

# Chapter 5 - Resources for bushfire management

## Introduction

5.1 The issue of resources for bushfire management has already been addressed to some extent during this report, mainly in the context of how effectively available resources are utilised to prevent, mitigate and suppress bushfires. In Chapter 3 from paragraph 3.141 the committee also discussed the problem of conducting prescribed burns with limited personnel within the short windows of opportunity allowed by suitable weather conditions, as well as incomplete scientific research and information about the effectiveness of prescribed burning from paragraph 3.36. In Chapter 4 the committee referred the importance of local fire fighters being adequately equipped to provide an early attack response from paragraph 4.24.

5.2 This chapter will further examine issues concerning the limitations of the resources available to agencies responsible for bushfire management in Australia, and how they can be better resourced to carry out their roles. Specifically, the final section of the committee's report will examine the following:

- Whether the allocation of resources between bushfire mitigation and suppression activities has been well prioritised.
- The availability of skilled personnel and volunteers to perform important bushfire management responsibilities.
- Improving the information and knowledge available to agencies responsible for bushfire management.
- Ensuring the equipment, access, infrastructure and technology needed for bushfire suppression and emergency management is adequate.

## Resource priorities

5.3 Evidence to the committee indicated a general concern about the prioritisation of expenditure on fire suppression capabilities, particularly for expensive fire fighting equipment, over more cost effective mitigation strategies. There was a widely held view that this is a disturbing trend that increases the burden of expenditure without actually addressing the factors contributing to catastrophic bushfire events.

5.4 Officers from the WA Department of Environment and Conservation (DEC) commented on the economic benefits of mitigation:

...investment in prevention and preparedness is a lot cheaper than relying only on suppression and acting after the event.<sup>1</sup>

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1 DEC, *Committee Hansard*, Perth, 29 April 2010, p. 14

5.5 National Association of Forest Industries (NAFI) described 'a shift in emphasis from fire prevention to fire suppression' as one of the current inadequacies of public land management.<sup>2</sup> Victorian Lands Alliance suggested that expenditure was out of proportion:

The focus of expenditure on fire suppression over fire prevention is delivering poor financial and environmental outcomes for Victoria. As best we can tell, the funding for suppression is 10 times greater than for prevention in Victoria, but the problem is not a failure of suppression but a failure of effective prevention. Resourcing of equipment and technology for suppression has never been greater, but the American approach has failed to protect Victoria.

Victoria's fires have cost the taxpayer \$1.8 billion in suppression and recovery in the last seven years, and this is a matter of public record. The budget for fuel reduction burning is \$52.7 million over the next five years. I repeat: \$1.8 billion is what the Victorian taxpayer is being asked to foot in less than 10 years. University studies have shown that for every dollar spent on prevention, \$22 can be avoided in suppression costs.<sup>3</sup>

5.6 Mr John Gledhill, former chief officer of Tasmania Fire Service, noted:

We are spending more and more money on technological solutions, but in my opinion technology is not the total answer; it is part of it ... there are a whole range of different components to managing fire, from community education to fuel reduction. There are a whole range of components. The actual firefighting is probably the least effective of all the tools, and yet we put great expectations on it being the answer.<sup>4</sup>

5.7 The Bushfire Front Inc also referred to 'a failure by authorities to focus on bushfire prevention, preparedness and damage mitigation, as well as on suppression'.<sup>5</sup> Noting that high intensity fires caused by hot windy conditions and high fuel loads make suppression 'impossible', they added:

...to prevent really serious damage it is necessary to put in place a system that minimises the risk of a small number of large, high intensity fires. Any other system will only cope with the large number of relatively mild fires that are easily suppressed and do little damage.<sup>6</sup>

5.8 NAFI advocated an approach based on mitigation measures:

...preventative land management through fuel reduction, vegetation thinning and related activities such as maintenance of access trails and firebreaks can

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2 NAFI, *Submission 13*, p. 1

3 Victorian Lands Alliance, *Committee Hansard*, Melbourne, 25 March 2010, p. 40

4 Mr John Gledhill, *Committee Hansard*, Melbourne, 25 March 2010, p. 2

5 The Bushfire Front Inc, *Submission 48*, p. 1

6 The Bushfire Front Inc, *Submission 48*, p. 1

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have a beneficial impact in reducing the likelihood and severity of natural fires.<sup>7</sup>

5.9 Forest Fire Victoria Inc suggested that the Productivity Commission undertake a study of 'the true cost of wildfires in Australia'.<sup>8</sup>

5.10 There was also some concern raised about the cost of aerial fire fighting equipment and its perceived prioritisation over on-ground equipment. For example, the Volunteer Fire Fighters Association of New South Wales suggested resources may be more effectively utilised for prevention activities:

The current budgetary allowance for bushfire mitigation in New South Wales at the present time—through the state Fire Mitigation Works Fund, the state government allocated \$3 million for the mitigation of hazards on bushfire-prone lands and the maintenance of fire trails. That is \$3 million. If you look at the state budget allocated for aviation fire suppression, you will see we are looking at \$70 million. There is quite a disproportionate gap there. Are we now moving from a prevention mentality to a suppression mentality?<sup>9</sup>

5.11 This issue is discussed in further detail later from paragraph 5.88.

### ***Committee view***

5.12 The committee holds the view that the problem of ever more intense bushfires in Australia will not be addressed by ever greater expenditure on the latest fire suppression equipment. Catastrophic bushfires that have been further intensified by heavy fuel loads in the landscape have little respect for great sums of money devoted to the latest fire fighting technology. In the battle of an intense blaze against the most expensive technology, fire will inevitably win. The economic heavy lifting needs to occur before the task of suppression begins, to ensure the equipment available to fire fighters can be effective and can offer some value for money.

5.13 In Chapter 3 the committee recommended that public land management agencies be held accountable for their bushfire hazard reduction planning and implementation. If implemented this would provide a greater incentive for those agencies to direct resources towards that important mitigation activity.

5.14 The committee is also of the view that the Commonwealth needs to ensure that any funding assistance it provides for bushfire suppression is not being rendered ineffective by land management agencies' inadequate fire preparedness. The committee therefore recommends that further Commonwealth funding for bushfire

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7 NAFI, *Committee Hansard*, Melbourne, 25 March 2010, p. 23

8 Forest Fire Victoria Inc, *Committee Hansard*, Melbourne, 25 March 2010, p. 61

9 Volunteer Fire Fighters Association of New South Wales, *Committee Hansard*, Canberra, 12 March 2010, p. 54

suppression be made conditional on state fire agencies agreeing to the Commonwealth evaluating and auditing their fuel reduction programs.

## **Recommendation 9**

**5.15 Further Commonwealth funding for bushfire suppression be made conditional on state fire agencies agreeing to the Commonwealth evaluating and auditing their fuel reduction programs.**

### **Personnel**

5.16 Bushfire management depends critically on the availability of qualified staff to perform bushfire management tasks and a great many volunteers to perform fire fighting and other bushfire management roles. The inquiry elicited a number of responses indicating concern about both these categories of essential personnel.

#### *Qualified expertise*

5.17 Evidence to the committee suggested that land managers with bushfire expertise are declining due to changes in land tenure and deficiencies in training arrangements.

