost of the present arrangements and the effect of the administrative and cultural differences between the services on coordination and operational efficiency.

A new position of Director to head ACT Fire and Emergency Services was created. Mr Glen Gaskill was seconded to the position for 12 months to implement the new structure and prepare a three-year plan for the new entity, which dealt with the present arrangements in more detail against an appropriate budget projection. With the Government's endorsement in August 1993 of the 'Three Year Plan', the group was renamed the Emergency Management Group, with a General Manager.

The MacDonald report

On 15 June 1993 the then ACT Minister for Urban Services announced that, as a result of a legislative motion, Mr Bruce MacDonald AM would undertake a review of emergency services in the Territory. The review was to examine aspects of the ACT's emergency services to determine the most appropriate structure for the provision of services, including whether services should be co-located or otherwise rationalised, and the most appropriate means of training and maintaining the training levels of emergency service workers.

It was also to consider and report on arrangements to improve emergency management in the ACT, in particular:

- the development of a Three Year Plan for fire and emergency services
- the creation of an ACT Emergency Management Committee
- a review of ACT hazards
- preparation of emergency management legislation
- revision of the ACT Counter Disaster Plan
- the potential for further improving arrangements between emergency response units in ACT Fire and Emergency Services, ACT Police and the ACT Ambulance Service
- long-term requirements for the delivery of emergency services in the ACT.

The report made a total of 35 recommendations, the main ones being:

- further implementation of the Three Year Plan
- possible extension of the administrative umbrella to include ACT Police and the ACT Ambulance Service
- retention of the ACT Fire Brigade, the ACT Rural Fire Service and the Bush Fire Council under the same administrative umbrella
- development of an appropriate legislative package
- finalisation of the review of training and development
- a communications expert to be commissioned to assess future requirements across the emergency services
- improvement of the physical working conditions and equipment of emergency service and ambulance personnel
- development of a comprehensive community awareness program.

The McBeth report

In May 1994 Mr Howard McBeth was commissioned to review the bushfire hazard–reduction practices of ACT government land management agencies, with particular emphasis on the role and functions of the ACT Parks and Conservation Service. Controversy surrounded the resultant report, provided in September 1994, since it was considered that Mr McBeth did not comply with the review's terms of reference. It was claimed that too much emphasis was given to the structural arrangements for fire suppression in the ACT, rather than focusing on the stated requirement to review current fuel-reduction practices. The Opposition of the day made a commitment to review the McBeth report if elected to government.

The report is a very prescient read following this year's fires. Anyone interested in judging whether an event like the January bushfires could ever have been anticipated should seek out this report. A copy is held in the ACT Legislative Assembly library.

The Glenn report

Following an election in 1995 the Liberal Government formed the Bushfire Taskforce, chaired by Mr Graham Glenn AO, to review the ACT's bushfire fuel management practices and recommend policies and procedures for the future. The Taskforce was to take into account the McBeth report's findings.

The Taskforce's report was completed in August 1995. Among the main recommendations in relation to government land management agencies were the following:

- the ACT Bushfire Service to carry out broad-scale hazard assessment with land management agencies and to carry out finer scale assessment in consultation with the Chief Fire Control Officer
- land management agencies to give priority to hazard reduction and bushfire safety for residents in high-risk areas
- amendments to the *Bushfire Act 1936*, to include a requirement for land managers to prepare bushfire fuel management plans. Guidelines were provided on the content of the plans
- a Bushfire Fuel Management Committee to be established to approve the plans developed by land managers
- recommendations relating to smoke management for prescribed-burning procedures and practices.

The report identified the key elements of fuel management to be hazard assessment, land use planning, land management, environment and conservation and hazard reduction. The urban interface with rural and bushland area was nominated as a matter of particular concern. The Taskforce also noted the impact of the *Air Pollution Act 1994* on fuel management practices and the resulting decline in the amount of fuel reduction burning.

The Taskforce's recommendations in relation to fuel management on government-managed land resulted in amendments to the Bushfire Act; they came into force in 1996.

