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29<sup>TH</sup> July 2009

The Secretary  
Senate Select Committee on Agriculture and Related Industries  
PO Box 6100  
Parliament House  
CANBERRA ACT 2600

Dear Senators,

**Re: Inquiry into the incidence and severity of bushfires across Australia**

The Nature Conservation Council of NSW (NCC) welcomes the opportunity to make a submission to the *Senate Select Committee Inquiry into **the incidence and severity of bushfires across Australia***.

The NCC is the peak NSW conservation organization with over 130 member societies throughout the state. NCC policies are approved by the member organisations at the NCC Annual Conference. They are therefore highly representative of the broader views of the environmentally aware community.

This submission has been developed by the NCC's Bush Fire Management Program and has been endorsed by the NCC Executive.

As the submission will elaborate, NCC's main bush fire management concern is that both public and privately owned bushland should be managed so as to ensure the maintenance of *ecological processes* and the conservation of *biodiversity*.

Notwithstanding these core aims, NCC is fully cognizant of the legal and social imperatives to recognize the priority of life and property during bushfire events.

Wildfire events, prescribed burning and other hazard reduction activities, fire trail construction, and fire fighting operations all have the potential to impact on the natural environment and biodiversity in negative ways.

These events and activities can lead to the decline of both common and rare plant and animal species, ecosystem integrity and soil stability, as well as threatening water and air quality. At the same time, fire exclusion may negatively affect certain types of plant and animal species

NCC believes that the Senate Inquiry offers a very effective opportunity for the development of best practice bushfire management policies, guidelines and strategies that will enable effective maintenance of *ecological processes* and the conservation of biodiversity as well as the protection of life and property.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Cate', with a long horizontal flourish extending to the right.

Cate Faehrmann  
Executive Director

**Submission to the 2009 Select Senate Inquiry re  
the incidence and severity of bushfires across  
Australia**

**July 2009**



# **SUBMISSION TO THE SENATE INQUIRY re *THE INCIDENCE AND SEVERITY OF BUSHFIRES ACROSS AUSTRALIA***

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## **1. The Nature Conservation Council of New South Wales (NCC): organizational principles**

The Nature Conservation Council of NSW (NCC) is the peak NSW environmental organisation, with over 130 member societies located throughout the state. Established in 1955, the NCC works closely with member groups, local communities, government and business to ensure a positive future for the environment. The NCC facilitates large-scale community awareness and education campaigns, develops innovative policies, convenes conferences and produces original research projects and publications.

## **2. The NCC Bush Fire Management Program**

The NCC has been actively involved in bush fire management issues since 1984. The NCC contributed to the 1997 NSW Cabinet Inquiry and Coronial Inquiry into the 1994 bushfires, and also to the NSW Parliament Joint Select Committee. It has regularly provided constructive analysis and policy advice regarding ecological bush fire management to the NSW government since 1994.

Under the *Rural Fires Act 1997*, the NCC has had a statutory right to nominate representatives to Bush Fire Management Committees (BFMCs) since 1987 and currently has nearly 50 representatives throughout NSW.

These responsibilities not only include nominating and administering conservation representatives on BFMCs, but also coordinating quarterly bush fire management workshops in regional areas of NSW, organising a biennial conference, providing a bush fire education web page and promoting community involvement in bush fire management.

In this way, the NCC contributes not only in a planning capacity through representation on BFMCs, but also via the coordination of a unique community education program, and in the development and dissemination of policy advice based on broad public and stakeholder consultation.

The NCC also developed a unique and comprehensive *Bush Fire Policy*. This policy is regularly updated at the annual NCC Conference following on from consultation with NCC member societies and BFMC representatives (see Section 3).

## **3. NCC POLICY STATEMENT RE ECOLOGICALLY SUSTAINABLE BUSHFIRE MANAGEMENT.**

The core element of the *NCC Bush Fire Management Program* is that all bush fire management should be managed within the framework of the Principles of Ecological Sustainable Development (ESD). This principle is also imbedded in the NSW Rural Fires Act.