5.18 On land tenure shifts, Australian Forest Growers noted that:

The areas of commercial management in public forests has rapidly decreased in recent years, such that in most states there is a far smaller proportion of production forests than there are parks, reserves and other areas.<sup>10</sup>

5.19 National Association of Forest Industries (NAFI) also suggested that state government tenure provided the most resourcing difficulties:

I do not think it is such an issue for our commercial forests because we have a commercial imperative to protect our resource. In the situation where you have state governments, I think there is evidence around that there has been a decline.<sup>11</sup>

5.20 Professor Peter Kanowski commented that increased state responsibilities for land management have not been matched with additional funds:

I think it is the case that the resources that state agencies have to commit to land management activities have decreased in most states. It has been a consequence of the increasing business orientation of forestry management agencies and the expansion of the national park estate without a concomitant expansion of their resourcing. I think there are underlying issues there that are potentially problematic. That is not to say that the people in those agencies do not do a good job with the resources they have

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10 Australian Forest Growers, *Committee Hansard*, Melbourne, 25 March 2010, p. 82

11 NAFI, *Committee Hansard*, Melbourne, 25 March 2010, p. 28

got, but I think, if you look at our relative resource commitment compared to three or four decades ago, we are underinvesting in natural resource management rather than investing adequately.<sup>12</sup>

5.21 Victorian Association of Forest Industries (VAFI) argued against further reducing native forestry in Victoria on the basis that forestry operators provide better protection from catastrophic wildfire.<sup>13</sup> They provided the following example:

...three areas of greatest risk of wildfire right now are the areas of the Otways, the Dandenongs and far East Gippsland. Far East Gippsland of course encapsulates Bendock, Orbost and Cann River. If you remove the industry from Orbost, Cann River and Bendock right now, there will be no ability to fight a fire and it will spread right throughout.<sup>14</sup>

5.22 Training arrangements were also a matter of concern. Professor Kanowski told the committee that the 'numbers of undergraduate students choosing to study forestry has declined substantially over the last decade'. He estimated that only 30-35 students would graduate with a university forestry qualification this year, short of the 50-100 per year required.<sup>15</sup>

5.23 Forest Fire Inc complained that forestry research and study had declined markedly since the closure of the CSIRO Division of Forestry and Forest Products, and the amalgamation of ANU and Melbourne University's forestry programs into broader faculties.<sup>16</sup>

5.24 The Bushfire Front Inc was critical of the lack of practical experience offered through formal training courses:

...the formal education probably only provides the scientific background; learning the ropes on the job is the most critical thing. Because there has been a decline in professional agencies that are involved in bushfire management in terms of their numbers and their staff, the young people coming in are not getting the mentoring that they used to get from the old hands that was so important.<sup>17</sup>

5.25 Australian Forest Growers also advocated the benefits of forestry students getting practical experience:

...it does not matter how well educated you are, you still have to get out there and learn what fires do in the real world and have people involved in seeing and understanding fire behaviour. Learning in a more controlled

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12 Professor Peter Kanowski, *Committee Hansard*, Canberra, 12 March 2010, p. 37

13 VAFI, *Committee Hansard*, Melbourne, 25 March 2010, pp 50-57

14 VAFI, *Committee Hansard*, Melbourne, 25 March 2010, p. 57

15 Professor Peter Kanowski, *Committee Hansard*, Canberra, 12 March 2010, p. 38

16 Forest Fire Victoria Inc, *Committee Hansard*, Melbourne, 25 March 2010, p. 68

17 The Bushfire Front Inc, *Committee Hansard*, Perth, 29 April 2010, p. 21

environment under prescribed burning conditions is much more preferable than learning on the run when there is a fire coming over the hill at you.<sup>18</sup>

5.26 Their submission claimed a decline in practical experience amongst land managers:

In the past, most state forestry land was managed by foresters with fire experience and training. More recently, these people have been replaced by graduates in various forms of environmental sciences with much shallower knowledge of fire behaviour. There is no better school of bushfire management than that of active fire control. AFG considers it essential that all public service fire managers be qualified by considerable practical experience before attaining a fire management position.<sup>19</sup>

5.27 VAFI noted that forestry workers provide a useful knowledge and skill resource working in conjunction with other agencies:

DSE have a memorandum of understanding with VicForests, and contractors for VicForests and also VicForests staff are available to respond to a fire and can be coordinated within a very short time frame to be in position and ready to assist. I think the other benefit apart from providing human resources—where people actually have local knowledge of those forest areas and the access tracks there—is that DSE staff often participate in the high-intensity regeneration burns that VicForests undertake and, in doing so, DSE fire officers gain experience with higher intensity fires.<sup>20</sup>

5.28 They also noted:

The equipment is an important point as well, because the native forest act provides for in-location equipment—bulldozers, tankers and so forth—that are actually suitable for forest terrain and have, for instance, safety equipment to prevent trees falling on them. The government could certainly procure equipment for firefighting from, say, earthmoving businesses or elsewhere, but it certainly would not be available within the same time frame and would not be as suitable for working in those forests. Furthermore, when you are talking about the forest industry, it is not just about having the equipment but also about having operators of that equipment who have the skills and the knowledge to use it effectively. That is particularly important in first response to fires.<sup>21</sup>

5.29 The Western Australia Department of Environment and Conservation offered a different perspective:

...we still have a substantial workforce of both front-line firefighters and incident control personnel, both centrally and throughout the south-west

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18 Australian Forest Growers, *Committee Hansard*, Melbourne, 25 March 2010, pp 88-89

19 Australian Forest Growers, *Submission 16*, p. 3

20 VAFI, *Committee Hansard*, Melbourne, 25 March 2010, p. 55

21 VAFI, *Committee Hansard*, Melbourne, 25 March 2010, p. 56

and, to a lesser extent, the rest of the state. There are challenges in staff attraction and retention these days. There are fewer people coming through in the forestry profession, but I would argue at least in part that the forestry profession is not the only one that brings this sort of capacity. I would like to believe that it is the fact that our people are based in land management that is the important factor, rather than that they have a particular training qualification before they come into that function.<sup>22</sup>

5.30 Victorian Lands Alliance gave evidence about the important training prescribed burns provide:

Most people in Victoria who are on a volunteer basis would have come up through the CFA ranks. Most of those people would have cut their eye teeth on burning on roadsides as part of hazard reduction for local towns. That is used jointly as a training exercise. That is vastly reduced now because of the protocols that are put on hazard reduction burning on roadsides because of native vegetation laws and conservation laws. Many local brigades simply will not go through the paperwork that is required for traffic management and meeting the protocols of the department. They do not undertake that sort of burning so those people do not learn to burn from a young age.<sup>23</sup>

5.31 The Bushfire Front Inc proposed the establishment of 'a national-level bushfire management training facility, which bushfire people from all over Australia can attend, and achieve national-level accreditation'.<sup>24</sup>

### ***Volunteers***

5.32 Volunteers are an integral part of bushfire management and were the subject of considerable discussion during this inquiry. In particular, contributors were concerned that in future sufficient numbers of volunteers would not be available to perform essential tasks.

