Chapter 5

Threats to the reserve system – fire

5.1 Creating reserves is vital to meeting conservation objectives. However, managing those reserves for the values they were designed to protect is equally important. Reserves do not manage themselves, and they face many threats and pressures that could degrade or even destroy their vital functions. The next four chapters outline and discuss some of the major threats to the reserve system, both terrestrial and marine.

5.2 Professor Ralf Buckley named the most common threats to national parks when he told the committee:

> One of the standard lines in park management is the four Fs. They are like the three Rs of local government which are roads, rates and rubbish. The four Fs of parks are fences, fires, ferals and tourists.[1]

5.3 This chapter looks at fire which is one of the most complex factors in the management of parks, being both a natural, even essential, part of ecosystems, as well as a potential threat to biodiversity, life and property.

Fire

5.4 Fire is a natural part of the Australian landscape. Fire has also been used as a land management tool by Indigenous people for thousands of years. However fire can also present a major threat to natural and cultural values, and must be managed effectively to maintain the integrity of the conservation estate.

5.5 Fire and its management were mentioned in most submissions that discussed terrestrial parks. Specific areas of concern were the origin of fires, hazard reduction burning, access, the role of parks staff during critical incidents, and the loss of assets (including biodiversity) through current fire management regimes.

Origin of bushfires

5.6 A number of submissions claimed that bushfires regularly started within national parks, then escaped, posing a threat to lives and other land tenures. Mr Chris Mitchell noted:

> …there have been many intense wildfires in parks and conservation areas, particularly in New South Wales. These have been the subject of media comment and various government inquiries. These intense wildfires, mostly

1 *Committee Hansard*, 21 April 2006, p. 70.

> originating in national parks, have resulted in severe loss of life…[and] degradation of conservation values in those parks.[2]

5.7 Mr David de Jongh, of the National Association of Forest Industries, told the committee that bushfire escape was directly related to national park management practices:

> It was increasingly frustrating to see those areas [previously state forests] go into national parks and the passive management approach being undertaken. In a lot of cases, this involved closing of access roads and a lack of fuel reduction burns and a large increase in fuel loads. This constantly became a major risk to adjoining land—not only to adjoining neighbours but also to state forestry organisations—in terms of fires getting out of those parks into state forests and becoming a major threat to timber resources.[3]

5.8 Dr Peter Volker, of the Institute of Foresters of Australia, was concerned that some fire management techniques that are standard forestry practice, such as conducting hazard reduction burning in buffer zones, are not used in national parks, where fire management seemed to receive a lower priority:

> Prescribed burning in buffer zones around the edges of parks, where parks adjoin other land tenures, is one. There is widespread concern that, because there is no fire management within a park, when a wildfire comes to the edge of a park it is uncontrollable, so adjoining land tenures get into strife. In some cases there have been policies of not fighting the fire in the park and letting the fire burn to the fire boundary. Only then does the control action start. That increases the risk for the adjoining land tenure, whether that be private land or other state land, for instance. I have heard of a number of examples of that in the last two years, including the recent Kosciuszko National Park fires and also fires in the Grampians in Victoria, where the fire was uncontrolled in the park and only when the fire got to the park boundaries did active control measures come into play.[4]

5.9 Mr Clyde Leatham blamed loss of public support for national parks on recent, intense fires that had escaped from national parks:

> Given the devastating fires in Canberra and the Vic Alps and other areas in recent years, and given that these fires escaped from improperly fire managed crown lands, public support for more parks, etc is declining.[5]

5.10 These concerns were not confined to eastern, forested parks. Mrs Ruth Webb-Smith noted:

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2 *Submission 22,* p. 1.

3 *Committee Hansard*, 20 October 2006, p. 16.

4 *Committee Hansard* 31 March 2006, p. 29.

5 *Submission 45*, p. 5.

> Up in the Kimberley it is well known that most of the fires start on CALM land. I think just recently one was burning for four days before it was even reported because nobody is on the CALM land, for instance.[6]

5.11 Mr Kieran McNamara, Director-General of the WA Department of Environment and Conservation responded:

> The notion that all fires and pestilence come from crown land is nonsense. I honestly would have thought in the Kimberley that the ignition points would be independent of land tenure to a considerable degree, and in fact pastoral burning for pasture management purposes would probably have more escapes beyond pastoral leases than deliberate burning on crown reserves would have in the other direction.[7]

5.12 The National Parks Association of NSW presented statistics to counter claims that national parks in NSW are a major source of bushfires:

> … looking at the 2003-04 fire season, of the 5,600 fires during that period, 186 started on park and stayed on park (3.3%) and only 13 started on park and moved off park (0.2%). 64 fires started off park and moved onto national park (1.1%). The remaining 95.3% burned entirely off-park.[8]

5.13 This position was confirmed by the figures in Table 5.1 provided by the NSW Government: [9]

Table 5.1 Source of bushfires

Year	*Started and controlled on-park*	*Started on and moved off-park*	*Started off and moved on-park*
2003/04	186 (71%)	13 (5%)	64 (24%)
1995-2004*	200 (68%)	30 (10%)	65 (22%)

* Figure is averaged between the years of 1995 – 2004.

5.14 The percentages shown in the two submissions vary significantly because the National Parks Association submission shows the origin and movement figures as a percentage of all bushfires in NSW in 2003-04 (5,600), while the NSW Government

6 Pastoralists and Graziers Association of Western Australia, *Committee Hansard,* 31 August 2006, p. 39.

7 *Committee Hansard,* 10 September 2006, p. 40.

8 *Submission 130*, p. 10.

9 *Submission 155*, p. 31.

submission shows the origin and movement figures as a percentage of those bushfires that burned inside a NSW national park in 2003-04 (263).[10]

5.15 The Queensland Government's submission reported that:

> During the 2005 fire year, which extended from March 2005 to February 2006, EPA responded to 272 wildfires on, and adjoining its estate. These fires affected some 0.52 million hectares of managed lands. Of these wildfires, 49% are known to have started off the EPA estate and at least 20% are believed to be arson related.[11]

5.16 Government advice about the rate of bushfire escapes was not accepted by all witnesses. When asked about the accuracy of claims that only seven per cent of the fires in Queensland national parks had escaped onto surrounding land in the last 12 months, Mr Brett De Hayr replied:

> If it is [accurate], it would generally be because the local land-holders have stopped it before it has got any further. With remote management, unless they travel around in Lear jets, I doubt it would be possible that that fire control was being conducted by government staff. It would be local fire brigades, land-holders and local government.[12]

5.17 Mr Peter Cochrane, Director of National Parks, told the inquiry of the difficulty in accurately establishing data in regard to fire on and surrounding national parks:

> I could preface my comments by saying that it is a very complex area. It varies enormously around Australia. Different environments around Australia are fire prone in different ways and obviously managed differently for different purposes. Compiling national statistics is extraordinarily difficult, because they are kept by different people in different ways…There is no comparable dataset [to that for NSW] nationally of which I am aware, and even our own datasets are not everything I would like them to be.[13]

5.18 The NSW Government submission provided figures on how fires in NSW national parks started (Table 5.2). These figures show that most fires in NSW national parks are caused by lightning, arson, or poorly managed hazard reduction burning.[14]

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10 NSW Department of Environment and Conservation (2006), *Frequently asked questions about fire management in NSW national parks*, http://www.nationalparks.nsw.gov.au/npws.nsf/Content/fire_faqs

11 *Submission 175*, p. 14.