AUSTRALASIAN FIRE AUTHORITIES COUNCIL

POSITION PAPER ON COMMUNITY SAFETY AND EVACUATION DURING BUSHFIRES

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Aim

This position paper has been developed by the Australasian Fire Authorities Council (AFAC) to provide guidance on bushfire safety and evacuation decision making by fire agencies and for the use by other associated emergency services and support agencies.

Preamble

Bushfires regularly threaten communities throughout Australia with the risk of death or injury to residents, and destruction or damage of their property, environmental values, and other community assets. The responsibility for reducing the loss of life and property lies jointly with State agencies, local government, the communities and individuals.

Bushfire losses can be reduced by preventing fire, limiting its spread, making preparations to protect life and property, and responding effectively during and after fire. Fire authorities are not able to guarantee the presence of a fire fighting vehicle and crew to protect every residence at risk during major or multiple bushfires, although they will endeavour to provide sufficient firefighting resources to support people defending themselves.

Houses protect people and people protect houses. Research conducted following major bushfires in Australia has concluded that the most buildings lost in bushfire situations are the result of initially small fires started by sparks and embers. A building will generally survive the initial passage of a fire front providing adequate preparations have been made. People who are well prepared and take shelter in their homes have an excellent chance of surviving a bushfire. Also, houses will survive if people remain to extinguish small fires started in and around them.

Fire authorities no longer advocate large-scale evacuation of people from areas threatened by bushfires. In modern times it has been the practice in Australia and in other places for people to be evacuated from sources of danger such as bushfires. Simply not being there and exposed to a hazard eliminates the risk. With some natural hazards such as floods and cyclones there can be sufficient warning time to enable people to safely leave the area. However bushfires often occur without warning and move rapidly. Research into Australian bushfire fatalities shows that last minute evacuations from bushfires contributed to the majority of deaths. Late evacuation is inherently dangerous and can cause greater risks than remaining in the fire area.

Communities at risk from bushfires should be allowed and encouraged to take responsibility for their own safety. Where adequate fire protection measures have been implemented, able-bodied people should be encouraged to stay. Where there is an adequate warning time people such as: the very young, the old, the infirm, those who feel they would not cope with the trauma of fire, and those who have not taken sufficient measures to protect their homes should leave. Evacuation does not necessarily need to involve long distance disruptive and logistically difficult movement. Where safe havens exist close by, they should be used in preference to moving well away from the affected area. The decision to stay or leave during a bushfire must be made following careful consideration of all the factors bearing upon the situation and the information available at the time.

Adequate Fire Protection Measures

Defendable space

The single most important fire protection measure influencing the safety of people and their property is the creation of a 'defendable space' around houses and other buildings. Defendable space is an area surrounding a building that is free of, (or significantly reduced) continuous combustible vegetation or other fuels. Having a defendable space essentially provides a firebreak that limits the ability of a moving fire to spread directly to a building. It provides a relatively safe area from which an advancing fire can be controlled and within which firefighters and residents can control spark and ember caused fires on and around a building.

Householder planning

Residents in or near areas that may be threatened by bushfires should be encouraged to make plans in relation to how they will manage their safety a when bushfire occurs. Some of their considerations should be:

- Mental and physical preparation
- Arrangements for the early departure of vulnerable people
- Alternative water supplies
- Basic firefighting equipment
- Suitable clothing
- Means of receiving information – battery powered radio

Evacuation Considerations

Self-evacuation

Self evacuation is the self-initiated movement of people from the at risk area to a place of safe refuge, either in advance of a bushfire or in anticipation such as on a day of forecast extreme fire danger. The risks associated with relocating increase dramatically as a fire front gets nearer.

It is highly recommended that all people who are not physically or mentally prepared to undertake firefighting activities should move to a safe area well ahead of a fire's arrival. This group of people usually includes the very young, older people who may no longer be physically agile and sick or immobile people. People who believe they are not capable of enduring the trauma associated with a bushfire situation or people who just do not, for whatever reason, want to be there, should relocate to a safe place well before a fire is expected. Those people who have not adequately prepared should also leave and relocate early.

Required Evacuation

Required or directed evacuation of people by an emergency service may be needed because of the imminent threat to those people. People who have not undertaken adequate preparations and who choose not to leave may put their life or other lives at risk by remaining. Where a person's life is immediately at risk by them remaining in a particular location they may be advised to evacuate. Should that advice be ignored, evacuation may be enforced. This is subject to individual State legislation which varies around Australia (see below – Authority to Evacuate).