5.33 Australian Forest Growers expressed concern about the availability of volunteers with increased mechanisation in rural industries:

The nature of volunteer fire fighters has changed. In the past, fire fighters were farmers, logging contractors and forestry workers with years of fire experience and accustomed to hard work. As more native forest areas have been withdrawn from forestry management, and as farms have become bigger and more mechanised requiring less labour, the pool of physically fit, healthy and experienced fire fighters has diminished.<sup>25</sup>

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22 DEC, *Committee Hansard*, Perth, 29 April 2010, p. 6

23 Victorian Lands Alliance, *Committee Hansard*, Melbourne, 25 March 2010, p. 47

24 The Bushfire Front Inc, *Submission 48*, p. 5

25 Australian Forest Growers, *Submission 16*, p. 4

5.34 WA Farmers' Federation (WAFF) told the committee that declining rural populations have an effect on local capability:

...we have fewer and fewer people on the ground. As we get bigger and bigger farms, that is how we have beaten the terms of trade: everybody just buys another farm. So you halve the population, you halve the number of farms, so you have half the number of vehicles at a fire—but you are still burning the same area of country.<sup>26</sup>

5.35 The Western Australian Fire and Emergency Services Authority (FESA) stated:

...a number of factors are impacting on volunteerism that are specific to regional Western Australia. This includes:

- declining rural populations;
- many of those people moving from the city to live "in retirement" in rural areas do not volunteer as it's not part of their new lifestyle;
- ageing volunteer workforce;
- fly in - fly out arrangements for many people; and
- younger generations less interested in volunteering.<sup>27</sup>

5.36 The Queensland Department of Community Safety informed the committee of research examining volunteers leaving fire agencies:

Research suggests that Australian volunteer-based fire agencies lose between 6.7% and 8.3% of their total volunteer firefighter memberships annually. Reasons for leaving volunteering include work and family needs, moving away from the area, dissatisfaction with their role as volunteers in the organisation, dissatisfaction with the organisation and age and/or health issues.

Volunteers have also cited concerns about the possible negative impacts of climate change on the frequency and severity of large fires which would inevitably require greater demands on volunteers' time and the current economic uncertainty.<sup>28</sup>

5.37 The department indicated that they had introduced a number of measures to mitigate the reasons why people may cease volunteering:

The complex legal and administrative requirements for volunteers (for example police records checks, insurance, financial accountability, workplace health and safety) create additional financial impost for government. In Queensland, the impact of these requirements on volunteers has been minimised through:

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26 WAFF, *Committee Hansard*, Perth, 29 April 2010, p. 53

27 FESA, *Submission 39*, p. 15

28 Queensland Department of Community Safety, *Submission 12*, p. 9



- comprehensive QFRS motor vehicle insurance policy covering privately-owned vehicles and machinery made available to brigades;
- Queensland Government Insurance Fund protection for volunteers, indemnifying them against liability while they are engaged in authorised activities;
- grant indemnities and legal assistance in relation to civil proceedings, inquiries and investigations; and
- workers' compensation in the event of injury sustained during authorised activities.<sup>29</sup>

5.38 However:

Volunteer shortfalls can be attributed to a range of other factors including a decline in rural and remote populations, an increase in transient populations, and a shortage of people to undertake paid work in regional and remote centres.<sup>30</sup>

5.39 The NSW Rural Fire Service Association indicated that volunteers are becoming disillusioned with bureaucratic control from those with no fire fighting experience, as well as being required to suppress fires in national parks without having any input into land management practices there.<sup>31</sup>

5.40 The WA Farmers' Federation suggested that universal levy payments were affecting attitudes to volunteering:

In the last 10 years, with the advent of ESL—the Emergency Services Levy in Western Australia, which now funds quite a lot of the bushfire fighting and the FESA—I think we are detecting a slight change in the attitude of landowners in that, whereas before volunteering was their only input and they were happy to do it, some people are now saying, 'We pay an ESL now, so it's up to FESA and those sorts of people to look after us,' which is in my view quite short-sighted.<sup>32</sup>

5.41 Mr Robert Webb told the committee that attracting bushfire-ready volunteers to the Rural Fire Service is difficult in areas within three hours' drive of Sydney, because of the increasing number of absentee owners purchasing land in those regions. He indicated that while absentee owners may join the service, they will often not have adequate training or be present on their property when fires occur.<sup>33</sup>

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29 Queensland Department of Community Safety, *Submission 12*, p. 11

30 Queensland Department of Community Safety, *Submission 12*, p. 11

31 NSW Rural Fire Service Association, *Submission 26*, pp 5-6

32 WAFF, *Committee Hansard*, Perth, 29 April 2010, p. 44

33 Mr Robert Webb, *Submission 57*, pp 2-3

5.42 The committee also considered incentives to assist with the recruitment and retention of volunteers. FESA advocated a previous proposal to offer volunteers a tax rebate:

At the March and October 2005 meetings of the Ministerial Council for Police & Emergency Services Management (MCPPEM), the WA Minister for Police and Emergency Services submitted a research paper by PKF Chartered Accountants that assessed a number of tax options to provide tangible recognition and support for Australia's emergency service volunteers. The preferred option was a national tax rebate for emergency service volunteers was developed following national consultation and gained broad support from all jurisdictions.

The tax rebate option was considered the better option as:

- It is available to all eligible volunteers regardless of their tax profile unlike the tax deduction option.
- It is a readily apparent benefit.
- The initial and ongoing administrative work required of volunteers and the emergency services agencies is minimal compared to the other options.
- Legislation is easier to implement, as there is already a template in existence.
- The Australian Taxation Office compliance activities would not be as great as the other options.

Volunteers who satisfied the eligibility criteria would be entitled to a capped tax rebate of \$300, generally offset against tax payable, but refundable regardless, so those volunteers who are unemployed or under the tax-free threshold would not be disadvantaged.<sup>34</sup>

5.43 Mr Robert Webb proposed that governments employ private fire fighting and hazard reduction services to address poor hazard reduction practices and declining volunteer fire fighting numbers.<sup>35</sup> The Rural Fire Service Association of NSW told the committee that casual employees were being utilised to assist with controlled burns, through a state mitigation support services initiative:

Casual employees of the service are engaged to prepare fire lines so that brigades may undertake the burning activity without the impost of preparing the fire lines as well.<sup>36</sup>

5.44 The notion of paying volunteers directly for fire fighting services was not generally supported in evidence to the committee. The Volunteer Fire Fighters Association of New South Wales advocated additional incentives to support

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34 FESA, *Submission 39*, p. 17

35 Mr Robert Webb, *Submission 57*, p. 6

36 Rural Fire Service Association of NSW, *Committee Hansard*, Canberra, 12 March 2010, p. 82

volunteers who devote time to fighting fires, without providing direct payment, which could 'compromise the ethos of volunteerism in Australia'.<sup>37</sup>

5.45 The Rural Fire Service Association of NSW commented:

The feedback I have got in my short time involved with the volunteer firefighters is that if you want to kill off the volunteer culture and you want to get rid of the volunteers, the quickest way to do it is to make them take pay for the work they do.<sup>38</sup>

5.46 Victorian Farmers Federation (VFF) told the committee that volunteer fire fighters 'do not do it for any financial recompense', saying:

...We do it for altruistic reasons and for security reasons in terms of our own property. In fact I think it would become a bureaucratic nightmare to work out who had done what and how much.<sup>39</sup>