12 AgForce Queensland, *Committee Hansard,* 21 April 2006, p. 93.

13 *Committee Hansard,* 20 October 2006, p. 57.

14 *Submission 155*, p. 31.

Table 5.2 Causes of fires, NSW

Year	*2003/04*	*1995 – 2004**
Lightning	48	77
Suspected arson	76	59
Arson	50	49
Legal burn-off	32	20
Illegal burn-off	1	11
Motor vehicle	0	16
Camp cooking	8	10
Powerlines arcing	5	2
Other	28	11
Unknown	15	38

* Figure is averaged between the years of 1995 – 2004.

5.19 Discussing a Commonwealth park within NSW, Mr Cochrane commented:

> In Booderee National Park, which is the one park we have that is in the south-east of Australia and more akin to the sorts of problems that are in the public mind about fire in national parks, we have had over 300 fires since 1957, which is 50 years. Nearly half of them have been arson—deliberately lit—either inside or outside the park. A very small percentage of them are lit naturally by, say, lightning strikes. I think the figures are between two and five per cent, and I suspect that that figure is probably fairly common around Australia. Natural sources of ignition are fairly small; they are mostly started by humans.[15]

5.20 In relation to why the lightning strike figures provided by NSW were substantially higher than the national figures he had just given, Mr Cochrane ventured:

> …if you think about where national parks are, you will know that they are often in high elevation areas. Certainly in New South Wales there are areas of spectacular scenery, areas that have not been under agriculture, for example, and they tend to be more prone to lightning strikes, not surprisingly. So there are somewhat higher incidences of lightning strikes in national parks, at least depending on topography, than there would be in the surrounding country. That is a series of observations; I cannot draw it

15 *Committee Hansard*, 20 October 2006, p. 57.

> together for you because it is enormously complex and it is not particularly informed by a lot of factual information, frankly. Views are passionately held on all sides of the argument.[16]

5.21 The high rate of arson reported by NSW, Queensland and the Department of the Environment and Water Resources is consistent with Finding 6.3 of the Council of Australian Governments' *National Inquiry on Bushfire Mitigation and Management*:

> Arson remains a significant risk for bushfire ignitions, and the states and territories must continue to direct resources towards deterring people from engaging in this illegal activity.[17]

Hazard reduction burning

5.22 Hazard reduction burning, sometimes called 'controlled burning', 'prescribed burning' or 'cool burning', is one of many techniques available to land managers to reduce the likelihood and intensity of bushfires. Its use and management remains controversial in Australia, particularly in relation to decisions about whether or not to burn certain areas, and the timing and frequency of burning. A recurrent theme in evidence to the inquiry was the tension between protecting life and property and protecting biodiversity.

5.23 The Australian Government's response to two recent reports on bushfire management, *A Nation Charred: Inquiry into the Recent Australian Bushfires*[18] and *National Inquiry on Bushfire Mitigation and Management* (the COAG National Bushfire Inquiry),[19] recognised this problem when it stated:

> The Australian Government recognises the principle that reducing the amount of fuel in a landscape reduces the risks associated with bushfires by the reduction in fire intensity and spread and assisting in suppression of the bushfires.
>
> Prescribed burning regimes need to recognise the priority importance of the protection of life and property as well as the conservation of Australia's biodiversity, especially fauna and flora listed under the *Environment Protection and Biodiversity Conservation Act 1999*.
>
> …the Australian Government notes and supports the COAG National Bushfire Inquiry report's findings that prescribed burning regimes need to be based on a shared understanding of the assets and the fire regime needs

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16 *Committee Hansard,* 20 October 2006, p. 57.

17 S Ellis, P Kanowski & R Whelan (2004), *National Inquiry on Bushfire Mitigation and Management*, Commonwealth of Australia, Canberra, p. xxv.

18 House of Representatives Select Committee into the recent Australian bushfires (2003), *'A Nation Charred': Inquiry into the Recent Australian Bushfires.* Available at: http://www.aph.gov.au/house/committee/bushfires/inquiry/report.htm

19 S Ellis, P Kanowski & R Whelan, Council of Australian Governments 2004, *National Inquiry on Bushfire Mitigation and Management*. Available at: http://www.coagbushfireenquiry.gov.au/findings.htm#downloading

> of the assets within the landscape. Moreover, prescribed burning regimes need to be managed in an adaptive style taking account of increasing scientific knowledge of fire within the landscape.[20]

5.24 The Forest Industries Association of Tasmania cited *A Nation Charred: Inquiry into the Recent Australian Bushfires* in support of more active hazard reduction:

> This issue [hazard reduction] received considerable airing in the report produced from the House of Representatives Select committee (2003) titled 'A Nation Charred: Inquiry into the Recent Australian Bushfires' including recommendations that governments ensure adequate access to reserved areas and sufficient resources to effectively manage fuel loads as determined by the Bushfire Co-operative Research Centre. There is no evidence that is obvious to FIAT that any of these recommendations have been adopted and there has been little if any on ground change in policy or funding arrangements.[21]

5.25 *A Nation Charred* made a number of recommendations in relation to hazard reduction burning, of which the most relevant to issues raised in this inquiry are:

- **Recommendation 12**

  The committee recommends that the Commonwealth through the National Heritage Trust, offer assistance to the states and the Australian Capital Territory to develop specific prescribed burning guides, at least to the quality of Western Australia, for national parks and state forests through out the mainland of south eastern Australia.

- **Recommendation 13**

  The committee recommends that the Commonwealth seek to ensure that the Council of Australian Governments seek agreement from the states and territories on the optimisation and implementation of prescribed burning targets and programs to a degree that is recognised as adequate for the protection of life, property and the environment. The prescribed burning programs should include strategic evaluation of fuel management at the regional level and the results of annual fuel management in each state should be publicly reported and audited.