Characterised by irregular rainfall and regional droughts, the Australian

continent is home to some of the most flammable ecosystems on Earth. From the tropical grassland savannahs of northern Australia to the eucalypt forests of Australia's eastern and southwest coastal regions, fire has been intricately linked in the evolution of fire dependent ecosystems. For tens of thousands of years, fire has been integral to the maintenance of sustainable ecosystems and in ensuring that both floral and faunal diversity was maintained, either through indigenous burning practices or by natural wildfires.

However, the last two hundred years have seen a dramatic shift in the interplay between the landscape, fire and human interaction. The introduction of European agriculture and the establishment of urban and interurban infrastructure have heavily influenced the way in which both bush fire and the landscape are managed, particularly in relation to the urban-bushland interface and fire sensitive ecosystems (e.g. wetlands).

When a commercial or built asset is established in a fire prone area, a liability is created that will require active management for the lifespan of the asset. As a result, more finances and resources will be required for bushfire prevention, mitigation and suppression. The catastrophic 1994 NSW coastal region bushfires resulted in comprehensive inquiries and subsequent legal requirements to protect commercial, built and natural assets from wild fire. The overall aim has been to the development of an integrated set of management strategies, responsibilities and actions and the establishment of effective public service agencies, the key agency being the NSW Rural Fire Service. Currently there are four public agencies that administer fire management within NSW i.e. the NSW Rural Fire Service (RFS), Department of Environment and Climate Change (DECC), Forests NSW (SF), and NSW Fire Brigades.

NCC believes that it is important to acknowledge that bush fire is not simply a costly relic from the pre settlement era which must be suppressed or excluded, but rather that it is an integral ecological management tool. For example, fire is used by primary producers in the mobilisation of nutrients contained in the soils and vegetation (e.g. stubble burning and green pick pasture); by fire fighting agencies for fuel/hazard reduction; by landowners to ensure healthy vegetation and a minimal fire risk; and by indigenous peoples for cultural, environmental and economic reasons. A relatively new concept of fire management is that of the *ecological burn*, where bush fire is re-introduced into the landscape to assist in weed suppression and to promote re-growth of natural vegetation or to ensure its ecological integrity.

Bush fire management therefore necessarily involves a complex interplay of relevant responsibilities, actions and processes. The NCC is of the view that bushfire management is most effective when considered within a broad framework of *integrated* mitigation and preparedness strategies.

This submission will address the major Terms of Reference provided by the House Select Committee Secretariat. Following this, a series of recommendations are provided to the Commonwealth Government in relation

to ecologically sustainable bushfire management strategies. As the NCC is a New South Wales based organisation, this submission is biased towards experiences within NSW and the immediate cross border areas (Qld, Vic, ACT) However, many of the recommendations will have relevance for other parts of the Australian continent.

#### **4. Terms of Reference**

##### **a) The impact of bush fires on human and animal life, agricultural land, the environment, public and private assets and local communities.**

It is important to realize that bush fires may vary greatly in intensity and that the impacts of one bush fire may not necessarily be comparable to another bush fire. Fire fronts can be intense and fast moving and many species of fauna are often not able to outrun or escape such fires. They tend to burn uniformly across the landscape, leaving few areas of relatively unburnt refuges for fauna. However, a critical factor that makes all the difference is that of fire frequency, the impact of which will vary amongst species.

Although local extinctions would have been part of Australia's long fire history, inappropriate fire regimes, resulting from the impacts of European settlement and lack of ecological understanding, now threaten the sustainability of biodiversity and ecological processes.

The 1993/1994 and 2001/2002 NSW bush fires, the 2003 Canberra bush fire, and the 2009 Victorian bush fires were all extreme events that led to the loss of human life and extensive property loss. However, the majority of bush fires do not burn with such ferocity. Most bush fires burn 'patchy', creating a mosaic of burnt, moderately burnt and un-burnt vegetation. The vegetation responds rapidly, releasing a new generation of seeds that would not normally otherwise be released. Fire also stimulates seeds buried in the soil, which without fire, would not germinate. Alternately fire tolerant species may also have the capacity to survive through re-growth of leaves, branches and even to develop new trunks.