5.47 VFF's Mr Gerald Leach told of the ethos of volunteers in his farming community:

...it is amazing how quickly 30 or 40 neighbours can arrive on the scene. Some are not even known to have been there but they come, they put the fire out and then they get back to doing what they want to do. ... I have not come across a volunteer firefighter who has even indicated that they would be interested in [being paid].<sup>40</sup>

5.48 The Association of Volunteer Bushfire Brigades of Western Australia also stated that their volunteers did not support being paid for their services.<sup>41</sup>

5.49 The committee notes that in September 2009 the Ministerial Council for Police and Emergency Management endorsed the 'National Action Plan for the Attraction, Support and Retention of Emergency Management Volunteers'. The plan proposed eleven 'national actions' to this end, which include as higher priorities:

- improving subsidisation of training, activities and equipment for volunteers;
- improving leadership training emergency management volunteers;
- developing alternative learning approaches to ease time pressures for emergency management volunteers;

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37 Volunteer Fire Fighters Association of New South Wales, *Committee Hansard*, Canberra, 12 March 2010, p. 46

38 Rural Fire Service Association of NSW, *Committee Hansard*, Canberra, 12 March 2010, p. 89

39 VFF, *Committee Hansard*, Melbourne, 25 March 2010, p. 102

40 VFF, *Committee Hansard*, Melbourne, 25 March 2010, p. 102

41 Association of Volunteer Bushfire Brigades of Western Australia, *Committee Hansard*, Perth, 29 April 2010, p. 42

- develop a national volunteer employer recognition scheme to recognise and reward employer support for volunteers;
- increasing community awareness about the role and value of emergency management volunteers;
- improving youth participation in the sector; and
- addressing insurance and legal protection issues that inhibit the attraction and retention of volunteers.<sup>42</sup>

### ***Committee view***

5.50 The committee is very concerned about Australia's future capacity to perform necessary bushfire management tasks. Implementing adequate prescribed burning programs across fire prone landscapes will be very difficult to achieve in the future unless a declining skills base and volunteer numbers is addressed. We need to maintain depth of knowledge and practical experience of fire behaviour to ensure adequate prescribed burning will be possible, particularly on the public lands that now constitute an increased proportion of the landscape.

5.51 The increase in national park space from areas previously devoted to commercial forestry necessitates a greater investment by governments in land management capacity. It is not appropriate for state governments to remove an industry that actively managed bushfire risks on the land under their control and not employ the skilled personnel required to continue to manage bushfire risks on those lands.

5.52 However, state land management agencies need a sufficient pool of qualified people with practical bushfire training to meet this obligation, which is an area in which the Commonwealth may legitimately be involved. The committee therefore recommends that the Commonwealth assist the states with bushfire training for land managers and volunteers by co-ordinating curriculum development and delivery of a national bushfire accreditation course, to be delivered by the relevant state agencies. Such an arrangement would offer extensive qualifications tailored for full-time employees of land management and fire agencies, as well as minimal, flexible and subsidised options for volunteers. Courses would have a strong practical component, provided with the co-operation of state land management and fire agencies and their experienced personnel.

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42 Volunteer Action Plan Reference Group, National Action Plan for the Attraction, Support and Retention of Emergency Management Volunteers, September 2009, pp 3-5, accessed on 2 June 2010 at <http://www.ema.gov.au/www/emaweb/emaweb.nsf/Page/RWPA527034D5EF15BCBCA2576AC001BC557>

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## Recommendation 10

**5.53 The Commonwealth assist the states with bushfire training for land managers and volunteers by co-ordinating curriculum development and delivery of a national bushfire accreditation course, to be delivered by the relevant state agencies.**

## Recommendation 11

**5.54 The Commonwealth organise the co-operation of state land management and fire agencies to provide the practical training aspect of the curriculum as part of a national bushfire accreditation course.**

5.55 The committee recognises that changing demographics in rural areas of Australia pose a significant challenge to the attraction and retention of fire service volunteers and welcomes the efforts being made through COAG to ensure volunteer participation is maximised. However, those in charge of the organisations for whom bushfire volunteers give their time need to take primary responsibility for ensuring their continuing attraction and retention. Volunteers do not make their contribution for financial reward, but it is inevitable that volunteer fire fighters will be more inclined to cease their involvement if they feel their contribution is not valued by the organisations they assist. A major aspect of this is the disillusionment many volunteers feel about the lack of decision-making authority they as locals may exercise during bushfires, particularly when attempting to apply local knowledge in responding to changing conditions. It is the responsibility of bushfire agencies to address these legitimate concerns within their ranks by reviewing incident control management systems, as the committee suggested in the previous chapter at paragraph 4.37.

## Information

5.56 The committee also examined the resources devoted to bushfire research, the effectiveness of this research, and the way information gleaned from research is provided to those that need it. The Bushfire Co-operative Research Centre (CRC) commented that research at a national level is needed, even though the effects of bushfire are generally local:

...in a country where so much of the landscape burns every year, bushfire is still too often regarded as a local issue. From a community fire management perspective that may make sense, but to gain a deeper understanding of the bushfire threat we must continue to co-ordinate and support the best national and international scientific minds and cultivate a new generation dedicated to this issue.<sup>43</sup>

5.57 Central to bushfire research in Australia, the Bushfire CRC was established in 2003 with a strong focus on bushfire-related social research, particularly 'community

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43 Bushfire CRC, *Submission 7*, p. 11

safety as a key component of bushfire management'.<sup>44</sup> Their submission noted the work the CRC had done since its establishment:

New decision support tools have been implemented in areas such as smoke management, aerial suppression, prescribed burning, community engagement, fire weather forecasting, volunteerism and fire-fighter health and safety. ...

In tandem with researchers, fire and land management agencies have gained a significantly improved insight into the way people face the bushfire threat. Central to this research is the need for a better understanding of what drives human behaviour before, during and after a bushfire. And industry now looks to the Bushfire CRC for advice on better materials for building houses, fencing, water tanks and other structures.<sup>45</sup>

5.58 The Bushfire CRC's research priorities have been largely determined by fire and land management agencies, with some evidence provided to the committee criticising these current arrangements.<sup>46</sup> Forest Fire Victoria Inc claimed that research is currently 'dominated, funded and controlled by the fire agencies'.<sup>47</sup> As a consequence, it is 'inefficient and ineffective':

So what do we do about it? I think the Commonwealth has a huge role to play here. The important thing about research is that you must have a lot of it in different places and different styles. I think the US model is really very good. The US Forest Service is a major research organisation. The various states have their own research people, and the university system is a lot more healthy than it is here. I am adjunct senior research fellow in geography and environmental science at Monash and I have had several PhD students studying this fire area. And, boy, I know how difficult it is to get even modest funding to do any particular work. The university research system is really on its knees; Australia is going backwards.<sup>48</sup>

5.59 The Bushfire Front Inc also expressed their dissatisfaction:

We are not satisfied with the way the CRC is operated, nor are we satisfied with the way a lot of fire research is done in academic institutions around Australia. We want to see a situation where research is taken out of the universities, decentralised back to the states and placed in the hands of practical scientists who are trying to improve the standard of bushfire management, as opposed to a lot of the research that is being done, which seems to us to hinder good management and work against it.<sup>49</sup>

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44 Bushfire CRC, *Submission 7*, p. 4