- **Recommendation 14**

  The committee recommends that, as part of its study into improving the effectiveness of prescribed burning, the Bushfire Cooperative Research Centre establish a national database that includes areas targeted for fuel reduction, the area of fuel reduction achieved based on a specified standard

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20 Australian Government (2004), *'A Nation Charred: Inquiry into the Recent Australian Bushfires, House of Representatives Select Committee on the Recent Australian Bushfires' – Australian Government Position*, pp 10–11. Available at: http://www.aph.gov.au/house/committee/bushfires/inquiry/govt_response.pdf

21 *Submission 73,* p. 4.

of on ground verification and the season in which the reduction was achieved. The committee also recommends that in developing this database the Cooperative Research Centre develop a national standard of fire mapping, which accurately maps the extent, intensity, spread and overall pattern of prescribed and wildfires in Australia.

- **Recommendation 15**

  The committee acknowledges community concerns about smoke pollution as a result of prescribed burning and recommends that the Bushfire Cooperative Research Centre pursue its proposed study into smoke modelling.

- **Recommendation 16**

  The committee recommends that the Bushfire Cooperative Research Centre monitor the effect of grazing on mitigating the return of woody weeds to recently fire effected areas across various landscapes including alpine and subalpine.

- **Recommendation 17**

  The committee recommends that the Bushfire Cooperative Research Centre conduct further research into the long term effects and effectiveness of grazing as a fire mitigation practice.[22]

5.26 The Council of Australian Governments (COAG) National Bushfire Inquiry made several findings in relation to hazard reduction burning and other responsibilities of land managers, including the following that are relevant to issues raised during this inquiry:

- **Finding 6.4**

  There needs to be a shared understanding and valuing of assets in relation to bushfire mitigation and management. There also needs to be better recognition of the fact that prescribed burning is a complex matter—ecologically and operationally—and that a variety of prescribed fire regimes might be necessary to meet a range of objectives.

- **Finding 6.5**

  There is a need to develop ways of assessing the effectiveness of fuel-reduction programs in terms of the resultant degree of reduction in risk.

- **Finding 6.6**

  Comparing the gross area treated annually in fuel-reduction burning—that is, for a whole agency, region or state—with a published target is not a good basis for assessing performance and is likely to be counterproductive.

22 House of Representatives Select Committee into the recent Australian bushfires (2003), *'A Nation Charred': Inquiry into the Recent Australian Bushfires.* Available at: http://www.aph.gov.au/house/committee/bushfires/inquiry/report.htm

- **Finding 6.7**

  The Inquiry supports the adoption of an adaptive management approach to setting fire regimes that are appropriate for biodiversity conservation. Such an approach should:

  – make explicit the biodiversity objectives;

  – recognise lack of knowledge and clarify questions that need to be answered;

  – design burning prescriptions that can answer these questions;

  – devise and fund monitoring and other data-collection activities;

  – review and communicate results; and

  – use the new knowledge to modify the management prescription.

- **Finding 6.8**

  More research and monitoring are required in order to understand the effects of fuel-reduction burning and large-scale bushfire events on water quality and quantity in catchment areas.

- **Finding 6.9**

  The potential for a reduction in air quality is one of several impediments to achieving necessary levels of fuel-reduction burning. There is a trade-off between tolerating reduced air quality and achieving risk reduction by fuel-reduction burning. Resolution of the question requires both more research and effective dialogue with the community.

- **Finding 6.10**

  Long-term strategic research, planning and investment are necessary if the Australian Government and state and territory governments are to prepare for the changes to bushfire regimes and events that will be caused by climate change.

- **Finding 6.11**

  There is a potential trade-off between maximising native pasture production by using fire and avoiding biodiversity loss. Too-frequent use of fire, and too much uniformity in fires, can result in loss of biodiversity in a region.

- **Finding 6.12**

  Natural resource management regional plans developed under the National Heritage Trust should take bushfire management into account and be consistent with the bushfire risk–management process.[23]

23 S Ellis, P Kanowski & R Whelan, Council of Australian Governments2004, *National Inquiry on Bushfire Mitigation and Management*. Available at: http://www.coagbushfireenquiry.gov.au/report/recommendations.htm

Calls for more hazard reduction – 2003 Alpine fires

5.27 Most submissions that related to the Alpine (Vic) and Kosciusko (NSW) National Parks referred to the lack of hazard reduction burning prior to the 2003 fires that burned a substantial area of the Australian Alps. These fires, attributed to lightning strikes, were used as an example of fires intensifying as a direct consequence of park management. Forest Fire Victoria wrote:

> Using the 2003 Alpine fires in Victoria as an example, the fires were caused by nature but the resulting fire event was not natural. Those fires were fed by fuels that accumulated over decades where natural fires had been deliberately extinguished and little or nothing had been done to reduce those accumulating fuels by planned burning or any other means. In those places the fires were feral, and burnt over extensive areas with an intensity and uniformity that was alien to the natural processes that forests require for their health, diversity and sustainability.[24]

5.28 The Snowy Mountains Bush Users Group observed:

> The 2003 wildfires that ravaged KNP [Kosciusko National Park] and the ACT were indeed a tragic event. In KNP, two thirds or 455,000 hectares, were consumed by a fire that destroyed everything in it's path- eg. heritage huts and sites, wildlife, vegetation, water quality and has contributed to major soil erosion. In Canberra four lives were lost, 500 homes and 160,000 hectares burnt.
>
> In the last month or so we have seen similar wildfires, burning out of control in national parks and conservation reserves, in NSW, VIC, SA and Tasmania and breaking out and destroying farming and grazing land, stock and property, threatening human life, towns and villages.
>
> All this is happening while bureaucrats, scientists and sociologists debate the merits of hazard reduction burns. [25]

5.29 Mr Ralph Barraclough, Captain of the Licola Fire Brigade, compared the fire management regimes of Parks Victoria and the Forestry Commission unfavourably:

> Fuel reduction in national parks is grossly inadequate to protect the environment, water supplies, stop massive erosion and stop the risk of hundreds of people being killed. Fires escaping from this mess will eventually destroy the timber industry and continue to threaten surrounding communities, visitors, and water supplies. Parks Victoria has said fuel reduction responsibilities rests with the DSE [Department of Sustainability and Environment], yet Park Rangers have the right of veto and there appears little accountability. The right of veto needs as a priority to be removed from Parks Victoria.

