



BLUE MOUNTAINS
World Heritage Institute

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[Submission to the NSW Inquiry
into the 2019-20 Bushfires](#)

April 2020

Introduction

The Blue Mountains World Heritage Institute (BMWHI) is an independent not-for-profit organisation based in Katoomba, NSW. It supports the conservation of the natural and cultural heritage of the Greater Blue Mountains World Heritage Area (GBMWA), and for more than 15 years has delivered scientific research, education, social science and creative arts programs, and high quality documentation.

The Institute's overall objective is to support the integration of science, management and policy within and adjoining the GBMWA. This has seen the Institute consult over many years with a wide range of stakeholders across industry, non-government organisations, community groups, and with federal, state and local governments. These include the NSW Rural Fire Service, NSW National Parks and Wildlife Service, Blue Mountains Conservation Society, Blue Mountains City Council, GBMWA Advisory Committee, and many universities.

We have worked internationally with partners including UNDP and IUCN and in several countries, most recently PNG and China.

In the Blue Mountains, working closely with community organisations and networks, we have consistently engaged with multiple stakeholders to develop innovative strategies for conservation and sustainability. In relation to the management of fire, the Institute's interests and activities seek longer-term outcomes and landscape-scale solutions across the GBMWA, particularly in this era of escalating climate change. Key bushfire activities of the Institute include:

- Grose Valley Fire Forum 2007
- Fire Stories documentaries 2013 and 2017
- Yellomundee firesticks - review of cultural burning 2015
- Adaptive management research in relation to fire management 2011

We welcome this Inquiry into the 2019-20 bushfires, mindful that across many years, community submissions to government have given focus to issues that remain only partially resolved. For example, in 2007 the Grose Valley Fire Forum reached this consensus:

Community members called on the State Government to undertake a thorough and independent review of the management of this fire, involving all stakeholders. Principal among the issues raised by the concerned residents were backburning, impacts of frequent fires, under-utilisation of local expertise, and economic costs. The community members also called for adequate funding for rehabilitation and environmental restoration works, to conduct more research and training in certain areas of fire management, to improve pre-fire planning and to develop management systems to better capture and utilise local knowledge. (BMWHI, 2007, p4)

Our submission to this current Inquiry addresses issues and makes recommendations that are relevant to all four of the Inquiry's key terms of reference, and our responses also relate to several of the more specific calls for recommendations.

Summary of Key Recommendations

We advocate that a cohesive and long-term approach to fire management requires a highly collaborative approach, and that:

1. Fire management agencies should adapt fire management practices aligned to the increased incidence and intensity of fire in an era of climate change, and maximise use of climate data projections in preparing for fire.
 2. Authorities and communities should expand and support approaches to whole-of-landscape management that integrate Indigenous knowledge systems, including cultural fire management.
 3. Through targeted funding and promotion, authorities should enhance opportunities and resources for communities to make on-going contributions to holistic landscape management programs – in particular via community monitoring programs that link people and place.
 4. Through targeted funding and promotion, authorities and community organisations should work to enhance and support opportunities for communicating experiences of fire – to build fire literacy and community resilience in fire preparedness and response. This can be done by the strategic use of media, the communication of individual experiences of recent fire behaviour, and the presentation of new modes of managing risk.
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Assessing the recent fires

We acknowledge the great spirit of collaboration that has arisen in response to the bushfires and recognise the need to ensure this is maintained into the future. We also recognise that greater coordination in our first response to these fires was needed, as was strategic decision-making about how to allocate funding. To ensure that Australia's medium and long-term bushfire response is better coordinated and complementary in the future, pathways need to be identified to facilitate collaboration and ensure greater alignment of efforts between NGOs, and between government and NGOs.

More than 80% of the Greater Blue Mountains World Heritage Area was impacted by fire in the 2019/20 season, with approximately 860,000 hectares burnt. As a renowned and well-loved World Heritage site and tourism destination, there has been significant national and international concern over the impacts of the recent fires in the Blue Mountains. Many people look for signs of recovery in the Blue Mountains – one well known good news story is the successful protection of the Wollemi pines. However, a key World Heritage value of the Blue Mountains is the diversity of eucalypt species (more than 100 species), and inappropriate fire regimes are a significant threat to maintenance of this diversity.

With over 5 million visitors annually, tourism provides a major (and now substantially paused) input to the Blue Mountains economy. Re-establishing visitation to appropriate

areas is a priority for government and local businesses. This provides an opportunity to communicate the role of fire, recovery and regeneration pathways and their implications to visitors – to establish new narratives for tourism guides and tourism businesses.