45 Bushfire CRC, *Submission 7*, p. 4

46 Bushfire CRC, *Submission 7*, p. 13

47 Forest Fire Victoria Inc, *Committee Hansard*, Melbourne, 25 March 2010, p. 68

48 Forest Fire Victoria Inc, *Committee Hansard*, Melbourne, 25 March 2010, p. 68

49 The Bushfire Front Inc, *Committee Hansard*, Perth, 29 April 2010, p. 19

5.60 They added that fire authorities having influence over the CRC meant an emphasis on suppression rather than land management:

Generally the principal interest of the fire authorities around Australia is in fighting fires after they start, not in land management. The biggest change that needs to be made to the CRC is to redress that balance so that the agencies and the people who are experienced in and know about land management have a more telling input into the research priorities of the CRC than do the people who are just interested in fighting fires after they start.<sup>50</sup>

5.61 FESA in WA supported the work of the CRC and the need for continued funding.<sup>51</sup> However, officers from FESA said:

...from a Western Australian point of view, we would like to see some of the research being not so ... east coast-centric. We are very unique over here in WA and we would like to see some more localised research occurring. We believe that broadening it into the streams that have been discussed at agency level for some time is definitely the way to go.<sup>52</sup>

5.62 The Australian Institute of Architects commented that research on the contribution of design and location to the destruction, damage or survival of built assets did not seem well co-ordinated or easily accessible to the architecture industry.<sup>53</sup>

5.63 Evidence to the committee included suggestions for further bushfire research projects. The Queensland Department of Community Safety emphasised the importance of further research spatial fuel monitoring:

Continuing research and operational efforts are required to achieve successful fire management, particularly in relation to spatial fuel monitoring processes that will allow fire agencies to establish the areas of highest fire risk as well as the effectiveness of fire mitigation and vegetation recovery.<sup>54</sup>

5.64 The Bushfire Front Inc indicated that research on historic burning practices be prioritised:

Senators should seek to ensure the Federal Government continues to provide leadership and funds for bushfire research, and for the transfer of research into operations. From the standpoint of addressing the concerns of people opposed to prescribed burning, a critical research issue is to clarify pre-settlement fire frequency through studies of grass trees and modelling

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50 The Bushfire Front Inc, *Committee Hansard*, Perth, 29 April 2010, p. 20

51 FESA, *Committee Hansard*, Perth, 29 April 2010, pp 74-75

52 FESA, *Committee Hansard*, Perth, 29 April 2010, p. 74

53 Australian Institute of Architects, *Submission 30*, p. 5

54 Queensland Department of Community Safety, *Submission 12*, p. 6

natural fire occurrence and development in the absence of suppression. The most critical operational issue is the development of high quality fire behaviour guides for all forest types.<sup>55</sup>

5.65 The committee notes a recommendation from the COAG inquiry, which called for the Commonwealth and states to contribute additional funding for gathering fire regime information.<sup>56</sup>

5.66 CSIRO informed the committee that better risk information for homeowners is required:

Some fires will inevitably threaten homes, so an improved house loss risk index is needed to better inform communities of the potential for a fire under given fire weather conditions to cause life and property loss.<sup>57</sup>

5.67 Mr Gary Morgan, CEO of the Bushfire CRC, commented that further knowledge is indeed required:

The leaders of the fire agencies and land management and emergency service agencies tell us that the knowledge that they have now and the methods of today will not sustain them into the future, given the predicted environmental and demographic changes we are expected to see over the next decade. They want new knowledge, and they seek it from directed but independently conducted research.<sup>58</sup>

5.68 Funding for the Bushfire CRC was due to expire in 2010, until given a brief reprieve following the Victorian bushfires in February 2009:

The Bushfire CRC is now being funded by the federal government until 2013 to provide short-term research into the current issues arising from the Victorian bushfires royal commission.

...

The Bushfire CRC is currently engaged in favourable discussions with politicians and bureaucrats on possible models for future national approaches to bushfire related research; however, the main obstacle remains federal funding. Hopefully, for our communities and our firefighters, our discussions can be concluded positively and soon.<sup>59</sup>

5.69 Over the next three years Bushfire CRC's research will focus on the following areas:

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55 The Bushfire Front Inc, *Submission 48*, p. 4

56 Ellis, S. et al, *COAG National Inquiry on Bushfire Mitigation and Management*, March 2004, pp 66-67

57 CSIRO, *Submission 15*, p. v

58 Bushfire CRC, *Committee Hansard*, Melbourne, 25 March 2010, p. 11

59 Bushfire CRC, *Committee Hansard*, Melbourne, 25 March 2010, p. 11



- Understanding risk: includes seeking a better understanding of the community's expectations about balancing the protection of life and other values, risk assessment and decision-making, and fuels and risk planning at the interface.
- Communicating risk: includes considering effective communication with affected communities, and human behaviour under stress.
- Managing the threat: includes research on incident co-ordination, the effects of fire in the landscape, and improving human resource management.<sup>60</sup>

5.70 The Bushfire CRC informed the committee that it was also undertaking a project to comprehensively identify conflicts in legislation that inhibit effective bushfire management. Mr Gary Morgan of the Bushfire CRC said:

...there are clearly conflicts in different legislation, and that inhibits some of the best outcomes, particularly for planning as against suppression and prevention type actions.<sup>61</sup>

5.71 He also referred to the effect conflicting legislation had on those operating on the ground:

If it starts at the top when we have laws that are in conflict, the whole thing falls down. The poor people on the ground do not know which way to go, and it depends on who is yelling the loudest at the time. That is not good policy and it does not mean we have good implementation. We will always have trouble if that continues. I think that is where the Commonwealth can take strong leadership.<sup>62</sup>

5.72 The committee heard that the CRC was trying to identify where legislative problems exist:

We recognise this as being a fairly critical part of how we manage safety into the future. It is an area where we will be undertaking research in the coming three years, looking at all the conflicts in the various layers of government, from federal government to state government to local government, but also, importantly, across the portfolio areas, whether it is in land management, public safety, emergency response or wherever. There is legislation that conflicts across all of those layers of government and portfolio understandings. Trying to get an understanding of which piece of legislation has authority over which other piece of legislation is actually quite difficult. It is a fairly major piece of work we intend to do over the next three years to try and get a better handle on how that might be managed better.<sup>63</sup>

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60 Bushfire CRC, *Bushfire CRC Extension Research – Update to Senate Committee*, document tabled at the committee's public hearing in Melbourne on 25 March 2010, see Appendix 3

61 Bushfire CRC, *Committee Hansard*, Melbourne, 25 March 2010, p. 16

62 Bushfire CRC, *Committee Hansard*, Melbourne, 25 March 2010, p. 19

63 Bushfire CRC, *Committee Hansard*, Melbourne, 25 March 2010, pp 14-15

5.73 However, beyond the three year extension of Bushfire CRC funding, there is uncertainty over the future of bushfire research in Australia. The Bushfire CRC stated that:

It is imperative that the nation commit to an on-going fire and land management agency-led research capability that is able to meet its future needs.<sup>64</sup>

5.74 The Australian Fire and Emergency Services Council (AFAC) has proposed the establishment of a new co-operative research centre to meet longer term research objectives, the 'CRC Fire – Environment and Society'.<sup>65</sup>

### ***Committee view***

5.75 Effective bushfire management practices depend on a strong and well co-ordinated research basis, with information from that research being shared with those responsible for implementing bushfire management measures. There is currently some debate about whether the current CRC model is the most appropriate structure for bushfire research, and the committee understands the frustrations of those who would prefer to see a decentralised model clear of fire agency control. However, the poor revenue opportunities arising from bushfire research makes a centralised co-operative research model, driven by the end users of this research, more cost effective than decentralised research activities. As long as the research priorities are not disproportionately skewed to certain aspects of bushfire management over others, then this model should be favoured.