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24 *Submission 88*, p. 4.

25 *Submission 59*, p. 7.

> The more restrictions put in place with fuel reduction burns the more escapes of fires onto private land from more fuel building up. There needs to be a return to the days when people from the old Forests Commission waited for the right weather conditions and simply flew around throwing incendiaries out wherever they were needed. I am unable to remember one solitary fire that got away in our area or caused a problem. This method made the place safe at a fraction of the cost of what is not working now.[26]

5.30 Submissions from other areas cited the Alpine fires in support of calls for increased hazard reduction burning in their own areas. The Forest Industries Association of Tasmania (FIAT) wrote:

> FIAT believe that there has been wholly insufficient resources directed to the management of reserved forest areas including but not limited to fuel reduction activities including controlled burning. Extensive wildfires in Victoria, NSW and the ACT along with several smaller but equally damaging fires in Tasmania are testimony to the lack of attention to this vital management tool by governments. [27]

5.31 Several submissions from Alpine regions, including that of Mr Philip Maguire, advocated grazing as a form of hazard reduction:

> I submit that the greatest threat to the Bogong High Plains is wildfire emerging from sub-alpine forests which carry an unprecedented fuel load and pose an extreme risk. Following each successive hot fire the fuel load increases substantially and the risk to the plains increases exponentially. This risk will be exacerbated seriously by the cessation of grazing due to a build up [of] waste grass and other combustible material.[28]

5.32 However, there was scientific evidence suggesting this may not be a good approach:

> The scientific evidence on the grazing of cattle in the high plains of Victoria is as strong as you could possibly ever get from science. It damages sphagnum bogs; it has altered the herb field structure above the tree line. The scientific evidence has always stacked up on one side…In the 2003 fires, above the snow line where the alpine grazing occurred, there was no difference whatsoever with the areas burnt between the areas that had had cattle on them for the last 50 or 100 years and those areas that did not have cattle. The areas in which cattle have grazed in the high country for 100 years to prevent burning showed no difference when that wildfire swept through the area…
>
> I say again: isolate the cultural from the ecological here. You can have a very good debate about mountain cattlemen and their role in a cultural sense…You also have to ask the question about whether you are going to

26 *Submission 154*, p. 13.

27 *Submission 73,* p. 4.

28 *Submission 5*, p. 2.

> believe the independent scientists with no vested interest in the outcome or the people who are paying very little money to graze on public land having never been required to go through an expression of interest process or any kind of public tendering process for their grazing rights.[29]

5.33 Bushfire records suggest that the scale of the 2003 fires was not unprecedented in that region, and that fire outbreaks in the Australian Alps have been regular seasonal occurrences under previous management regimes:

> These were not the first severe alpine fires, and they certainly won't be the last. South-east Australia's vast alpine region contains some of the most bushfire-prone country in the world. Recent data presented to the Australian Alps Liaison committee showed there had been around 170 bushfires in the alpine region between 1800 and 2003. Only 15 of those fires occurred after Kosciusko National Park was formally created in 1967.
>
> The worst alpine fire occurred in 1939. Pastoralists in the region had by then spent almost 100 years grazing, logging and burning the high country only to see a catastrophic fire tear through the Alps. It only stopped when it reached the coast and remains the largest single fire event in the alpine region's European history. Twice the area that burned in 2003 burned in 1939 and 71 people lost their lives.[30]

Calls for ecologically appropriate burning and fire management

5.34 The inquiry received several submissions recommending that burning regimes need to be better tailored to the ecological properties and needs of specific areas. These calls are consistent with Findings 6.4, 6.7 and 6.11 of the COAG National Bushfire Inquiry outlined above.

5.35 Mr Allan Holmes of the SA Department for Environment and Heritage noted recent changes to fire management in South Australian parks that included both the introduction of hazard reduction burning, and the recognition that there were circumstances, sometimes temporary, where fire should be excluded from some areas:

> …one of the problems for us is that, from an ecological point of view, we have had too much fire in a number of our parks. Ngarkat, a large park on the Victorian border, has been extensively burnt over the last 10 years. We would prefer to keep fire out of it altogether for a period of time. So it is very complex. It [fire] is one of the big threatening processes—both too much and too little.[31]

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29 Associate Professor Geoffrey Wescott, *Committee Hansard*, 5 June 2006, pp 19–20.

30 NSW Department of Environment and Conservation (2006), *Frequently asked questions about fire management in NSW national parks*, available at: http://www.nationalparks.nsw.gov.au/npws.nsf/Content/fire_faqs#5

31 *Committee Hansard,* 6 June 2006, pp 46–47.

5.36 Addressing submissions that had questioned the capacity of national parks to meet their own burning schedules, Mr Peter Cochrane explained why it was not always appropriate to conduct hazard reduction burns in areas with high fuel loads:

> Where you have sizeable tracts of bush that have high fuel loads and are increasingly dry, which is certainly what is happening at the moment, the risk of even setting small fires can be too great…the cumulative effect of this tends to mean that the risk goes up. This is not confined to national parks; it equally applies to state forests. No-one in their right mind would burn in unsuitable conditions. Irrespective of the nature of your land management purpose, if it is too risky to burn, it is too risky to burn. It would apply to pastoralists as well as those who live in country that fire is a management tool. It does not just apply to us.[32]

5.37 Dr Beth Schultz, representing the Conservation Council of Western Australia, questioned the extent to which Western Australian park managers relied on burning as a management tool, while other fire management strategies previously endorsed by the Western Australian government were not implemented:

> It is of concern to me how much of that [funding provided for park management] goes into burning. Burning is a huge issue. The federal government—the Prime Minister, in fact—instigated an excellent inquiry by the Council of Australian Governments into bushfire mitigation and management. They came up with 29 excellent recommendations. The states all endorsed that, but it is not being implemented in Western Australia. So when it comes to park management in relation to fire, I think the excellent recommendations of that inquiry should be implemented...Fire management is a major issue with park management, and I think in Western Australia far too much money is spent on burning—actually doing the burning—when there are other more environmentally friendly ways of mitigating and managing wildfires. [33]

5.38 The priority given to activities such as firebreaks and aerial fire-setting was also raised in relation to Queensland. Dr Paul Williams told the committee that 'currently, evaluation of park performance primarily targets the numbers of hectares burnt or sprayed rather than looking at whether those burns or weed control programs have met their ecological objectives'.[34] He observed that thorough fire management was labour intensive, and that a lot of the fire resources allocated to QPWS were spent on broad-acre activities, leaving other fire-management work under resourced:

> Fire management in parks requires a great deal of staff time to implement appropriately. Many of the animals in tropical Australia that are thought to be in decline are those that live and feed amongst the grass layer, such as granivorous birds and small mammals. It is thought that some grassy, woodland communities will benefit from progressive burning throughout

32 *Committee Hansard*, 20 October 2006, p. 59.

