Abstract: Cultural heritage assets define our culture, providing a sense of place and emotional anchorage in space and time. As such they are regarded as assets worth protecting during disasters, including bushfires. Fire can damage cultural heritage assets through flames and radiant heat, and via inappropriate fire suppression activities during and immediately after a fire. Good planning can provide for the protection of cultural heritage assets during bushfires, but the information within the plans must be easily understood. This paper considers the accessibility of the information related to cultural heritage assists in all available NSW district bush fire management plans. Reading ease and reading age formulae were applied to each plan, and content analysis was used to explore the terminologies used, and the style in which the information was presented. The information regarding cultural assets in the plans was found to be difficult to read, replete with obscure terminology, and sometimes rambling and irrelevant; in short very inaccessible, especially in the high stress environment of a bushfire. The paper concludes with advice on improving the accessibility of these bush fire management plans, advice which will be equally applicable to other disaster plans which consider the protection of cultural heritage assets.
Protecting cultural assets from bushfires:
a question of comprehensive planning

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Cultural heritage sites form an unrenewable asset that is threatened by natural disasters. Given the high bushfire risk, mandatory Bush Fire Risk Management Plans have been drawn up throughout New South Wales, Australia. We compared their mandatory provisions for the protection of heritage assets with an ‘Ideal Heritage Disaster Plan’, containing a series of non-negotiable elements. The examined plans fell well short of the ideal. Preparedness Plans generally lacked discussion of suppression techniques (for historic heritage), prevention, prescribed drills and communication procedures. None of the Response Plans or Recovery Plans contained any of the required core elements, such as rapid suppression techniques and stabilisation procedures). Where aspects were covered, they were addressed in an inadequate level of detail. The overall quality of the cultural heritage components of the plans is judged to be poor. Suggestions are made on how to improve the situation if heritage assets are to have a future after bushfire events.

**Keywords:** Australia, bushfires, cultural heritage management, disaster planning, environmental management, natural disasters

**Introduction**

Fire is one of the most destructive forces of nature, and the likelihood of a fire event in Australia is not a matter of ‘if’, but ‘when’. Southeast Australia is the greatest bushfire prone area in the world (EMA, 2003). It is during and after a bushfire event that cultural heritage, indigenous and historic, is at its most vulnerable, as the direct impacts of fire and fire suppression initiatives have the potential to reduce greatly the historic character and fabric of the resource (Look and Spennemann, 2000).

Cultural heritage is the name given here to ‘valuable features of our environment which we seek to conserve from the ravages of development and decay’ (Davison, 1991, p. 1). Cultural
heritage assets are the manifestations of people’s interaction with their environment. They define our culture in space and time: they are part of the context that makes us human (Aplin, 2002; Howard, 2003). As the remains of material culture pre-date written records, cultural heritage assets are often the only remnants of people, historical processes or traditional events (Hutt, Blanco and Varmer, 1999). Once destroyed, they cannot be regenerated, duplicated or reintroduced (cf. Pearson and Sullivan, 1995).

The all-consuming nature of fire poses a severe, destructive hazard to cultural heritage. It does not distinguish between different types of cultural assets, their associated values and their constituent materials, but rather, it has the ability to obliterate everything in its path as long as there is combustible material and oxygen to fuel it. While the effects of bush fires on cultural heritage resources are highly variable, they are usually deleterious. If cultural heritage assets are able to endure the impact of the fire itself, they then face a new challenge: will they be able to survive the fire management decisions made during and after the event (Spennemann, 1999; 2005; Spennemann and Graham, 2006)?

**Framework**

Management of fire events in the Australian state of New South Wales (NSW) is legally mandated under the Rural Fires Act 1997 (NSW). This piece of legislation also established the NSW Rural Fire Service (RFS), a state-wide organisation that is heavily reliant on volunteers, who comprise the bulk of the force. The varied backgrounds of force members influence the decisions of firefighters when faced with the need to protect property during a disaster event. The attitude and knowledge of RFS volunteers with regard to protection of cultural resources during a disaster have been examined elsewhere (Graham and Spennemann, 2006a). While the individual has a role to play in decision-making during a disaster response phase, the overall planning framework sets the tone and the parameters of the response.