5.76 The committee strongly holds the view that more research is required to assist land management agencies and the Commonwealth make well informed decisions about effective fuel reduction practices, including developing technology and analytical techniques to enable a more accurate assessment of fuel risks and fuel reduction effectiveness across the landscape. The committee supports the COAG inquiry's recommendation on the need for better information on fuel loads and fire behaviour, which was incorporated in recommendation 5.1 of the inquiry:

The Inquiry recommends the provision of additional resources jointly by the Australian Government and the state and territory governments for the following purposes:

- to accelerate the research necessary for the characterisation of fuel loads and dynamics for Australian ecosystems (both natural and exotic), the characterisation of fire behaviour and ecological responses, the development of 'burning guides' from this information, and the compilation of this information and knowledge in nationally accessible databases

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64 Bushfire CRC, *Submission 7*, p. 12

65 Bushfire CRC, *Submission 7*, p. 9

- the establishment of a national network of long-term ecological research sites to provide a basis for long-term monitoring of the impacts of fire regimes and fire events.<sup>66</sup>

5.77 The committee also suggests that further research be undertaken to facilitate a comprehensive analysis of individual house risk from catastrophic bushfire, which would encourage communities to better prepare for bushfires at the asset level.

### **Recommendation 12**

**5.78 The Commonwealth encourages further research into prescribed burning and its effectiveness and into alternative bushfire mitigation approaches through improved bushfire risk understanding at the asset level.**

5.79 The committee supports the Commonwealth funding a single national bushfire research institute over the long term to co-ordinate and provide the information required by land management and fire agencies across Australia, as well as communities in fire prone areas. In particular, research into fuel hazard reduction and household fire risk should be prioritised, reflecting the areas of knowledge that most urgently need to be improved. The committee therefore recommends that at the conclusion of the Bushfire CRC funding agreement, a new national bushfire research institute be permanently established to meet the nation's future research needs, funded jointly between the Commonwealth and agency end users.

### **Recommendation 13**

**5.80 At the conclusion of the current Bushfire CRC funding agreement the Commonwealth establish a new permanent bushfire research institute.**

5.81 The committee recognises that prescribed burning must not only be effective in reducing the effects of catastrophic bushfire, but that an effective prescribed burning strategy must be economically justifiable. Therefore, the committee recommends that the Productivity Commission be tasked to assess the economic effects of recent major bushfires on the Australian economy to determine the cost effectiveness of prescribed burning as a mitigation strategy.

### **Recommendation 14**

**5.82 The Productivity Commission be tasked to assess the economic effects of recent major bushfires on the Australian economy to determine the cost effectiveness of prescribed burning as a mitigation strategy.**

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66 Ellis, S. et al, *COAG National Inquiry on Bushfire Mitigation and Management*, March 2004, p. 66

## **Fire suppression infrastructure**

5.83 In addition to the personnel resources necessary to combat destructive bushfires, the committee also considered various infrastructure requirements. These included:

- fire fighting equipment and access;
- mapping (or spatial data infrastructure); and
- fire warning systems.

### ***Fire fighting equipment and access***

5.84 Evidence to the committee regarding fire fighting equipment and access raised concerns about the declining equipment resources provided by the forestry sector, fire trail access and the prioritisation of aircraft suppression.

5.85 Australian Forest Growers suggested that the withdrawal of native forest areas had reduced the availability of useful fire fighting equipment:

There has ... been a loss of suitable equipment such as heavy bulldozers and skilled operators for rapid construction of fire-lines, reinforcement of existing firebreaks and creation of back burning lines.<sup>67</sup>

5.86 Victorian Lands Alliance also suggested that the shift of land from forestry to the national park estate has reduced the equipment and access necessary for effective suppression:

The correlation of a decline in the area of forest available to timber harvesting to the current 9 percent of the available forest and the decline in track access and maintenance is hard to ignore, [as] is the undeniable consequence of less timber industry funding of roads and tracks that is not subsequently replaced by government funding.

The decline in the availability of heavy machinery in the bush, near fire ignition points, is overlooked by many. However, it is this type of machinery and the skilled bush operators who are experienced in working a heavy dozer down a spur that can mean the difference between early containment or a major conflagration.

The ability to access fire on a track network capable of carrying fire tankers, the ability to have machinery that can quickly form fire breaks or cut new access tracks can be crucial and whilst not the sole domain of the timber industry, the decline in the machinery and personnel available on the spot or at short notice has affected fire suppression.<sup>68</sup>

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67 Australian Forest Growers, *Submission 16*, p. 4

68 Victorian Lands Alliance, *Submission 34*, p. 11

5.87 Mr Robert Webb argued that changes to the type of equipment available to local brigades had diminished volunteers' capacity to 'undertake critical rapid response and direct attack'. He explained that previous arrangements were effective by allowing early suppression by landowners near the point of ignition:

Throughout the 1980's and 90's many local brigades were outfitted by the NSW RFS with tanker trailers and slip on units. They were extremely useful in that they were at all times positioned on land owner's properties and were spread across the district. The machines were maintained by the property owner with some funds provided by the RFS and may have been used for other purposes outside the bushfire period. When a fire was smelt, reported or sighted, the telephone "phone tree" plans were activated, UHF communications were utilized and farmers would hook on to their full tanker trailer with approximately 600 litres of water in it.

In the 20 years that the brigade provided these tanker trailers I recall attending at least 15 fires (mainly lightning strikes) where the tanker trailer and its rapid response capabilities enabled the operator/s to suppress the fire in its infancy. The brigade trucks and larger equipment were always generally 20 minutes to half an hour behind. Once they arrived they were mainly used to mop up and black out. Many of these fires were unreported and therefore unrecorded as an incident by the RFS. This was because the local farmers would put the fire out and go home to carry on with their farming activities. I recall at least three fires on days that I would estimate back then to have had an FDI well above 50. If it were not for these smaller units these fires would have most definitely turned into long, protracted, costly campaigns.<sup>69</sup>

5.88 However, Mr Webb informed the committee that in NSW resources had been shifted away from smaller units to larger tankers to the detriment of an early strike capability:

Unquestionably the resources now afforded our local RFS brigades in terms of new modern appliances are second to none. The concern I have is that the equipment provided is too large and cumbersome to provide effective rapid response in this area. These expensive resources sit in brigade sheds for nine to ten months of the year, completely under utilized. In addition it worries me that the skill and license required to operate this heavy machinery is lacking within our brigade and other brigades. It concerns me that there are many brigade areas where these vehicles may remain in the shed in a bushfire situation as there may be no one qualified or willing to operate the vehicle.<sup>70</sup>

5.89 VFF told the committee that its members had complained that fire trails had not been properly maintained by state land management agencies. Their submission noted:

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69 Mr Robert Webb, *Submission 57*, p. 4

70 Mr Robert Webb, *Submission 57*, p. 5

Adequate access into crown land is essential in being able to safely direct fire crews into fires at their commencement in an effort to extinguish blazes at the earliest possible opportunity. While the use of aerial fire fighting has greatly enhanced fire suppression capability, on the ground crews are needed to ensure blazes are extinguished.