33 *Committee Hansard*, 10 September 2006, pp 6–7.

34 *Committee Hansard*, 30 June 2006, p. 20.

the dry season—that is, starting to burn early enough in the dry season when only small patches burn and progressively burning sections later in the season. This can extend the availability of seed supply throughout the year, which is critical for these birds and mammals. Naturally, this requires great skill and time to implement it. The extra QPWS funding for fire management mentioned at the Brisbane hearing primarily covers the maintenance of fire breaks and aerial ignition. While that is good, more funds are also needed to increase the availability of ranger time to implement and evaluate fires, including funding for travel, overtime for night burns and possibly even casual extra employment.[35]

Figure 5.1 The committee inspecting fire break work being conducted in a Queensland national park

5.39 Dr Williams expressed the concerns of witnesses from other states when he told the committee that fire management required appropriate evaluation to ensure that the objectives of activities were met:

> To do the fire properly you have to go out there and have a look, firstly to see whether the area needs burning that year and what your objective is. You implement the fire and then you have got to go back and see whether or not it worked. I believe this is where we are falling short in many areas. We do not have the resources to necessarily implement enough fires in many areas anyway, but we are certainly not evaluating them appropriately…from a fire management point of view, we need to look

35 *Committee Hansard,* 30 June 2006, p. 20.

> more ecologically at why we are doing it—such as weed control or promoting the abundance of a certain animal or plant—and whether we achieved the objective.[36]

5.40 Ms Virginia Young, of the Wilderness Society, drew attention to the ecological impact of using burning techniques that are inappropriate for a particular site:

> …perhaps you could have a conversation with CALM about not burning the Stirling Range from the bottom up and setting off a really hot fire that is fundamentally changing the ecology of the Stirling Range. What naturally happens in those environments is that you have a lightning strike on the peaks and a trickle-down, very cool, fire. What has been happening for years is the exact opposite, and—surprise, surprise—all the ecology of that region is changing.[37]

5.41 Some local environment groups expressed concern that reactive responses to critical incidents could lead to excessive hazard reduction burning, or the total suppression of fire, ultimately resulting in environmental damage. The Blue Mountains Conservation Society wrote:

> Fire management tends to be developed in a climate of recrimination, too often fanned by the media. Governments exercise the knee-jerk reaction, particularly if someone dies. It is far too easy to say that 'x' wouldn't have happened had 'y' been burned; but even though the argument has some validity, it disregards the whole basis for having national parks. Taken to the absurd, fire management would be greatly improved by clearing everything and covering the remains with concrete![38]

5.42 Gecko, the Gold Coast and Hinterland Environment Council, was concerned that beliefs about the adaptation of some Australian species to fire were used as a general justification for burning, without regard to effects on particular species, or the impact of landscape modification:

> Fire management presents a very precarious problem. While some native vegetation has adapted to fire and even rely on it to reproduce, another part of it can be irreparably harmed in the process of proscribed burns. Debates still occur between scientists that believe they are desirable and those that believe it's harmful, but other affected parties, such as farmers also have concerns. Some plant species may have fire coping mechanisms but that in no way indicates that they are fire dependent…Many patches of wildlife habitat are already too patchy and burning can fragment animal populations after driving them of their land.

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36 *Committee Hansard,* 30 June 2006, p. 28.

37 *Committee Hansard,* 16 June 2006, pp 94–95.

38 *Submission 29*, p. 4.

> Queensland, along with other states, has problems with over-reaction to bushfires, and unnecessary frequency, intensity, and inadequate planning for intentional fires in Brisbane's vicinity.[39]

5.43 Gecko recommended that fire management plans should be tailored to particular ecosystems, with reference to the effects of fire at a species level:

> Fire management plans must include considerations of the species contained within a region. Studies must be done to determine whether the animals can survive and if there is sufficient habitat in the vicinity that is suitable for them to sustain themselves. Studies of the specific plants and their needs, as opposed to what they can withstand, are assessed. Many fires are unnecessary and greater planning and knowledge would help alleviate this problem…However, thus far most regions have not successfully designed or implemented fire regimes that reflect the needs of their regions.[40]

5.44 Oatley Flora and Fauna Conservation Society noted that the suppression of fire in urban areas could be detrimental to some species:

> Changes in the frequencies and intensities of bushfires cause adverse changes to habitats and species. This can be an important problem in reserves near urban areas where fire frequencies may be either increased through human contact, or almost eliminated to protect nearby properties. As a number of native plants are dependent on bushfires for seed germination or for controlling competing species, less frequent fires may be as detrimental for some conservation purposes as more frequent fires.[41]

Current fire management practices in national parks and reserves

5.45 Fire management is a priority activity for national parks managers. The Department of the Environment and Water Resources noted in their submission that:

> Considerable resources must be allocated to fire management, particularly where the safety of visitors and residents is at risk as well as where sensitive cultural and natural values need protecting.[42]

5.46 Reserve managers who provided evidence to the inquiry described some of the difficulties and tensions involved in managing fires on public land. Mr Peter Cochrane told the committee:

> All park agencies around Australia have been paying increasing attention to fire and fire management for a variety of reasons, certainly not the least being biodiversity conservation. They are trying their hardest to both understand and then mimic natural fire regimes so that you are trying to

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39 *Submission 76*, pp 11–12.

40 *Submission 76*, p. 13.

41 *Submission 83*, p. 3.