It is important to focus on the recovery potential of the GBMWA, and work is needed across several important areas:

- to assess fire impacts through mobilising monitoring, research and Indigenous knowledge,
 - to identify and promote management interventions – which means collaborative efforts to catalyse and facilitate long-term regenerative projects, and
 - to create promotional/educational communication materials about the recovery process.
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Recognising and adapting to the linkage between climate change and fire scale and intensity

Recommendation 1:

Fire management agencies should adapt fire management practices aligned to the increased incidence and intensity of fire in an era of climate change, and maximise use of climate data projections in preparing for fire.

The linkage between climate change and fire is well understood by scientists, economists, industries, communities and government. On this basis, the NSW State Government's Climate Change fund already provides \$27 million (11% of its total budget) in 2018-19 for 'enhanced bushfire management, research and hazard reduction' as one of its major Climate Change programs (NSW Government, 2019).

However, things have changed – what used to work, doesn't work now. Fire management practices need to adapt to a hotter drier landscape with high fuel loads. In the recent fire season there was an over-reliance on backburns compared with more nuanced, landscape-based strategies, using local knowledge and natural fire advantages.

In moving forward, BMWHI advocates renewed consideration of issues and proposals that have emerged since the implications of climate change became abundantly clear, and in response to key fire events. For example:

Grose Valley fire case study 2006

In response to community concerns about a backburn used for a fire in the Grose Valley in the upper Blue Mountains in November 2006, a one-day forum was convened by the Institute (at the request of the NSW Minister for the Environment) with fire authorities and representative community members. (The detailed report from this forum has been previously provided by Peter Cochrane, BMWHI Chair, to the commission for this Inquiry and the url is in the list of references below.)

The Grose Valley fire started late November 2006, from two lightning ignitions near Blackheath in the upper Blue Mountains, within the Greater Blue Mountains World Heritage Area. Two days later the fire was declared a bushfire emergency under Section 44 of the Rural Fires Act. Major back-burns then rimmed the upper Grose Valley from the townships of Medlow Bath to Mount Tomah. Eight days after the fires started, winds carried the fire further into the valley and across the iconic and highly valued Blue Gum forest. The fire was extinguished after burning approximately 14,000 hectares of the valley.

The media highlighted community concerns about the extensive backburning undertaken to protect the townships from the fire and the impact of the backburning on values of the World Heritage Area. In response to these concerns, a forum was convened.

The community identified 11 key issues to address in the forum:

- Implications of climate change for increased fire frequency and intensity
- Concern about the lack of priority given to protection of the ecological values of the World Heritage Area, in the face of an over-riding priority for protection of human life and private property
- Biodiversity impacts of frequent fires in the Grose Valley
- Effectiveness of review processes in generating real improvements for the future
- Inadequate funding for research, planning and risk mitigation
- Implementation of strategies for risk mitigation and fire suppression in large bushland areas
- Capacity of remote area fire-fighting teams (RAFT)
- Efficiency of fire detection technologies
- Aerial attack efficiency and effectiveness
- The role of the media
- Funding for post-fire recovery

The lack of integration of valid and appropriate community interests with those of fire management agencies was of key concern to the community. The report's lead author noted at the time:

"Over recent years, the public has come to demand and expect a greater say in decision-making processes that impact upon their local environment. This trend can only be considered to increase under the pressures of climate change which will 'up the ante' in terms of resource management and community engagement and concerns. The Grose Valley Fire Forum represented a step forward in this process of better integrating community knowledge and interests into local natural resource management. A key issue raised by concerned residents in the Blue Mountains was the need to better capture and utilise local knowledge. The same call is commonly heard from Indigenous communities. It is essential that fire fighters have the backing of communities, and to secure this the communities needs to feel empowered, not disempowered, in the decision-making process. To date, disempowerment is common and new approaches are needed to overcome this." (Chapple, 2007)

Another key concern was the lack of integration of science into fire policy and management. Again, a quote from 2007 highlights how little has changed:

Implementation of research and presentation of its outcomes needs to be done with careful consideration of its integration with policy and management - the habit is to neglect this part of the process. During this conference we have been presented with modelling data to show implications of climate change for bushfire behaviour over the next 100 years. The models are startling and call for urgent policy responses. We have also seen the complexity of

ecological impacts of fire regimes, and the existing gaps in knowledge. Yet integrating scientific data into policy and management is a major challenge, as is knowledge transfer in general. Far more priority needs to be given to this end of the research process. (Chapple 2007)

The Grose Valley Fire case study remains relevant for the current Inquiry. From 2007, recommendations for each of the above issues were adopted into a program for action by the RFS and other agencies. Responsibility for implementing the actions was assigned to the organisations present at the forum, as well as the Blue Mountains Bushfire Management Committee and the Bushfire Coordinating Committee. This program, admittedly ambitious, progressed slowly over many months until staff changes at Katoomba RFS reduced official commitment and the final outcomes were minimal. Most of the issues remain pertinent and unresolved to this day. There has however been notable progress in the recommendation for the reporting of fires by the media.