Part 3 of the Rural Fires Act provides for the creation of the NSW Bush Fire Coordinating Committee, which is empowered to make provisions for the prevention, mitigation and suppression of rural fires. It requires the Bush Fire Coordinating Committee to set up a Bush Fire Management Committee in each local government area containing a rural fire district. Each Bush Fire Management Committee is tasked, inter alia, with preparing a Bush Fire Risk
Management Plan for its geographic area of responsibility, which lasts for five years (Farrier, Lyster and Pearson, 1999).

In 1996–97, the Bush Fire Coordinating Committee developed a uniform framework for the completion of Bush Fire Risk Management Plans, and adopted it for use in 1998. The framework (henceforth referred to as the Model Plan) provides a template that the Bush Fire Management Committee can use to explain the level of bushfire risk across the area, and the strategies that will be employed to manage it (New South Wales Bush Fire Coordinating Committee, 1998b). The Bush Fire Risk Management Plan is also intended to provide a summary of the factors that contribute to bushfire risk in the area, including community and environmental/ecological assets. The latter include places of Aboriginal significance, historic heritage sites, threatened species, areas of important native vegetation, dedicated catchment zones, and national parks, state forests and bushland reserves. While the Model Plan guides Bush Fire Management Committees through the steps of completing a Bush Fire Risk Management Plan and suggests a structure, a Bush Fire Management Committee may modify and/or expand the format, provided that any alternative still addresses, at a minimum, all issues outlined in the Model Plan (New South Wales Bush Fire Coordinating Committee, 1998a).

It is widely acknowledged that paper-based plans are only the final outcomes of a planning process. Any planning process that aims to be effective should be ongoing and reflective, making continual amendments that take account of learning from plan implementation (Allan and Curtis, 2005). In an ideal world, a Bush Fire Management Committee would continually evaluate experiences gained by other Bush Fire Management Committees in disaster situations and incorporate salient points into local plans. In reality, however, the diverse composition of Bush Fire Management Committees, as well as a lack of paid staff and personnel discontinuities, almost guarantees that reflection and plan revision only occur when an existing plan has reached the end of its scheduled life.

As has been shown elsewhere (Laidlaw, Allan and Spennemann, in press), even initial plan development is hampered by wholesale, uncritical adoption of passages from other plans, indicating that the Bush Fire Management Committees are limited in their capacity to conduct a critical examination of the issues, either because of time constraints or attitudinal barriers.
Thus, the printed, final Bush Fire Risk Management Plans form the basis for all decisions in a real fire situation. This is even more relevant as the RFS is primarily volunteer based, and hence in the event of a major conflagration, fire brigades from other areas are utilised, which are completely unfamiliar with local conditions and priorities.

This paper scrutinises the cultural heritage related sections of all available NSW Bush Fire Risk Management Plans (n=111), and considers how effective they are in protecting cultural heritage assets during a bushfire event. Two aspects are addressed: the composition and breadth of cultural heritage related components in the plans; and the comprehensiveness of disaster management planning measures employed in the plans. This paper is derived from a larger study of the current state, level and nature of planning for the protection of cultural heritage assets in the face of the ever-present bushfire threat (Spennemann, 2005; Graham and Spennemann, 2006a; 2006b; 2006c; Spennemann and Graham, 2006; Laidlaw, 2004; Laidlaw, Allan and Spennemann, in press).

**Plan composition and breadth of components**

To determine the relative importance of cultural heritage protection in existing Bush Fire Risk Management Plans, content relating to the environmental/ecological assets subheadings of ‘historic heritage’, ‘places of Aboriginal significance’ and ‘threatened species’ was analysed. ‘Threatened species’ serves as a general point of reference on the level of protection afforded to assets that are not unlike cultural heritage assets in their finite, rare and scarce nature, and for which various legal frameworks are in place for safeguard reasons.

In the first instance, the analysis took the form of a presence/absence study of the actual plan content related to the components of the environmental/ecological assets section of the Model Plan. For the purpose of this evaluation, a component was considered to be ‘present’ if it was mentioned or addressed, regardless of the level of detail in the text. For example, although a Bush Fire Risk Management Plan may inform the user that there are no historic heritage sites within the area, the component of historic heritage is still classed as ‘present’, as the requirements of the Model Plan have been met through the presence of text pertaining to that category.
**Plan composition**

The Model Plan requires that Bush Fire Risk Management Plans contain and set out components under the umbrella category of environmental/ecological assets, including ‘historic heritage’, ‘places of Aboriginal significance’ and ‘threatened species’. Generally, equal weight is attached to Model Plan components relating to environmental/ecological assets within the plans.