Construction and maintenance of access tracks at regular intervals and of appropriate standards are necessary across all areas of crown land. The spacing of tracks should be based on the level of inherent fire risk to private property.<sup>71</sup>

5.90 The committee notes that the Commonwealth has contributed funding to the construction and maintenance of fire trails through the Bushfire Mitigation Program.<sup>72</sup>

5.91 As flagged above at paragraph 5.10, there were concerns raised about the cost-effectiveness of aerial fire fighting and the value in prioritising funding for this capability. The Commonwealth's contribution to aerial fire fighting is outlined in chapter 1 at paragraph 1.98.

5.92 The Volunteer Fire Fighters Association of New South Wales suggested that a cost-benefit analysis be conducted on the use of aircraft for fire suppression:

It is on the public record in the RFS annual report that the budget for aviation has substantially escalated to a point where one could reasonably argue that there are other sections of the rural fire service operational wing that may be missing out on valuable resources. I would be advocating that there be an examination federally of the use of aircraft in bushfires across the Australian landscape to determine their best application and to ensure that there are economies of scale and that the public are getting the best value for their taxpayer dollar.<sup>73</sup>

5.93 Australian Forest Growers commented that:

There has been a recent trend to use very expensive equipment (such as large water tanker helicopters). While it is recognised that aerial attack of fires has been a beneficial change over the last 15 years it is essential for cost benefit analyses to be applied to equipment purchases. Results of such analyses may reveal a need for more on-ground equipment and less expensive aerial bombers (fixed wing or smaller helicopters) being deployed.<sup>74</sup>

5.94 They recommended:

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71 VFF, *Submission 28*, pp 10-11

72 Attorney-General's Department, *Submission 38*, p. 3. This program has been incorporated into the Natural Disaster Resilience Program.

73 Volunteer Fire Fighters Association of New South Wales, *Committee Hansard*, Canberra, 12 March 2010, pp 53-54

74 Australian Forest Growers, *Submission 16*, p. 6

AFG recommends that greater deployment of resources be made to on-ground attack, and that well controlled aerial water bombing capability be restricted to early intervention at source and to protection of built assets such as houses.

AFG recommends that further expenditure on aerial water bombing are only made based on the results of a careful review of the costs and effectiveness of that tactic when used in established bushfires remote from built up areas.<sup>75</sup>

5.95 CSIRO stated that aircraft need to be deployed early:

Aircraft have three main advantages over ground suppression resources: speed, access, and observation... When ground travel response times are significant or safe access is difficult, aircraft have the ability to reach the fire early in its development and to initiate suppression. In such situations aircraft can be used to hold or slow fire spread to restrict the growth of the active fire perimeter until ground suppression forces arrive. However, once a forest fire has become fully developed, aircraft become less effective at restricting the spread of the fire, primarily due to the increased speed of the fire and the time taken for the aircraft to refill and return to the fire (i.e. turn around time)...<sup>76</sup>

5.96 CSIRO's submission also recognised that aerial suppression will not be effective without ground crews to mop up:

Aircraft cannot extinguish a bushfire without the support of ground crews... While an aircraft can drop water, retardant or chemically-enhanced water (using additives such as surfactants or water enhancing gels), these can only reduce the fire behaviour temporarily; unless directly attacked by supporting ground crews during this period, the fire will eventually burn through, around or over the drop, particularly if the fire is spotting heavily. Aircraft cannot mop-up burning and smouldering fuels which are a primary source of re-ignition...<sup>77</sup>

5.97 McDermott Aviation P/L agreed that initial air attack capability is critical:

Protection of assets during periods of extreme fire risk can only be achieved if wild fire ignitions are attacked quickly and with maximum available resources. Even where pre-fire mitigation actions such as fuel reduction burning have been carried out, weather conditions on days of extreme fire danger will assist a small fire to build rapidly to an uncontrollable state. Work done by the Australian Bushfire CRC and researchers in other countries clearly shows that the initial attack is critical to controlling and

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75 Australian Forest Growers, *Submission 16*, p. 6

76 CSIRO, *Submission 15*, p. 12

77 CSIRO, *Submission 15*, p. 13

extinguishing a wildfire and that use of aircraft in this initial attack phase significantly increases the chances of successful result.<sup>78</sup>

5.98 The submission added:

Aircraft are a relatively expensive resource available to fire managers and we believe there is often a reluctance to use aircraft in the first instance in an attempt to save money. This is a false economy.<sup>79</sup>

5.99 Other suggestions for improving funding for fire fighting equipment were forthcoming. AFAC suggested that the system of pooling aerial fire fighting resources be extended:

AFAC has begun the process of investigating expanding the National Aerial Firefighting Centre (NAFC) model for sharing aircraft to all hazards and a variety of resources.

NAFC was formed by the Australian States and Territories in July 2003 to provide a cooperative national arrangement for contracting and operating aircraft for bush firefighting. It achieves this by facilitating the coordination and procurement of a fleet of highly specialized firefighting aircraft that are readily available for use by state and territory emergency agencies across Australia.

NAFC plays a key role in ensuring the sharing of aerial firefighting resources between fire agencies throughout Australia. By pooling resources governments in all jurisdictions get the maximum value for money and ensure that Australians are protected by the best aerial firefighting equipment possible.

The national fleet receives funding support from the Australian Government as well as State and Territory Governments. The NAFC model for sharing aerial resources has worked well and AFAC believes there is merit in establishing a similar system to share other resources, including fire appliances, equipment, fire fighters and emergency service workers.

It is widely recognised that it is impractical for individual AFAC member agencies to maintain all of the resources required to deal with major emergencies. It is during such events that efficient, reliable resource sharing arrangements between jurisdictions become critical as they are the mechanism that provides access to the surge capacity necessary for dealing with peak loads or unusual situations. Although there are many examples of effective resource sharing by AFAC member agencies, there remains a number of issues that could best be resolved by the implementation of a national approach to dealing with them.<sup>80</sup>

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78 McDermott Aviation P/L, *Submission 9*, pp 1-2

79 McDermott Aviation P/L, *Submission 9*, p. 2

80 AFAC, *Submission 49*, p. 12



5.100 WA Farmers' Federation suggested that the Commonwealth provide additional funding for private fire fighting equipment.<sup>81</sup>

### **Mapping**

5.101 The co-ordination of spatial data infrastructure was also raised during a public hearing in Canberra. Mr Gary Nairn related his experience of assisting out-of-town brigades during the 2003 Canberra bushfires:

I found that their lack of maps and things was appalling. They had me photocopying the one and only map of the area to hand out to brigades that had come from northern New South Wales and other places and so did not know the area around Canberra at all to try and help them find where they had to go. I said, 'Why haven't we got more copies of this?' The answer was, 'Well, we have run out and we don't know how to get them.'<sup>82</sup>

5.102 He suggested that there needs to be better national co-ordination of spatial data infrastructure:

Spatial data infrastructure is bringing together the large cross-section of data that exists already in the states and territories, making sure that it is of similar standards and interoperable to enable access to that—and that could be for property boundaries, road centre lines, vegetation and different datasets. Various things are happening in the states, but there is no national coordination of this.<sup>83</sup>