Many faunal species either flee early or are able to escape the fire front, taking refuge in these un-burnt patches of vegetation, both during the fire and post-fire, before recruiting back into the burnt area. The patchy mosaic of fire, creating areas of dense and open vegetation, benefits a whole suite of species that may or may not have been present prior to the fire. However, the overall impact of such fires in many cases depends on fire frequency with some species in the Sydney region taking up to 25 years to become fertile (e.g. *banksia serrata*).

The risk that bushfires pose to the community depends on fire intensity and the likely impact on property and human life. Property may take the form of an economic activity e.g. agriculture or forestry or of personal investment ie the family home; such risk becomes very apparent when a bushfire nears the urban-bushland interface. However, the urban interface risk is greatly minimized when land managers and property owners plan for bush fire

protection, as set out in *the New South Wales Bush Fire Environmental Assessment Code 2006*.

**b) Factors contributing towards the causes and risks of bush fires across Australia, including natural resource management policies, hazard reduction and agricultural land management.**

The NCC is of the view that bush fire management should be thought of in terms of a broad range of strategies that contribute to the safety and protection of persons and property as well as to the protection of environmental values. *Environmental values* relate to flora, fauna, water and soils as well as entire ecosystems such as wetlands, rainforests, hanging swamps, etc. These risk management strategies include initiatives on both sides of the interface such as household protection and preparedness as well as planning, building and development controls.

In NSW, the integration of the principles of ESD at all levels of bush fire management and the community consultation required in risk management planning, are two of the more important reforms that have taken place since the 1994 bushfires. The *NSW Rural Fires Act 1957* provided a definitive turning point for bush fire management in Australia

More broadly, the NCC considers that other positive developments included the establishment of Bush Fire Management Committees (BFMCs), the requirement for Bush Fire Risk Management Plans (BFRMPs), increased funding to the Rural Fire Service (RFS) and greater efforts to develop community awareness of fire issues.

However, despite these significant steps toward the better management of bush fires, there are a number of areas where further progress could be made. Subsequent amendments to the *Rural Fires Act 1997*, in the *Rural Fires Amendment Bill 2002*, shifted a significant portion of responsibility for fire management and planning onto local government. The NCC supports the amended legislative framework but recommends that local government be fully supported by other fire management agencies.

To be effective, management of bush fire across the landscape requires a tenure blind approach. While not without challenges, such a management strategy ensures that: all land management agencies (including private property) contribute to the outcomes; there is minimal bias; and inappropriate land management issues can be openly addressed.

Because successful bush fire management is dependent on the participation of all property owners who experience bush fire risk, bush fire management must involve all stakeholders at a planning level.

As bushfires are natural processes that have both positive and negative outcomes, a cooperative approach needs to be adopted. This enables individuals and agencies to align planning and management strategies, but



not try to eliminate bushfires completely. However the overall aim should be to reduce the negative affects that bushfire may have on the community, biodiversity and ecological processes.

**c) Extent and effectiveness of bushfire mitigation strategies and practices, including application of resources for agricultural land, national parks, state forests, other crown land, open space areas adjacent to development and private property and the impact of hazard reduction strategies.**

The NCC is of the view that bushfire management should be conceptualised in terms of a broad range of strategies that contribute to the safety and protection of persons and property as well as the protection of ecological values. Such risk management strategies should include initiatives on both sides of the interface e.g. owner-occupant household protection and preparedness, and building and development controls, as well as appropriate management of the natural environment values.

In metropolitan and rural urban areas, fuel presence is often relatively continuous between property boundaries thus requiring a coordination of strategies across tenures. Fires can also originate on both sides of the tenure interface. They may be caused by natural events such as lightning strikes or by human intervention e.g. through prescribed burning or arson.