The analysis of the presence of environmental/ecological assets revealed no significant change in this aspect of plan content over the five years of plan implementation. One might expect the content of the Bush Fire Risk Management Plans to have broadened over this period, as, after a bush fire event, the plans are reviewed and improved. It appears, though, that this has not occurred, perhaps because there was no bushfire event worthy of mention in the preceding five-year period. Conversely, it may indicate that the cultural heritage asset components of the Bush Fire Risk Management Plans were considered perfect, and hence did not need enhancing.

Although 85 per cent of the Bush Fire Risk Management Plans contained all three components, this still falls short of the 100 per cent that one would expect, given that they are a fundamental *requirement* of the Model Plan that Bush Fire Management Committees have been directed to use. None of the incomplete plans provides any indication whether the elements are lacking by intent or through deliberate omission.

The way the components relating to environmental/ecological assets are represented implies that they are of equal importance in the Bush Fire Risk Management Plans. However, while many plans contained the required components, not all addressed them in the same level of detail.

**Breadth of components**

To examine further the relative importance attached to cultural heritage management within current Bush Fire Risk Management Plans, the breadth of each of the three components of environmental/ecological assets was analysed. This involved tallying the number of lines of text relating to each subheading. For the purpose of this analysis, all full, half and quarter
length lines were counted, resulting in whole number totals. Greater precision was impossible because of varying font sizes and styles, and differing page margins within the plans.

*Threatened species* is the dominant component in terms of content per Bush Fire Risk Management Plan, accounting for an average of 76 per cent. The average number of lines per plan devoted to this component is 53. There is, however, tremendous divergence among plans in this regard. The minimum number of lines recorded in one plan was zero, while the maximum in another was 170.

*Places of Aboriginal significance* ranks second in terms of the highest proportion of content in Bush Fire Risk Management Plans, with an average of 18 per cent. The average number of lines per plan is 12.5. The minimum number of lines recorded in two plans was zero, while the maximum in one plan was 40. Furthermore, of the 111 Bush Fire Risk Management Plans, 47 per cent devoted less than 10 lines to this component.

*Historic heritage* is effectively disregarded in many Bush Fire Risk Management Plans, accounting, on average, for only six per cent of lines, despite being ubiquitous in the environment and one of the required components of environmental/ecological assets. The average number of lines for this component is 4.5. The minimum number of lines recorded in eight plans was zero, meaning that an excessively large proportion do not include content. The maximum number of lines recorded in one plan was 26, considerably less than the ‘places of Aboriginal significance’ component, and less than the ‘threatened species’ component. In all, 90 per cent of plans dedicated less than 10 lines to ‘historic heritage’.

Ideally, the ‘places of Aboriginal significance’ and ‘historic heritage’ components, when combined, should be equal to the breadth size of the ‘threatened species’ component. Thus, the ratio of breadth size would be 25:25:50 for the three components, respectively (as indicated by the square in Figure 1).
Figure 1
Ternary scattergram showing the percentage of plans containing the three components of environmental/ecological assets*

* The square represents the ideal position for the Bush Fire Risk Management Plans to be clustered, if the combined components of ‘historic heritage’ and ‘places of Aboriginal significance’ are equal to that of the ‘threatened species’ component.

There is no significant direct correlation between Bush Fire Risk Management Plans exhibiting sizeable breadth measurements for the component of ‘threatened species’ and the breadth of either the ‘historic heritage’ (Pearson’s $r=0.139$, $n=111$) or ‘places of Aboriginal significance’ components (Pearson’s $r=0.329$, $n=111$).

The combined total of ‘places of Aboriginal significance’ and ‘historic heritage’ constitutes just 24 per cent of the entire text devoted to environmental/ecological assets. This is poor given that these assets are of major importance to the community from a cultural heritage standpoint. Moreover, the severe lack of planning for cultural heritage assets does not demonstrate a decisive commitment to their protection.

It is clear that the quantity of information on cultural heritage assets is less than desirable in all Bush Fire Risk Management Plans. The next section considers the degree of comprehensiveness of the little that there is.
**Comprehensiveness of disaster management planning measures**

Unlike the natural environment, where the impact of a disaster often can be tackled in the recovery phase through replanting/revegetation and habitat restoration, the effect on cultural heritage items is irreversible. Even items that can be repaired/restored or reconstructed, their authenticity is irreversibly impaired. To protect heritage adequately requires comprehensive disaster management planning measures.