42 Department of the Environment and Heritage, *Submission 126*, p. 15.

> return country back to the state that might have existed before Europeans came and dramatically changed both fire risk and burning. Asset management, the pressure of neighbours, the pressure of looking after property in and around national parks, as well as public perceptions, are all very significant drivers on national park agencies getting fire management right. It is a very difficult thing to get right, though.[43]

5.47 Mr Cochrane cited Booderee National Park as an the example of the difficulty of matching burning schedules to prevailing conditions, resulting in fuel build-up:

> Essentially, we have a window of four months in a year—two lots of two months, in spring and autumn—when we can burn. This year we burned something like 12 per cent of the area that we planned to burn, because those narrow windows were just not sufficiently safe to have those fires going. Either the humidity was too high and a fire would not take or humidity was lower than was desirable and we therefore halted the fire. I think that is the experience of protected area agencies around the country. There are narrow windows when you can do this safely…those windows can be very short or not there at all, in which case you start accumulating a stock of land that you would have burned but cannot, and that tends to build your fire risk.[44]

5.48 Several park managers reported that they had received enhanced funding since the 2003 fires. Mr Kieran McNamara told the committee that the annual budget available to the WA Department of Environment and Conservation for fire purposes had been increased in recent years by 'probably $7 million or $8 million per annum'.[45] The Department's submission explained how the additional funding was being used:

> This funding is allowing for improved fire preparedness and on-ground fire management to occur as well as the progressive implementation of planned fire regimes through prescribed burning in remote areas. Additional fire ecology research capacity has also been funded.[46]

5.49 Several states reported recent changes in their approach to fire management. Mr McNamara explained that the WA department was currently engaged in research that would inform management of the Kimberley region, because they were concerned about significant changes to the landscape caused by altered fire regimes:

> Fire in the north and inland is a problem, and altered fire regimes—with the cessation of traditional Aboriginal burning and with large, intense wild fires that run for months and cover hundreds and hundreds of thousands, if not millions, of hectares in single fires—are a serious problem in terms of the homogenisation of that landscape…For the first time we have appointed a

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43 *Committee Hansard,* 20 October 2006, p. 58.

44 *Committee Hansard*, 20 October 2006, p. 58.

45 *Committee Hansard*, 10 September 2006, p. 39.

46 Department of Conservation and Land Management, Western Australia, *Submission 135*, p. 16.

> fire ecologist out of our science division to the Kimberley, because we are concerned about those issues.[47]

5.50 Fire management on private conservation reserves has not attracted the criticisms directed at national parks. Mr Atticus Fleming described the Australian Wildlife Conservancy's cross-tenure approach to hazard reduction on their private reserve in the Kimberley:

> Fire management is a critical issue for us up there. The Kimberley burns to a crisp every year now. We are doing fire management from helicopters. In the last 12 months we have introduced an aerial incendiary device which had not been used in the Kimberley previously, so we are in a sense leading the way in terms of fire management up there. We are working with our neighbours, with CALM and with the Aboriginal communities. We are a conservation organisation and this year we were invited to do fire management on the neighbouring pastoral properties as well as the neighbouring Aboriginal land. There are probably not too many examples of where that occurs.[48]

5.51 The systematic use of burning in South Australia is relatively recent, and reflects a change of approach in response to community concerns. Mr Allan Holmes told the committee that:

> In South Australia there is not a history of burning for ecological or fuel reduction purposes. That is just the way it has been here for a long period of time. However, probably in the last 10 years, as the result of significant fires in New South Wales, the ACT and Victoria, questions have been asked about the appropriateness of our approach to burning. In 2002 this government committed to a major change in its approach to fire management on public land. Over the last four years we have engaged in a program of reintroducing fire management into public land management on any scale, both for fuel reduction or fuel management purposes and for biodiversity conservation purposes.
>
> The reality is that it requires a great deal of technical expertise and technical competence to do it well. You do not turn that round overnight. In four years we have built some capacity. We are now able to conduct fuel reduction burns and ecological burns at scale. In South Australia we are starting to see that become part of our management tool kit. As I said at the very start, it is a different landscape to the Victoria, New South Wales and Western Australian landscapes where you have high-value forests and different fuel levels, fire behaviours and fire ecology, so it is a different scale. [49]

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47 *Committee Hansard*, 10 September 2006, p. 40.

48 *Committee Hansard,* 20 October 2006, p. 39.

49 Department for Environment and Heritage, South Australia*, Committee Hansard,* 6 June 2006, p. 46.

5.52 Mr Holmes described his department's fire responsibilities, noting that the department worked within a context where there was a predictable cycle of assigning blame following catastrophic fires:

> The obligations that we have relate to that boundary protection, reduction of fuel along boundaries and trying to ensure that you actually have control lines on park boundaries. If you look at the work that we have done over the last 10 years in the Adelaide Hills, which is where there is the greatest risk, they are probably defensible. You could say: 'Look, this land management agency has done the right thing. It has firebreaks. It has fuel reduction burns. It has got resources deployed. It works well with the community fire-fighting organisations. It works well with local government.' But I still fear the day when we get another Ash Wednesday in the Adelaide Hills. You will get catastrophic fire. Houses will burn, and the inquiries will come looking to blame public land managers. You have seen that played out in New South Wales, Canberra and Victoria. In a large part, they are pretty good land managers who do pay attention to fire management. It is just that we have forgotten that we live in a very dangerous environment.[50]

5.53 The Queensland Government provided details of their fire management program, noting that expenditure had increased since 2004 'as part of an election commitment to enhance fire management':[51]

> In the 2005 fire year, the EPA planned burning program achieved more than 0.5 million hectares of managed lands across the state. Many of these burns are scheduled over the winter months to address protection issues [in] protected areas and other reserves with an urban interface. In preparation for this year's fire season, EPA carried out ongoing pre-emptive work to ensure on-ground readiness, including the upgrading of some 1,500 kilometres of high priority firebreaks on and adjacent to the estate. Almost 2,000 kilometres of firebreaks are scheduled for upgrading in the 2005-06 financial year…
>
> Close liaison continues between EPA and all bushfire management agencies in Queensland, particularly the Rural Fire Division of the Queensland Fire and Rescue Service. Under its Good Neighbour Policy, EPA places an emphasis on working with adjoining landholders, local communities and traditional owners to manage fire on the land it manages and on surrounding areas. This aids in developing and maintaining cooperative arrangements with stakeholders and assists in resolving issues associated with hazard reduction burning, fire trails and wildfire suppression.[52]

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50 Department for Environment and Heritage, South Australia, *Committee Hansard*, 6 June 2006, p. 48.

51 *Submission 175*, p. 21.

52 *Submission 175*, p. 15.