Clearly progress is subject to a complex system of economic, social, and political realities. Lasting change requires addressing the system of governance for fire management such as the centralised hierarchical structures of government which tend toward rigidity when they need to be adaptive.

There remains a need for additional funding, to better integrate scientific knowledge, including climate change predictions, into fire management plans. This means basing bushfire management policy on knowledge of complex ecological systems, with climate change science guiding decision processes.

Adequately funded research programs are needed to:

- Achieve better interpretation of ecological data in decision-making and developing practical fire-fighting procedures.
- Better translate legislated objectives for protection of natural and cultural values into operational guidelines.
- Improve the quality of information, and information flow between fire authorities and the community during and after major fires.

The need for systemic and whole-of-landscape approaches that integrate Indigenous knowledge systems

Recommendation 2.

Authorities and communities should expand and support approaches to whole-of-landscape management that integrate Indigenous knowledge systems, including cultural fire management.

BMWHI strongly supports initiatives for Aboriginal-led approaches to understanding fire and caring for Country. We respect the revitalisation of Aboriginal cultural fire

management knowledge and practice as an inherent cultural responsibility and obligation for Aboriginal people to care for Country.

An Aboriginal-led approach means going well beyond the study of Aboriginal techniques, to a collaborative and cross-cultural learning approach that seeks new knowledge and deploys practices grounded in Indigenous experience. Indigenous leadership and expertise are essential and need supporting through a sustainable funding model (Bowman and French, 2020). Ultimately this will also require a fundamental conceptual shift from 'fire management' to 'looking after landscape'.

We note and strongly support calls for the State and Federal Governments to establish a new workforce dedicated to managing land and fuel loads through the use of traditional ecological knowledge. During and in the wake of the 2019-20 fire season, both Indigenous and non-Indigenous fire managers have advocated for an extended and properly resourced training program that enables Indigenous practitioners to engage with other stakeholders and provides training in cultural fire management.

There is an urgent need to upscale Indigenous and cultural fire practices, which are currently relatively small-scale. Programs should build practices that are not just 'alongside' the fire agencies, but become mainstream, with leadership from traditional owners. (See Oliver Costello from Firesticks Alliance Indigenous Corporation quoted in Higgins, 2020). In fact:

We need a whole other division of people out there looking after the land... People need to be on country. Looking after the land is a full-time job, not a seasonal job... A fire practitioner of the future is going to be full time. (Victor Steffensen, Indigenous fire practitioner, quoted in Faa, 2019)

We also argue that approaches must be systemic and go well beyond the popularised focus on hazard reduction burning in National Parks. In this regard, we note that successive state government inquiries and budget estimates have been overly focussed on what is happening on NPWS land. However, in systemic landscape terms, the Parks estate is only one element. Indeed, NPWS is managing just 9% of NSW land, while conducting approximately 75% of hazard reduction burning (NSW Government, 2013 Chapter 11). This underscores the need for a whole-of-landscape approach that is cross-tenure, which means deploying Indigenous-led fire practices across all public land including leased Crown Land and State Forests, and across private property.

Linking people and place through monitoring recovery and change

Recommendation 3.

Through targeted funding and promotion, authorities should enhance opportunities and resources for communities to make on-going contributions to holistic landscape management programs – in particular via community monitoring programs that link people and place.

Generally, in the realm of environmental monitoring and analysis, there is a wide gap between needs and available resources; and new integrated programs are needed to try to close this gap. Engaged communities with strong connection to place and commitment to protecting critical ecosystems should drive monitoring programs forward in the long term. These program should create, baseline data, continually updated records and assessments, all of which are crucial for conservation and recovery programs in response to intensifying climate change impacts, including fire.

For understanding fire impacts and delineating recovery approaches, we advocate place-based citizen science as an important way to augment studies by scientists working in research institutions and government authorities, and this is especially so when decades-long and intergenerational monitoring is necessary in the face of complexities related to climate change.