Adequate disaster management involves three steps: preparation; response; and recovery. Each is equally important, and none, therefore, must be neglected. Comprehensive disaster management planning is a concept that aims to ensure that all aspects are addressed systematically (Gordon, 2002; Nelson, 1991).

To evaluate fairly the NSW Bush Fire Risk Management Plans under discussion, it was necessary to construct a framework that could be applied to a single plan or to a group of plans and was relevant to other Australian states or, indeed, other countries. The framework developed by the authors is the ‘Ideal Heritage Disaster Plan’. The plan, which contains a series of non-negotiable elements, can serve as a benchmark in the analysis of current Bush Fire Risk Management Plans. The Ideal Heritage Disaster Plan, based on Nelson (1991) and Spennemann (2004), details the *core* elements necessary for the protection of cultural heritage assets during a bushfire event. In line with best practice, it comprises three separate sub-plans: a Preparedness Plan; a Response Plan; and a Recovery Plan.

*A Preparedness Plan* should spell out priorities and responsibilities, and detail specific actions to take during an emergency when clear-headed and reflective thinking is likely to be impaired. It should include information such as lists of heritage assets, their location and descriptions, preventative measures such as hazard reduction and asset specific prescriptions, appropriate fire suppression techniques, provisions for testing the effectiveness of the plan, and communication procedures.

For a variety of good reasons, the locational data for a range of indigenous heritage assets are not publicly available and thus cannot be included in the Bush Fire Risk Management Plans. Such locational data and the associated buffer zones, however, are contained on geographical
information system (GIS) layers that will be available to fire management staff in the event of a disaster. The Preparedness Plan should make reference to that fact and make it clear that during the disaster response, adequate reference is made to these GIS layers.

The components of a *Response Plan* should expound that preservation of human life and safety must always come first. In the event of a disaster, planning again is the most important and effective activity. Planning beforehand will allow for a timely response to the disaster’s likely effects. The plan should cover rapid suppression techniques, the incorporation of a heritage adviser into immediate decision-making, stabilisation procedures, and provisions for damage inventories.

The *Recovery Plan* must emphasise the need for patience, and stress that recovery from a disaster does not occur overnight. Initial stabilisation that may have happened during the response phase must be reviewed to ensure that actions taken are appropriate and are not causing inadvertent damage to the assets. The plan should include provisions for a detailed survey and information on current conservation plans, and should provide for the continual involvement of a heritage adviser.

To determine the presence of each of the core elements of the Ideal Heritage Disaster Plan in each Bush Fire Risk Management Plan, a content analysis, as described by Babbie (2001) and Neuman (2003), was conducted. This entailed categorising the content of each Bush Fire Risk Management Plan related to the core elements, and analysing it quantitatively and qualitatively. The analysis of the content of the Preparedness Plan’s core elements of *location, description, prevention, suppression techniques* and *risk analysis* was further broken down into indigenous heritage assets and historic heritage assets, as the distinction between cultural heritage asset types was deemed to be important in this study (thus giving a total of 12 core elements for the Preparedness Plan). An additional category of analysis—combined—was applied to the Preparedness Plan core element of *risk analysis*, because a number of Bush Fire Risk Management Plans refer to cultural heritage assets in a collective manner, rather than specifying whether they are historic or indigenous in nature. This technique only highlights the relative emphasis given to each core element within the plans, and no conclusions can be drawn on the quality or detail of the content—this will be addressed later in this paper.


**Preparedness Plan**

Bush Fire Risk Management Plans vary widely with respect to the inclusion or otherwise of each of the core elements of the Preparedness Plan. Of the 12 core elements, *location* and *description* dominate by far, followed by *risk analysis*. *Suppression techniques* is selectively represented (indigenous heritage assets only), and *prevention* is almost unequivocally disregarded or overlooked. The related core elements of *prescribed drill* and *communication procedures*, are completely absent within the Bush Fire Risk Management Plans. Not one of the 111 Bush Fire Risk Management Plans examined contained *all* of the core elements of the Ideal Heritage Disaster Plan.

There is no statistical variation with regard to the differences between indigenous and historic heritage assets for the core elements of location (10 per cent), description (12 per cent) and prevention (five per cent). However, suppression techniques (49 per cent) is of substantial statistical difference (critical at the 99 per cent confidence interval), while risk analysis (27 per cent) displays a critical difference (at the 95 per cent confidence interval) between indigenous and historic heritage assets.