Access and Egress

Whilst every encouragement should be given for people to leave early or return home to defend their property, safety in transit must be a high priority. The risks involved in moving through a bushfire zone can be very high. Many deaths have been caused by people being trapped on unsafe roads. Safe access is a major issue for both people leaving and for those returning home before the fire arrives, as well as after it has moved through. Police generally have responsibility for road closures and road safety. Guidelines need to be developed jointly by police and fire authorities to provide safe access and

egress to residents, emergency services and the media. Such guidelines should consider

- Roads being closed when they become unsafe (either through smoke, falling trees and powerlines, etc) and will remain closed until they return to a safe condition.

- Police should close roads when requested by the fire authority to facilitate safe fire fighting operations.

- Whilst roads are closed, access should only be allowed for emergency service vehicles. Residents/media seeking access may only be allowed access where an appropriate escort can be provided e.g. fire or police vehicle. This action will depend upon the priorities of the emergency services at the time.

- The attendance of residents at their homes is a legitimate fire protection strategy; therefore roads should be reopened for residents as soon as practicable and safe to do so.

Authority to Evacuate

AFAC believes that a framework is needed throughout Australia that allows and encourages members of the community to take responsibility for their own safety and that of their property. AFAC also believes the decision to evacuate people should be made by the lead fire combat authority. Where legislation exists that enables forced evacuation a protocol should be developed between the relevant authorities to allow people having a pecuniary interest in property involved to only be forcibly removed during a bushfire when they are in imminent danger of death or serious injury. The time involved in dealing with resisting residents can seriously hamper the process of warning and evacuating other members of the community.

Any framework should allow fire agencies, as the lead combat authority to implement strategies for community safety from bushfires, which includes avoiding ad hoc evacuation of people. It should allow residents to choose options that suit them (such as sheltering in their own homes, moving to a neighbour's house or relocating to a nearby refuge).

Information and Warnings

During the course of a bushfire it is essential that all people in threatened communities have ready access to accurate information to assist them in their decision-making.

The fire authority should be responsible for providing advice for residents who are likely to be threatened by a bushfire. Fire authorities have access to the necessary information and the expertise to determine the level of bushfire threat.

It is essential that the Fire or Incident Controller provides timely advice and consults closely with Police or Emergency Co-ordinator and with other support agencies.

Planning for Fire Emergencies

AFAC advocates that emergency management agencies and local government, in consultation with the community, should actively seek the development and implementation of local fire emergency plans and strategies for all those areas with a high bushfire threat. Such local fire emergency plans should include the following considerations:

- Identification of areas of low and high fire hazard;
- Identification of vulnerable people;
- Identification of safe refuges, and low risk and high risk access roads;
- Community awareness and preparedness programs (e.g. Community Fireguard);
- Arrangements for effective public warning systems and communications and;
- Arrangements for training exercises to test plans.

The local fire emergency plans should include strategies that encourage

homeowners, landholders and managers to prepare their properties before the start of the bushfire season.