5.103 He contrasted Australia's approach to that of Europe:

Europe have put forward what is called the INSPIRE Directive, Infrastructure and Spatial Information in the European Community, which is driven at high political levels because they can see the advantages of having a spatial data infrastructure across the whole of Europe. They are going inter-country and we are struggling with getting it happening across our nation. It is an infrastructure which ultimately will be extremely valuable for all sorts of industries and particularly for emergency management and other risk management.<sup>84</sup>

5.104 The inquiry Mr Nairn chaired made the following recommendation:

The Committee recommends that Geoscience Australia take responsibility, in conjunction with Emergency Management Australia, for developing a national spatial data policy to coordinate the development of data systems, the collection of data and the sharing of data between all the emergency response agencies across Australia, and that both agencies participate in the development and delivery of spatial information systems as part of a

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81 WAFF, *Committee Hansard*, Perth, 29 April 2010, p. 49

82 Mr Gary Nairn, *Committee Hansard*, Canberra, 12 March 2010, p. 3

83 Mr Gary Nairn, *Committee Hansard*, Canberra, 12 March 2010, p. 4

84 Mr Gary Nairn, *Committee Hansard*, Canberra, 12 March 2010, p. 4

national approach to emergency planning and management data. The first priority in policy development and of systems should be related to bushfire hazards.<sup>85</sup>

5.105 In response to a question on notice about progress on that committee's recommendations, Mr Nairn stated that:

In some respects this is being carried out through the Office of Spatial Data Management (OSDM) within Geoscience Australia. However, it does not have the funding to effectively fully implement the recommendation and therefore the optimum situation for national spatial information is some way off.<sup>86</sup>

5.106 The COAG inquiry also commented on the need for quality and consistent mapping data:

The quality and currency of digital mapping databases are critical for the provision of up-to-date mapping products. The Inquiry supports and encourages state and territory and Australian Government initiatives to digitise existing spatially explicit data and develop digital mapping databases according to nationally agreed procedures and standards and to make these products available in operationally useful form. The inquiry strongly supports the role of national bodies and representative groups in facilitating nationally consistent and accessible spatial data and data products.<sup>87</sup>

### ***Fire warning systems***

5.107 Finally, the committee considered the latest approaches to alerting communities about imminent bushfire danger. This was a major problem during the 2009 Victorian bushfires, when some residents were not warned of the severe and imminent nature of the bushfire threat they faced.

5.108 The Commonwealth recently established a national emergency warning system that will be used in all states and territories except Western Australia. Emergency Management Australia (EMA) informed the committee that:

The national emergency warning system, Emergency Alert System, became available on 30 November 2009. The system integrates with a secure central telephone number database, called the Location Based Number Store, and enables states and territories to send emergency warning messages to fixed line telephones and to mobile services. The emergency

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85 House of Representatives Select Committee on the Recent Australian Bushfires, *A Nation Charred: Inquiry into the Recent Australian Bushfires*, October 2003, p. xxvi

86 Mr Gary Nairn, *Response to question on notice*, Appendix 3, p. 8

87 Ellis, S. et al, *COAG National Inquiry on Bushfire Mitigation and Management*, March 2004, p. 60

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alert was first used on 17 December last year for bushfire warnings in both New South Wales and Victoria.<sup>88</sup>

5.109 Western Australia has opted for a separate system called StateAlert, which operates in a similar way, automatically delivering emergency warnings to home phones and mobile phones on the basis of their billing address.<sup>89</sup> However, FESA told the committee that alert systems should not be used in a way that encourages complacency:

We certainly do not rely on this system to notify people of a fire in their area unless it is an emergency. We still rely on all the normal processes of making sure people are well informed before a fire season of what their risks are and are aware. We do not want them to start relying on technology to make them fire savvy.<sup>90</sup>

5.110 FESA also indicated that warning systems are of limited value for people in the vicinity of an outbreak, where the best warning comes from people on the ground.<sup>91</sup>

5.111 Sentinel Alert provided a submission to the committee outlining their alternative fire warning system utilising integrated radio, satellite and GPS technology. Transmitters mounted on existing towers send signals to home receiver units, carrying warnings graded by the local fire control officer in accordance with the severity of risk, or by central command where incidents are widespread.<sup>92</sup>

5.112 Sentinel Alert noted the failings of SMS warnings during the Victorian bushfires:

...over two million SMS messages were sent in that particular incident, but it took hours for them all to be sent. That is not because of incompetence, but the SMS messaging system is piggybacked onto a communications medium which was never designed for emergency warnings; it was designed as a social/business network.<sup>93</sup>

5.113 Sentinel Alert advocated for the Commonwealth to trial their system across the country.<sup>94</sup>

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88 EMA, *Committee Hansard*, Canberra, 12 March 2010, p. 23

89 StateAlert website, accessed on 3 June 2010 at <https://statealert.wa.gov.au/Vox/publicuser/>

90 FESA, *Committee Hansard*, Perth, 29 April 2010, p. 69

91 FESA, *Committee Hansard*, Perth, 29 April 2010, pp 68-69

92 Sentinel Alert, *Committee Hansard*, Perth, 29 April 2010, pp 59-60; Sentinel Alert, *Submission 54*, p. 10

93 Sentinel Alert, *Committee Hansard*, Perth, 29 April 2010, p. 59

94 Sentinel Alert, *Committee Hansard*, Perth, 29 April 2010, p. 57

**Committee view**

5.114 The committee shares concerns about declining equipment for ground attack while funding for increasing Australia's aerial fire fighting capacity seems to be given highest priority. An aerial capacity is of little value if adequate ground resources are not available to mop up, meaning that the Commonwealth's substantial investment in fire fighting aircraft will not be cost effective. The committee supports AFAC's recommendation that the Commonwealth co-ordinate a national approach to the pooling of ground fire fighting resources across agencies and jurisdictions to maximise the efficiency of their use.

**Recommendation 15**

**5.115 The committee recommends that the Commonwealth co-ordinate a national approach to the pooling of ground fire fighting resources across agencies and jurisdictions to maximise the efficiency of their use.**

5.116 The committee is also of the opinion that private landholders need to have the capacity to attack bushfires early using their own fire fighting equipment. This front line capability improves the effectiveness of aerial fire fighting resources by providing an additional and essential mopping up capability and can in some instances prevent larger and more expensive fire fighting efforts being needed when control of the fire is lost. The committee is of the view that local communities should take responsibility for being equipped to take reasonable measures to protect themselves and their assets when fires are ignited. The committee further notes that the Commonwealth provides tax deductions for the cost of fire fighting equipment when it constitutes a business cost for landowners.

5.117 The Committee also notes that comprehensive and consistent mapping data across Australia is essential to effective bushfire management, and encourages the Commonwealth to continue to fund the national co-ordination of mapping data systems, collection and sharing.

5.118 Finally, the committee welcomes the introduction of a national warning system for bushfires and suggests that continued work be done to overcome the capacity limitations associated with using a telephone based system. The effectiveness of this new system should be continually reviewed following each bushfire season. The committee is also of the view that warning systems are never fail proof and should not be relied on as the primary source of information about possible fire threats or as a substitute for prior bushfire preparedness.

**Senator the Hon. Bill Heffernan**  
**Chair**