Importantly, citizen science also plays a key role in making change happen, through engaging and motivating those who will go on to initiate and participate in decision making, educational activities and practical implementation programs.

Fire literacy is a vital asset for communities, and from the ground up, the involvement of citizens can enable specific local knowledge of place and circumstance to complement the more general insights of science and professional expertise.

A critical issue is the need for monitoring in relation to the longer term impacts of climate change-driven mega-fires. Monitoring is also essential to provide a window for intervention on the part of land management agencies. As with COVID-19 testing, monitoring data are key to prevention strategies; that is, the same logic that applies to the movement of disease also applies to impacts on species in the natural environment caused by climate change. It will be increasingly relevant for understanding environmental changes caused by extreme fire events in the future.

We are advocating for appropriately funded programs that enable citizen science teams to collaborate with other researchers and institutions, to deliver on-going monitoring of eco-systems in the face of climate change, including drought and fire impacts. In the Blue Mountains context, we note the particular need for new focus on impacts for threatened upland swamps, which face intensifying drought, fire, and local flooding resulting from climate change.

Enhanced monitoring is very timely, since there is an urgent need for data that helps assess the immediate impacts and recovery pathways after the 2019-20 bushfires. The findings will inform protection and recovery planning at local, state and national level; and enhance community capacity and knowledge, enabling long-term strategic interventions.

Specific to this project, is the need to involve Blue Mountains communities in raising awareness of the fragility of local ecosystems, and their dependency on fire for survival, alongside the threats of catastrophic fire events. Community involvement is a key enabler of on-the-ground action to protect individual species and whole ecosystems and habitats in the face of evident climate change.

Communicating fire narratives

Recommendation 4.

Through targeted funding and promotion, authorities and community organisations should work to enhance and support opportunities for communicating experiences of fire – to build fire literacy and community resilience in fire preparedness and response. This can be done by the strategic use of media, the communication of individual experiences of recent fire behaviour, and the presentation of new modes of managing risk.

Crucial to strategies for recovery and prevention is the need to build fire literacy within communities – to help communities better appreciate the reasons why the Australian environment is so prone to fires and what our fire management agencies and Indigenous organizations are doing to manage fire and try to prevent catastrophic events. It is also important to show fire managers as members of local communities.

We believe that the best of fire communication strategies should convey the research and knowledge of fire ecologists and fire management specialists; the lessons learnt from the Indigenous people of this country who for thousands of years used fire to manage the landscape; the place of cultural burning practices for the indigenous communities living within the Greater Blue Mountains World Heritage Area; the risks of living in a fire prone environment; as well as the challenges climate change presents to fire managers, as weather extremes change fire behavior.

In our own experience, since 2012, the Institute has worked in partnership with the NSW Rural Fire Service, NSW National Parks and Wildlife Service and Blue Mountains City Council to produce a series of informative and engaging documentaries about fire. The first film *Fire Stories: A Lesson in Time*, was released in 2013 <https://www.youtube.com/watch?v=ZPOJmIl0l4E>, and it explores the impacts of the catastrophic fires in 1957 on the Blue Mountains community in Leura. The second documentary, *Fire Stories: Living with Risk*, was released in 2017 <https://www.youtube.com/watch?v=L4rJJqjrL8U>, and concerns the 2013 bush fires that devastated the Blue Mountains townships of Winmalee and Yellow Rock. It documents the recovery of the community afterwards. A third film, *Fire Stories: Managing Risk* documentary is being planned for 2020, to focus on the way in which fire authorities have manage bushfire events and risk across the 2019-20 fire season. This third film will also give strong focus to Indigenous practices.

In the Blue Mountains, these films have been catalysts for community action, and have been widely screened by authorities during community consultations, with several thousand local residents as viewers. Findings among viewers surveyed after the 2013 screenings showing that 36% did not have a bushfire plan, but that the film had greatly increased the likelihood that people would take the action to develop their plan – 85% surveyed said they would now do this after viewing the film. More generally the films:

provided viewers with the vicarious experience of a major fire event, using visual technology to convey the speed, unpredictability and destructiveness of fire in

familiar locations... to personalise the experience... [and] assisted respondents to come to terms with, and to overcome impediments to, being prepared for fire events and helped stimulate readiness and mitigation actions. (Chapple et al. 2017)

The importance of narrative-based communication of personal experience has been underlined in successive Australian inquiries into natural disasters including fire. Films, theatre, visual artworks, web portals and blogging, social media and public events are increasingly seen as vehicles for community engagement, education and calls to action.

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