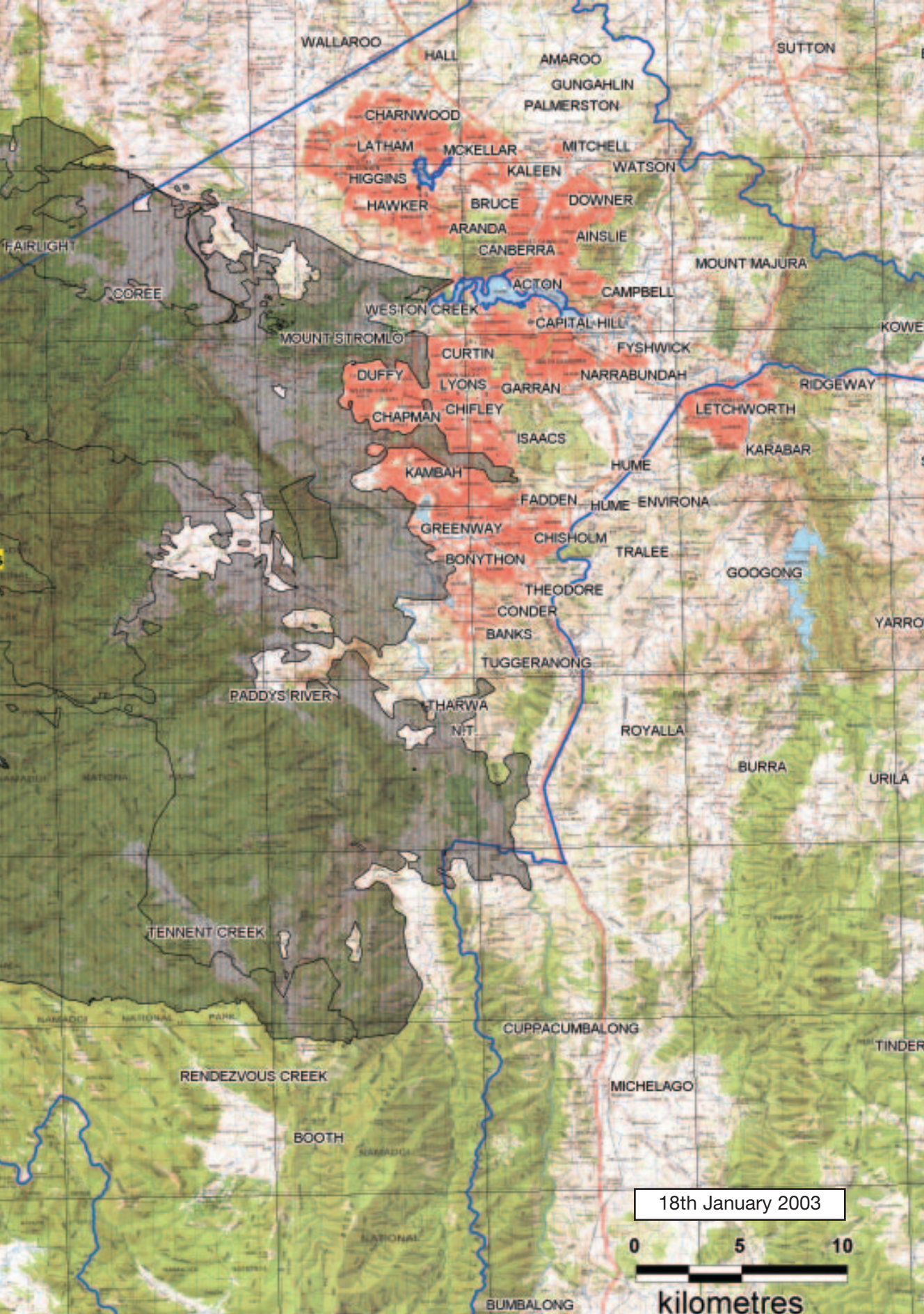
Local Emergency Response Plans

The local fire emergency response plans should promote the natural desire of most people to protect their own property and to make their own decisions during emergencies. The focus of these local arrangements should be to:

- Provide adequate information that allows residents to understand the risks and consequences of staying or evacuating from their homes in the event of bushfires;
- Help those who wish to leave;
- Encourage people to make an early decision to leave or to stay to avoid last minute, panic-stricken attempts to flee from bushfire;
- Develop and implement strategies to manage people fleeing at the last minute;
- Provide suitable support and welfare services during all phases of relocation;
- Develop and foster an effective and reliable information flow between the emergency authorities and people in the community;
- Develop and implement strategies that support the safe return of able-bodied residents to their homes as soon as possible after the main fire has passed.

Data supplied by various Stakeholders under ANZLIC* Guidelines.
The information contained herein has been provided in good faith.
Particular effort has been made to ensure accuracy and completeness.

The Stakeholders take no responsibility for errors or omissions nor any loss or damage that may result from the use of the information.
*Australia New Zealand Land Information Council.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BRUCE
DOWNER
ARANDA
AINSLIE
FAIRLIGHT
CANBERRA
MOUNT MAJURA
ACTON
CAMPBELL
COREE
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