Indigenous fire knowledge

5.54 Aboriginal customary burning is incorporated into the management plans of some reserves managed by the Director of National Parks, for example:

> In both Kakadu and Uluru-Kata Tjuta National Parks, fire is used by park management and traditional owners as a management tool, as outlined in each management plan.[53]

5.55 Burning practices in Uluru-Kata Tjuta National Park contribute to employment and community involvement opportunities for the local Indigenous ('Anangu') people. Ms Mirjana Jambrecina told the inquiry:

> Within the natural and cultural resources area we have four staff that work on an ongoing basis with us, part time. We also have quite a good crew of members of the community who come on as day labour…the types of programs that we run at the moment include, for example, fire. We are doing our burning now, in the cooler winter months. You might have noticed yesterday as you were going out to Kata Tjuta that there was quite a crew of Anangu out there burning with park staff.[54]

53 Department of the Environment and Heritage, *Submission 126*, p. 15.

54 Department of Environment and Heritage, *Committee Hansard*, 28 June 2006, p. 41.

Figure 5.2 Committee members with Parks Australia staff at Uluru-Kata Tjuta National Park

5.56 Some Anangu traditional owners believe that their obligations to burn and otherwise protect country that is currently leased to Uluru-Kata Tjuta National Park could be better supported under formal agreements between the government and traditional owners. Mrs Barbara Tjikatu AM, said:

> We have talked for a long time. We have been trying with joint management for a long time but there are some frustrations about the lack of support for us to extend and to get better opportunities through joint management to better look after our country and to better look after future generations…The work that we have to do is extensive. It is to do with looking after fauna, burning the country to protect it and hunting—going out and being able to continue our knowledge of our hunting skills. The government, though, has for a long time not actually really made these things happen. They have not signed the document that allows that kind of work to go on. The reports that might have been made have not come to anything.[55]

55 Mrs Barbara Tjikatu AM, Anangu traditional owner, Member, Uluru-Kata Tjuta Board of Management, through Ms Kathy Tozer, interpreter, *Committee Hansard*, 28 June 2006, pp 28–29.

5.57 The loss of Aboriginal burning regimes and other management activities in Far North Queensland parks is threatening biodiversity in that region. Mr Bruce White, of the Aboriginal Rainforest Council, warned that:

> The failure to include Aboriginal people in the management of the ecology of this area will ultimately result in loss of biodiversity, and the evidence is already being reported in the annual reports of the Wet Tropics Management Authority. They refer to the rare mahogany glider and the bettong. The problem is that there is no longer an Aboriginal burning regime or fire regime. The loss of the Aboriginal fire regime is putting biodiversity in danger. When we refer to this area as being biocultural, we are just making that very simple point: you cannot manage this area without having regard to the role that Aboriginal people...[56]

5.58 Ms Margaret Freeman, Jiddabal traditional owner and delegate to the Aboriginal Rainforest Council Management Committee, discussed some of the differences in practices and outcomes between Jiddabal burning regimes and those used by the Queensland EPA:

> Let us look at what will work, what things have not worked, where we can utilise the knowledge we have as traditional owners who have been managing the country daily, and how we can fit that into the bureaucratic regime. If I want to burn, it will depend on when the food sources might be available and what the weather is. However, with EPA, it might be when their resources are available and when they can get out to burn. I have gone out and just about had a heart attack because they are burning at the wrong time of the year in some places. But when you say to them, 'You don't burn now,' they say, 'Oh yes, but this is when we can do it.' I have said, 'It doesn't matter when you can do it; you are not going to regenerate the land or get the seeding of plants to be able to revegetate if you do it now.'
>
> Even, as a result of Cyclone Larry, when talking to the affected traditional owner groups and saying, 'Has EPA considered fire burn?' they would say, 'Oh no, they are just going to push it all back in and let the scrub rehabilitate itself.' I said no, and people said, 'But you lived in the rainforest; you couldn't burn,' and I said, 'Yes, we did burn.' We may have spot burnt small patches, whereas EPA will go along and say, 'Yes, let's burn the whole hillside.' That was not something that we would have done. But when you try and put it across to them to say, 'Look, we've been doing it for thousands of years; you would think you would learn,' they will come back 12 months later and say, 'Oh, what did we do to the site?' My response would be: 'Well, you burnt it at the wrong time. That is why it hasn't recovered to the way it was. That is why the weeds have taken over. You burnt it at the wrong time, or you did not supplement by environmental harvesting.' You might have a bug that did this job at that certain time of the year and that reduced some other issue.[57]

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56 *Committee Hansard*, 30 June 2006, p. 65.

57 *Committee Hansard,* 30 June 2006, p. 74.

5.59 Ms Freeman concluded:

> That is the type of information we are trying to share with the agency, but they are not being very receptive to it. We can see straightaway how their lack of management has damaged our country, but it is not as evident to them.[58]

5.60 Other traditional owners in the Cape York area have expressed concern at being expected to entrust responsibility for protecting their country to authorities who demonstrate little awareness of culturally appropriate burning practices. Ms Rhonda Brim, Djabugay Native Title Holder, told the committee:

> Our concern as traditional owners is that, if our sacred sites get burnt, there is nothing to replace them and no-one is accountable. Although the government has these different departments in place caring for country, if anything goes wrong with our cultural sites or anything, who is liable?...we should have the permit for our sacred sites for protection. I can protect my own history. Why wait on someone else to protect it for you?[59]

5.61 As discussed above, the WA Government is currently investigating intense fire behaviour in the Kimberley region, because it is concerned that disruption of Aboriginal burning has contributed to significant changes in both the landscape and bushfire regimes.

5.62 In South Australia, there is debate about appropriate fire management on Kangaroo Island, where the landscape and fire regimes are markedly different to those on the mainland because they developed without adaptation to Indigenous burning:

> I do not think South Australia has those tensions that the eastern states have—or not to the same degree—but concern about fire in South Australia largely relates to burning on Kangaroo Island, from which Aboriginal people were absent for probably 10,000 years. The fire regimes in Kangaroo Island were largely natural in the sense that they were lightning induced, whereas on the mainland of course there were both natural fires and Aboriginal burning. They are quite different fire regimes. The concern expressed on Kangaroo Island is that you need to be cognisant of that different regime in what you do on Kangaroo Island. That has really been the most sensitive issue.[60]

5.63 The COAG National Bushfire Inquiry recommended (Recommendation 6.4) that:

> [F]ire agencies, land managers and researchers continue to work in partnership with Indigenous Australians to explore how traditional burning practices and regimes can be integrated with modern practices and

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58 *Committee Hansard*, 30 June 2006, p. 74.

59 Aboriginal Rainforest Council, *Committee Hansard*, 30 June 2006, pp 71-72.

60 Mr Allan Holmes, Chief Executive, Department for Environment and Heritage, South Australia, *Committee Hansard,* 6 June 2006, p. 47.