**Response Plan**

Not one of the 111 Bush Fire Risk Management Plans examined contained any of the four core elements (rapid suppression techniques, incorporation of a heritage adviser into immediate decision-making, stabilisation procedures, and provisions for damage inventories).

**Recovery Plan**

Again, none of the 111 Bush Fire Risk Management Plans examined contained any of the three core elements of the Recovery Plan (detailed survey, information on current conservation plans, and provisions for the continual involvement of a heritage adviser).

The core elements of the Ideal Heritage Disaster Plan are cornerstones of a comprehensive disaster management planning effort; ideally, each core element should be represented in every plan to ensure that disaster situations are dealt with adequately. Overall results on the presence of the core elements of the Ideal Heritage Disaster Plan reveal that of the 111 Bush Fire Risk Management Plans, 86 per cent addressed at least one requirement. Although this
seems a relatively high percentage, the results are skewed, as the plans only make reference to the preparedness phase of comprehensive disaster management planning, completely neglecting the response and recovery stages (Figure 2).

**Figure 2**
Percentage of Bush Fire Risk Management Plans containing core elements of the Ideal Heritage Disaster Plan (n=19)

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**Level of detail**

Finally, to be effective in terms of application, comprehensive disaster management planning relies on the provision of adequate detail during each phase of the planning process.

To assess detail, a ‘level of detail threshold measure’ was devised for each of the core elements of the Ideal Heritage Disaster Plan. Two examples of text were selected:

- one that was considered to encompass the minimum level of detail required to be still deemed as high—anything less was either of a medium or low level of detail; and
- another that was considered to encompass the minimum level of detail to be described as medium content—anything less could only be viewed as a low level of detail.
By comparing document text with the two samples, a threshold was determined. The sample definitions were selected through a review of all 111 Bush Fire Risk Management Plans, and based on the content that best represented the measure to be analysed. As the sample definitions are based on the 111 Bush Fire Risk Management Plans, they provide a relative measure within the plan population, rather than an absolute measure determined by comparison with an ideal and predetermined benchmark.

Since the core elements of prescribed drill and communication procedures were not represented in any of the 111 Bush Fire Risk Management Plans, there was no need to develop thresholds for them.

The level of detail within the plans is highly variable. However, all core elements relating to indigenous heritage assets are consistently presented in the plans as containing a greater level of detail than those associated with historic heritage assets. This finding is not unlike the results on the presence of the core elements. It is encouraging that for each core element, more than 50 per cent of the Bush Fire Risk Management Plans have a medium or high level of detail, yet overall performance is worrying.

In part, this may be explained by the use of information on indigenous heritage assets within the plans. Of the 111 Bush Fire Risk Management Plans, 56 contain a matrix entitled ‘Impact of fire types and suppression activities on Aboriginal sites’, originally sourced from English (2000). This matrix specifies a medium level of detail for the core elements of description and prevention, and a high level for suppression techniques and risk analysis. Undoubtedly, the use of this matrix within the plans increases the level of detail provided for each of the four respective core elements. However, it also raises questions about indiscriminate and uncritical adoption of plan content (‘boiler plating’) (Laidlaw, Allan and Spennemann, in press). The absence of a similar document for historic heritage assets meant that these were less well represented.

An additional discrepancy is evident within the core element of suppression techniques. In contrast to the 56 Bush Fire Risk Management Plans mentioned above that contained the core
element vis-à-vis indigenous heritage assets, only four plans contained the same core element in relation to historic heritage assets. The ramifications of this disparity are immense. The variety of historic heritage assets is as diverse as that of indigenous heritage assets. Historic heritage assets also require that appropriate bushfire suppression techniques are clearly defined in Bush Fire Risk Management Plans. Of the 85 plans that contain historic heritage asset locations, 57.6 per cent exhibit either a medium or a high level of detail. Information on the presence and the level of detail pertaining to the core element of *suppression techniques* is indispensable in protecting historic heritage assets during a bushfire event.

A common problem within the Bush Fire Risk Management Plans is the paucity of information on cultural heritage asset locations. Statements suggest that this is directly associated with the degree of survey work and environmental assessments carried out in the associated region:

*There are no registered sites in the Albury/Hume District. However, this is a reflection of low recording effort rather than absence of sites* (Albury and Hume Bush Fire Management Committees, 2000).

