



Blue Mountains World Heritage Institute

Climate Change & Fire in the Greater Blue Mountains and Sydney Basin Region: An Interdisciplinary Research Forum

April 12, 2005

Workshop Report

The workshop was organised by the Blue Mountains World Heritage Institute (BMWHI) and attended by 30 people from a range of organisations concerned with the potential impacts of climate change on the ecosystems of the greater Blue Mountains and in particular with the complexity of fire management. The organisations represented were the NSW Department of Environment & Conservation (DEC), Sydney Catchment Authority, Rural Fire Service, Blue Mountains City Council, University of Western Sydney, Australian Museum, University of Sydney, Nature Conservation Council of NSW, World Wide Fund for Nature, Blue Mountains Conservation Society and the Hawkesbury-Nepean Catchment Management Authority.

The purpose of the workshop was to bring together a wide range of stakeholders to share information about current research efforts relating to climate change and fire in the region, and to identify existing gaps in knowledge. Recommendations were sought from the group regarding projects for BMWHI to facilitate or implement.

Dr John Merson, Executive Director of BMWHI, convened the forum. His introductory comments highlighted the seriousness of fire as an issue already affecting the lives of everybody in the Blue Mountains, and that climate change will only exacerbate this threat through escalated fire frequency and intensity due to the drying out of the environment. Dr Ross Bradstock (Principal Research Scientist with the Policy and Science Division, DEC) gave an overview of the potential impacts of climate change on ecosystems in the Blue Mountains & Sydney Basin region, and the risks associated with more frequent and intense bush fires.

This was followed by group discussion about key issues relating to the enormous complexity of fire management across urban, rural and wilderness landscapes. Each of the management agencies concerned with fire control has different mandates and priorities: RFS - protection of property and assets; DEC - protection of natural heritage; SCA - protection of Sydney's water supply; BMCC - protection of the local government area and development therein; HNCMA - biodiversity, river health, soil and land condition.

Impacts of fire and climate change were considered in the following categories:

- Biodiversity conservation;

- Ecosystem services and catchment values (impacts on the Sydney water supply quantity and quality; impacts on tourism; public health impacts eg diseases; impacts on air);
- Commercial and Urban Impacts (agri-industrial, property & tourism);
- Cultural and Community Assets (Aboriginal & European, aesthetic and landscape values).

RESEARCH APPROACH & ISSUES

It was agreed that the research approach should be:

1. How do we manage fire and why? The policy and management implications of research are of over-riding importance. Key is not only WHAT research should be undertaken but also HOW it is conducted.
2. What research can usefully inform management, and what management responses are possible? The vexed issue of how to integrate different management objectives was a central theme of the workshop.
3. What are the values we want to protect? Can we quantify risk for each variable? How do we quantify and integrate the different values ie ecological, economic and social? Research approaches are needed which integrate all of these aspects and perspectives.

Other matters raised:

- An implication of climate change is that fire management efforts will need to be doubled just to achieve the same result as those to date. This of course has enormous implications for planning and resources.
- The need to expose the myths associated with fire, many of which are urban-based due to a lack of understanding of fire behaviour.
- The need for more planning regulations and tighter development restrictions in high fire-risk areas; the use of insurance as a mechanism to drive good urban planning.
- The need for a risk management framework.
- Climate change has recently been listed as a key threatening process under the Threatened Species Act.
- Indigenous knowledge and Aboriginal perspectives on fire need much greater recognition than they have received to date.
- The destructive impacts of fire on Aboriginal cultural heritage and the critical need to protect that heritage, particularly as it is increasingly evident that the density of rock art in the World Heritage Area is extremely high.
- Increased biodiversity on farms is critical to the biodiversity conservation effort in Australia, but that this also increases fire risk.
- The potential negative impact of climate change on tourism due to increased fire risk and therefore closure of parks.

- The significance which the media plays with respect to its reporting of fire incidences and therefore its influence on the perceptions and understanding of fire and the need to address mis-information by the local and national media.
- That the suppression of fires in remote areas is often not cost-effective, raising the question of “what are the costs and benefits to biodiversity of not suppressing fires in wilderness areas?”

RESEARCH NEEDS

The workshop identified several areas requiring research:

- Developing an inventory of current and past research relating to fire in the Blue Mountains region, and research regarding climate change impacts. Such an inventory would include a meta-analysis to critically assess what research questions have not been answered. These research questions need to be jointly defined by managers, policy makers and scientists.
- Historical fire regimes and ecological evolution; pre-European use of fire as a land management tool in the Blue Mountains.
- More data against which to base decisions, ie how to balance social and ecological imperatives for fire-fighting. What fire management is best for different areas? Effects of fire on invasive species (weeds and feral animals) and on native species; a need for better knowledge of individual species recovery to inform management or post fire rehabilitation/recovery from fires; the importance of increasing our understanding of the links between exotic weed infestation and fire, particularly along riparian corridors.
- Impacts of fire frequency and intensity on soil micro-organisms.
- Research which helps in understanding the dynamics of complex chaotic systems and ecosystem resilience, since this is particularly relevant to predictions of fire behaviour and system changes in response to climate change.
- The socio-political ecology of fire: personal values, social norms and expectations.
- Effects of fire suppression: how management affects fire behaviour; e.g. what the impacts of back-burning are on wildlife (eg wildlife unable to escape from fire) and flora (effects on habitat).

FUNDING

Potential funding sources to finance research were discussed. Suggestions included: community grants through the national water initiative (Federal government); key stakeholders may be willing to provide finance eg tourism industry; insurance companies; legal firms; UNESCO; ARC Linkage grant.