While proven to be effective in terms of reducing risk to life and property, prescribed burning is only one method of hazard reduction. Therefore prescribed burning should be considered in the context of the other available options.

To be effective hazard reduction needs to be strategic. If hazard reductions are well planned and take into consideration the characteristics of the vegetation communities they are to be applied to, then strategic and successful outcomes can be achieved. Therefore, the solution is not to cease hazard reduction burning, but rather to have regard to the particular characteristics of the vegetation communities, the environmental and property values at risk, and to strictly control all burning activity to ensure it is safe and appropriate.

**d) The appropriateness of planning and building codes with respect to land use in the bushfire prone regions**

In spatial terms, anthropogenic and natural assets converge at *the urban – bushland interface*. Although one perspective holds that bushland in itself poses a fire threat to property, this framework fails to recognise that homeowners can do a lot in terms of preparing and protecting their own properties from destruction by fire. Similar concepts apply to rural villages and properties.

Indeed management solutions need to be found on both sides of the bushfire interface, and across all *tenures*.

In metropolitan and rural urban areas, fuel is often relatively continuous between property boundaries thus requiring a coordination of strategies across tenures. Fires can also originate on both sides of the interface, and may be caused by natural events such as lightning strikes or by humans activities such as prescribed burning or arson.

The likelihood of damage to property from bush fire is directly related to: the proximity of the property to the fire risk i.e. bushland (including grasslands); the design of the property; its composite materials; and the ongoing degree of management of risk in and around the property. NCC is confident that a precise investigation of the location, design, materials and maintenance of properties damaged or destroyed by fires would support this assertion. Nevertheless, further research is needed re fire protection measures for buildings.

Management of fuel in close proximity to the asset, as opposed to fuel management on the bushland side of the interface, is often a far more effective strategy to achieve fire protection to a particular asset. Short of cementing over or clearing vast tracts of bushland, fuel reduction at the interface must be combined with strategies to increase the ability of a house, structure, product or other economic asset to withstand a bush fire event.

In terms of current NSW bushfire policy framework, the NCC is concerned that, with few exceptions, local governments have failed either to implement or enforce the guidelines contained in the joint Planning NSW and RFS document *Planning for Bush Fire Protection (2001)* (PfBFP). This document provides standards for buildings in fire prone areas. Furthermore, local government Development Control Plans (DCPs) frequently fail to adequately address bush fire protection measures. As noted, there are exceptions to this general pattern.

This failure has been acknowledged by the NSW Government through recent changes to the *Rural Fires Act 1997* i.e. local government is now required to either consult or seek concurrence from the RFS for all new developments in bush fire prone areas.

Although the NCC supports the recent legislative changes in general, it advocates that further urban development be excluded from high and extreme bush fire prone areas. Such an approach should also require the most stringent regulations for developments in other bush fire prone areas.

#### **e) The role of volunteers**

The role of volunteers in community based organisations cannot be underestimated. It ensures that generally passionate and committed individuals are involved. Involvement in bush fire management does not begin

and end at the property level. The NSW Rural Fire Service is heavily dependent on volunteers from the broader community for the implementation of operational and risk management plans as well as the (voluntary) functional duties of the Bush Fire Management Committees. The tradition of volunteering in the bush fire services is an asset that makes all fire fighting operations and many risk management activities possible.

The NCC believes that the strength of current NSW bush fire management process lies in its' grounding in *community voluntarism*. NCC's unique Bush Fire Management Program relies heavily upon volunteers. These volunteers represent the NCC on 46 Bush Fire Management Committees across NSW. NCC also has volunteer representatives on the Rural Fires Advisory Council and the Bush Fire Coordinating Committee. These NCC volunteers seek to ensure that decisions are made that are in the interest of biodiversity and ecological integrity as well the community.