Thirty Bush Fire Risk Management Plans inform the user that additional information is required on cultural heritage assets in general. An array of comments advise that additional schedules of heritage assets will be prepared at a later date, or that information from other sources will be forthcoming:

*There are significant data gaps that make risk assessment of environmental assets difficult. The Bush Fire Management Committee will encourage further research and new findings will be incorporated into any updates of the plan* (Cambelltown Bush Fire Management Committee, 2001).

These and similar statements imply that the information needed for the core elements is incomplete, subsequently rendering the Bush Fire Risk Management Plans insufficient for application in disaster situations.
Statements proposing that firefighters will be made aware of cultural heritage asset locations, particularly indigenous ones, are in direct contrast to the lack of information evident within the Bush Fire Risk Management Plans on cultural heritage asset locations. Twelve plans underline that cultural heritage assets must be managed to prevent actively potential bushfire damage, thus indicating the importance of the assets:

_These sites must be managed to prevent any future fires or fire suppression operations from impacting or possibly destroying places of significance_ (Gloucester Bush Fire Management Committee, 2003).

If fire fighters are to be mindful of cultural heritage assets, Bush Fire Risk Management Plans must provide the required information rather than highlighting the insufficiency of information compiled.

The adage that prevention is better than cure does not seem to apply within the plans. The severe lack of the core element of _prevention_, exacerbated by the fact that of those plans containing the element, not one provides a high level of detail, makes for an ad hoc, rather than planned, response to a bushfire event. The reactive nature of the plans all but negates the presence of and level of detail in related core elements, required during the preparedness phase of comprehensive disaster management planning.

The incontestable lack of content for the core elements of _prescribed drill_ and _communication procedures_ does not make for a comprehensive disaster management plan. This suggests that there is no drill or ‘dry run’ in relation to environmental/ecological assets. Without a complete run-through of Bush Fire Risk Management Plan requisites, any deficiencies within the planning process will not be revealed until during a bushfire situation—and then often too late to be rectified until the next disaster. It is unknown whether any modifications have been made to current plans since the last bushfire event in the relevant plan area.

The complete lack of content on the core element of _communication procedures_ in relation to cultural heritage assets may suggest that communication with heritage practitioners during a bushfire event is deemed unnecessary. Furthermore, it may suggest that protection of cultural heritage assets is not a high priority during a disaster, and that cooperative firefighting efforts
are not of primary importance. However, it is unknown whether appropriate ‘call-up lists’ are available in other locations or contained in other planning instruments, such as the Bush Fire Operations Plan. Regardless, the Ideal Heritage Disaster Plan stipulates that all information should be within one plan, and that it should not contain references to additional plans or locations for the procurement of required information.

Of the 111 Bush Fire Risk Management Plans, seven advised the user to seek information on the location of historic heritage assets from sources other than RFS documents, while one referred the user to an additional internal document, the Bush Fire Operations Plan. With regard to the former, sources included the National Parks and Wildlife Service, local historic societies, and local councils and their associated planning instruments:

*Heritage assets can be identified within the District by referring to Crookwell Historic archives through the local Historic Society. The most comprehensive source is the Draft Heritage Study, which identifies assets of local, national, regional and state significance* (Crookwell Bush Fire Management Committee, 2003).

Regardless of the source of the additional information, if comprehensive disaster management planning is to occur in an effective manner, all required information must be included in the Bush Fire Risk Management Plans. Disaster situations do not wait for the acquisition of required planning information.

There is no correlation between Bush Fire Risk Management Plans that contain Preparedness Plan core elements, and the level of detail within the elements (Pearson’s r=0.2315, n=111). Figure 3 shows the random scatter of Preparedness Plan core elements against the measure of detail of the element. Clearly, the information contained in the Bush Fire Risk Management Plans relating to the preparedness phase of disaster management planning varies greatly.

**Figure 3**

Scattergram representing the presence of Preparedness Plan core elements compared to the average level of detail of the elements in the 111 Bush Fire Risk Management Plans*
The Ideal Heritage Disaster Plan is reliant on the comprehensiveness of the information incorporated into the planning process. The skewed presence within the Bush Fire Risk Management Plans of information pertaining to the preparedness phase of the Ideal Heritage Disaster Plan, completely disregarding the response and recovery stages, does not make for comprehensive disaster management. Furthermore, the detail included within the Bush Fire Risk Management Plans should ideally be of a high level, which is not the case. For Bush Fire Risk Management Plans to be effective in a disaster situation, the information must be comprehensive.