> technologies and so enhance bushfire mitigation and management in current Australian landscapes.[61]

5.64 There is potential for the management of national parks to implement co-operative and respectful approaches towards using Indigenous knowledge, including knowledge about fire management. Ms Melanie Stutsel, of the Minerals Council of Australia, provided examples of how incorporating Indigenous practices into the management of land rehabilitation had improved relations between mining companies and Aboriginal communities, and produced benefits for both parties:

> Where possible, we have tried to use Indigenous knowledge in terms of fire management, seed regeneration and rehabilitation and revegetation practices. Some of that revegetation has been in seeking to grow bush foods in an area, to provide economic opportunity for Aboriginal people post closure. But when we are using that information, it is very important that we respect the appropriate cultural protocols in using it. So there are some situations in which that work is undertaken purely by Indigenous people on behalf of the industry. There are other aspects where it is undertaken in partnership. We would argue that those principles could be applied to the management of conservation areas as well.[62]

Community attitudes and skills

5.65 In urban areas, fire is no longer widely used as an everyday tool, either in the household for cooking and heating, or for small-scale land management activities such as burning rubbish or leaves. Some submissions pointed to this loss of familiarity with fire as cultural deskilling that encourages negative or fearful attitudes towards using fire as a management tool. Mr Douglas Treasure wrote:

> The management of fire is another issue that needs looking at. A lot of work is just starting on that issue. A lot of this fire stuff is urban driven. My wife is a secondary school teacher. She teaches science. She said that if you give kids a Bunsen burner and a box of matches today they just do not know how to handle them as fire is not part of our everyday life these days. Fire is thought of as being bad. You read in the paper that fire destroys things. But fire regenerates things in the high country. It is a matter of how it is managed.[63]

5.66 The Bushfire Front identified lack of fire awareness and skills amongst park managers and staff as a serious problem that increases the risk of fires behaving unpredictably:

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61 S Ellis, P Kanowski & R Whelan, Council of Australian Governments 2004, *National Inquiry on Bushfire Mitigation and Management*. Available at: http://www.coagbushfireenquiry.gov.au/findings.htm#downloading

62 *Committee Hansard,* 31 March 2006, p. 38.

63 Mountain Cattlemen's Association of Victoria, *Committee Hansard,* 5 June 2006, p. 72.

> One of the most serious consequences of the failure of park services to build and maintain good staff is the decline in field operatives with sound experience in the practicalities of green burning. It is almost as disastrous as no burning to put a burning program in the hands of people who don't know how to burn. The result is fires which are too hot, which escape and cause damage, and which reduce the credibility of the entire approach.[64]

5.67 Mr Allan Holmes called for greater awareness and acceptance of the risks of living in fire-prone areas:

> The harsh reality is that people who live in fire-prone areas have got to look after themselves. There has to be some community resilience. You cannot do enough to protect them. Our loss of life on Eyre Peninsula last year, where almost a dozen people perished, shows that. When you look back at that, we were in the business of trying to apportion blame: 'Was it a land manager's fault? Was it the firefighters' fault?' But if you read all of the coronial inquiries into fires over the last 30 years, you conclude that we have forgotten that we live in a very fire-prone environment where on catastrophic days you are going to get fires that will burn houses and threaten life. If you live in those environments, you have got to take care. I think that is a really important starting point.[65]

5.68 WWF-Australia and the IUCN proposed that for a fire management strategy to be effective it must address prevention, response and restoration. In relation to prevention, they proposed a number of measures designed to change community attitudes towards fire, stating:

> …many forest fires need not occur, however they will continue to ignite and degrade forests as long as governments fail to focus on both the direct and underlying causes of unwanted fires. In practice this means that governments must develop and implement programmes that influence people to modify the way they use fire, for example through enacting and enforcing laws that focus on prevention of fires and through focussed efforts on changing attitudes towards the use of fire. They must also ensure that laws and policies are fair (e.g. result in equitable sharing of costs and benefits and recognition of community-use rights), and seek out and remove perverse incentives that may encourage harmful fires.[66]

5.69 The Gold Coast and Hinterland Environment Council suggested that planning regulation could be used more effectively to reduce fire risks to people and property:

> As one of the main reasons people call for proscribed burns is that they are concerned for the safety of their houses and property, it is advisable to restrict new building to areas that are sufficiently removed from the bush.

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64 *Submission 20,* p. 4.

65 Department for Environment and Heritage, South Australia, *Committee Hansard,* 6 June 2006, p. 48.

66 *Submission* 161, p. 35.

> Although many building plan restrictions include a reference to this, it is not sufficient.[67]

5.70 This call for better use of planning controls to reduce perceived risks to the public from fires in national parks was supported by the National Parks Association of NSW:

> A strategic approach that focuses on asset protection at the perimeter of bushland and good planning controls on new development is a far more realistic and effective approach.[68]

Conclusion

5.71 Fire needs to be carefully and thoughtfully managed in the Australian environment. It appears fire is in many respects still poorly understood, particularly in terms of evaluating the effectiveness of different fire management strategies and assessing fire's impacts.

5.72 It was obvious from evidence received by the committee that, by land managers' own admission, more could be done to manage fire, but better management will rely to some degree on developing a better understanding of fire. In this regard the committee endorses the call of the House of Representatives inquiry for more research, and hopes all governments will give a sense of urgency to those research efforts. The committee notes that the Australian government's response to the House of Representatives committee report included additional funding for the Bushfire CRC.[69]

5.73 The committee was particularly struck by three aspects of the evidence it received, including impressions gained during site visits. One was that fire will always be a natural part of the Australian environment, and the very nature of that environment (with frequent dry spells and limited periods during the year when it is safe to attempt controlled burns) means that there will always be uncontrollable bushfires from time to time. This is most evident from evidence regarding the Australian Alps, which experienced their worst fires in 1939, under a completely different land tenure and management regime to that in place when fires burnt there in 2003. A significant part of living in and managing the environment must be acceptance of fire and ensuring preparedness for it.

5.74 The second was the importance of State based departments having adequate resources on the ground for fire management. This was a recurrent theme during the

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67 *Submission 76*, p. 13.

68 *Submission 130*, p. 10.

69 House of Representatives Select Committee on the Recent Australian Bushfires, *Australian Government Response*, October 2003, http://www.aph.gov.au/house/committee/bushfires/inquiry/govt_response.pdf, accessed January 2007.

inquiry, along with the over-use of fire as a management tool. The committee will return to this issue in later chapters.

5.75 The third was the scope for Indigenous knowledge and participation to assist in effective use of fire in Australian environments, from the desert to the rainforest. Where it is possible, the committee strongly endorses a greater role for local Indigenous people in the use of fire to manage the conservation estate.

Recommendation 3

5.76 The committee recommends that all governments give greater priority to Indigenous knowledge and participation in park management generally, and fire management in particular.