#### **f) The impact of climate change**

In NSW, climate change projections envisage a general decrease in rainfall, particularly along the east coast, where the majority of towns and cities are nestled amongst flammable dry sclerophyll eucalypt forests. Such decreases in rainfall will be coupled with an increase in the number of hot days, generating an increase in the number of declared fire danger days. It is likely therefore that there will be an increased number of bushfires and a greater chance of severe bush fires, such as those seen in NSW in 1994 and Victoria in 2009. Given the continuous expansion of urban development into bushland areas, the predicted changing climate impacts draw attention to the need for (i) government agencies to review and adapt their bush fire management strategies and (ii) for at risk private property owners to adequately prepare their properties their homes against increased or more unpredictable bush fire events. In this context the "government agencies" should be deemed to include the NSW Department of Planning, the Rural Fire Service and all relevant local government areas.

#### **g) The impact of bushfire on biodiversity and measures to protect biodiversity**

Bush fires are an inherent element of the Australian landscape and, as such, most ecosystems depend upon bush fires to ensure their health and continued survival. However, "management for life, property and the environment" requires that all bushfire management strategies should be guided by the principles of ecologically sustainable development (ESD) (as defined in the NSW Rural Fires Act 1997). Key management factors include: the time since the last bush fire ie the inter-fire interval is an important factor that determines the health of an ecosystem, with either too frequent burning and or too infrequent burning being capable of degrading biodiversity values.

Within NSW, each broad vegetation class has recommended guidelines as to

how frequently the vegetation should be burnt. The guidelines take into account the dominant floral species that comprise these vegetation classes and recommend an interval consistent with seed set, seed viability and reproductive age of the species. The policy aims to ensure that a fire will not occur too regularly or too often, as too frequent fire may destroy immature plants established since the previous fire, before they are able to produce viable seeds to ensure the propagation of the next generation. Some Sydney Hawkesbury sandstone species take many years to become fertile (eg banksia serrata takes over 20 years).

Conversely, if fire is excluded for too long, seeds may become non-viable resulting in several species becoming dominant and competitively able to exclude other species or to favour the recruitment of other species. Regular fires at the appropriate interval ensure maximum floral diversity is maintained and that there is a viable seed bank to provide the next generation.

The heterogeneity of the landscape that is produced by both, the variability of fire intensity and the fire regime frequencies, results in different aged stands of vegetation, also allows for maximal fauna diversity. Some fauna species require dense shrubby vegetation, other species require open vegetation and some species require a mix of vegetation to shelter and forage in. Bush fires that burn at the appropriate interval provide this variability.

## **h) Insurance against bushfires**

NSW's Bush Fire Risk Management Planning system is ahead of the other states and territories in terms of the need to have regard for biodiversity conservation within the context of asset protection. NCC believes there is a large scope for a greater involvement by the insurance industries. NCC suggests that the insurance industries should be incorporating bush fire risk management and asset protection into their policies, thus encouraging landowners to implement APZs and SFAZs within their property.

## **CONCLUSION**

In summary, the NCC, urges the Senate Select Committee to address the issues raised in the inquiry with full consideration of the principles of ecologically sustainable development (ESD) i.e. to ensure the conservation of biodiversity and ecological integrity for the benefit of present and future generations.

Within NSW, the increasing frequency of human-induced bush fire events (accidental, intentional and arson-based fires) is presenting an increasing threat to the natural eco-systems that are widely valued for their economic, aesthetic, social and intrinsic values. This unfortunate state of affairs has been confirmed by the identification by the NSW Scientific Committee of 'high frequency fire' regimes as a Key Threatening Process under the *NSW*

*Threatened Species Conservation Act.*

NCC further notes that while fire is an inherent characteristic of the Australian landscape, it is not yet a phenomenon that is well understood by Australian society. Nevertheless, the reality is that Australians live in the here and the now and must do their best to preserve the natural values that are Australia's heritage.

NCC believes that the *Senate Select Committee Inquiry into the incidence and severity of bushfires across Australia* offers the opportunity for a number of landmark decisions that will guide the community to exercising more self-responsibility on behalf of the common good in relation to responsible bush fire management within the context of the principles of ecologically sustainable development (ESD).