**Implications**

The potentially destructive forces of fire can be reduced through the implementation of effective bushfire planning procedures (Little, 2001). The RFS is charged with managing fires and controlling the threat posed by fire to human interests, such as cultural heritage assets. This involves developing plans and implementing a variety of prevention, suppression and mitigation activities (Thomas, 1999). The current composition and breadth of Bush Fire Risk Management Plans, and the level of detail contained within them, begs the question as to whether they can be effectively implemented during a bushfire event.
In theory, they should form the linchpin of cultural heritage protection during RFS bushfire fighting actions. In practice, however, they fall far short of meeting their potential. On the basis of this systematic content analysis of a total of 111 current Bush Fire Risk Management Plans, the overall quality of the cultural heritage components of the plans is judged to be poor. Very few plans are good, although a few have some good sections. In many plans, though, important elements are missing. Bushfires are an inevitable natural hazard in Australia, but this does not justify placing cultural heritage assets at risk by developing inadequate Bush Fire Risk Management Plans.

Emergency agencies need to integrate cultural heritage asset protection into their training programmes. Some of the key obstacles to achieving desired improvements in cultural heritage protection are attitudinal in nature, firmly established in perceptions prevalent among those in the disaster management field (Stovel, 1998). Not one of the 111 Bush Fire Risk Management Plans has incorporated a drill or training session into its stipulations. Simply documenting responsibilities, procedures and resources is not sufficient to ensure smooth implementation of a plan. A plan is not complete until it has been tested under controlled circumstances and has been thoroughly reviewed for errors, omissions or lack of knowledge on the part of participants (Gordon, 2002). Suffice to say, if a ‘dry run’ of each Bush Fire Risk Management Plan took place, many of the problems inherent in them would become apparent, and ultimately corrected before the next, inevitable bushfire event.

Preparedness, response and recovery procedures form the foundation of effective disaster management planning, yet not one of the 111 Bush Fire Risk Management Plans contains a reference to the response or recovery phases. The response phase of heritage disaster planning involves such important elements as stabilisation procedures and provisions for damage inventories, while the recovery phase includes provisions for a detailed survey and information on current conservation plans for cultural heritage assets. All of these are equally important, and therefore, should not be neglected. Each disaster planning aspect should be incorporated into every Bush Fire Risk Management Plan.

If Bush Fire Risk Management Plans contain the only information on cultural heritage protection that is provided to firefighters, then the information must be comprehensive and firefighters must be able to implement the provisions effectively.
Where do we go from here?

This paper has shown that existing Bush Fire Risk Management Plans are not effective, comprehensive disaster management planning tools. The current plans are scheduled for renewal, with new documents to be drawn up from 2005 onwards. This affords an opportunity to address a number of issues.

First, it is essential that a dialogue is established between fire management authorities and cultural heritage managers, to facilitate future protection of cultural heritage assets (Spennemann and Look, 1998). However, there are presently no designated heritage practitioners on either the Bush Fire Management Committees or on the overarching Bush Fire Coordinating Committee. The positive presence of heritage practitioners on the committees could solve many of the heritage related problems found within the Bush Fire Risk Management Plans. Stovel (1998) acknowledged this issue by confirming the need to strengthen interest in cultural heritage among disaster management personnel.

A systematic process needs to be implemented to evaluate the quality, detail and depth of Bush Fire Risk Management Plan content prior to finalisation. Attention needs to be given to the type and extent of information contained within the plans if they are to be implemented effectively during a bushfire event.

Training programmes need to incorporate comprehensive disaster planning measures, as well as the effects of fire and fire suppression techniques on cultural heritage assets, indigenous and historic. Training needs to include such elements as identification of cultural heritage assets and appropriate preventative measures for their protection.

The more that can be done now to prepare for the next and unfortunately inevitable disaster event, the greater the likelihood of saving Australia’s cultural heritage assets. The future of the country’s cultural heritage assets depends on effective planning procedures. For once destroyed, direct, tangible links to the past are severed forever (Riddett, 2002). Given the known, extreme risk of bushfire events in southeast Australia (EMA, 2003), now is the time to examine the extent of fire planning and the protection of cultural heritage in NSW.
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