



THE NATURE CONSERVATION COUNCIL OF NSW
PRESENTS ITS 6TH BIENNIAL BUSHFIRE MANAGEMENT CONFERENCE

BIODIVERSITY UNDER FIRE

NSW TEACHERS FEDERATION CONFERENCE CENTRE, SYDNEY
22ND JUNE – 23RD JUNE



BIODIVERSITY UNDER FIRE

BIODIVERSITY UNDER FIRE
22ND - 23RD JUNE 2009

NB: speakers and sessions which they
present in may change prior to the
conference.

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PROGRAM

DAY 1 SESSION 1 CLIMATE CHANGE, FIRE AND FAUNA

08:15	Registrations	
09:00	Ms. Cate Faehrmann Executive Director, NCC	Welcome
09:05	Mr. Rob Pallin Bushfire Advisory Committee, NCC	Order of Proceedings
09:10	The Hon. Steve Whan, MP NSW Minister for Emergency Services	Opening Address
09:30	Prof. Ross Bradstock University of Wollongong	Perspectives on Bushfire Management Debates: what does current knowledge tell us and what does the future hold?
10:00	Assoc Prof. Peter Clarke University of New England	Climate Change, Fire Severity and Biodiversity
10:30	Morning Tea	
11:00	Dr. Alan York University of Melbourne	What Will Happen to the Little Things that Run the World?
11:30	Mr. Andrew McIntyre DECC NSW	Initial Scan of Risks of Climate Change for NSW Biota
11:50	Mr. Graeme Hamilton Birds Australia	Title TBC

12:10 Questions
12:30 Lunch

DAY 1 SESSION 2 ECOSYSTEMS AND ECOSYSTEM SERVICES

13:30	Dr. Kevin Tolhurst University of Melbourne	Redefining Bushfire as a Landscape Process
14:00	Mr. Philip Ingamells NPA Victoria	Looking After the Whole Kit and Caboodle: fire and biodiversity in Victoria
14:20	Dr. Neil Burrows Dept. Environment and Conservation, WA	Big Bad Fires Threaten Rock Outcrops
14:40	Mr. Jeremy Little James Cook University	Climate Change Impacts on Fire Risk and Vegetation Across An Environmental Gradient of the Wet Tropics
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15:30	Dr. Trent Penman NSW Dept. of Primary Industries	Managing Fire and Biodiversity in Dry Sclerophyll Forests
16:00	Dr. Scott Wilkinson CSIRO Land and Water	Sediment and Nutrient Erosion and Transport Following Bushfires: Implications for Water Quality and Habitat.
16:20	Ms. Joanne Hand Melbourne Water	Uniting Our Fire Recovery Response in the Face of Uncertainty
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PROGRAM

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10:10	Mr. Chris Brock Dept. of Natural Resources, Environ- ment, the Arts and Sport, NT	Managing Fire for Biodiversity in Central Australia
10:30	Dr. Beth Gott Monash University	Managing Fire for Biodiversity in Central Australia
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11:40	Mr. Tim Beshara Greening Australia	Weeds, Fire and Climate Change: Do We Need a Better Understanding or Do We Just Need to Get Our Act Together? A Case Study for Institutional Reform Across Western Sydney.
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14:05	Mr. Karl Mckillop Willoughby Council	Willoughby City Councils Ecologically Sound Hazard Reduction Program
14:25	Mr. David Lemcke Wyong City Council	Urban Interface Area Model– Climate Change Adaptation at the Bushland/Urban Interface.
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WELCOME

On behalf of the Nature Conservation Council...

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CONFERENCE COMMITTEE

Adrian Davis

Kate Nicolson

Dr. Judy Messer

Prof. Don White

Robert Pallin

Anne Reeves

Jane Gye

Jim Morrison

Cate Faehrmann

SESSION 1: CLIMATE CHANGE, FIRE AND FAUNA



SESSION 1:

CLIMATE CHANGE, FIRE AND FAUNA

MS CATE FAEHRMANN

Cate Faehrmann is the Executive Director of the Nature Conservation Council of NSW.

Cate has previously managed media and election in NSW, Victoria, South Australia and New Zealand. She has also been a media adviser in State Parliament. Cate is on the Boards of the environmental law organisation the NSW Environmental Defender's Office and the online campaigning organisation GetUp!.

She is also on the NSW Government's Natural Resources Advisory Council.

One of Cate's initiatives, Walk Against Warming, has become Australia's biggest community day of action on climate change.

MR ROB PALLIN

Chair person of the Nature Conservation Council of NSW 2000-2005, Chairman, Paddy Pallin group of companies, member of NPWS South Coast Advisory Committee and the Carrington Falls Management Committee. Robert is currently the NCC's Representative on the Illawarra Bush Fire Management Committee, the Bush Fire

Co-ordinating Committee and the Rural Fire Service Advisory Council.

Robert was a councillor on Ku-ring-gai Council from 1991 to 1995 and chaired the Hornsby Ku-ring-gai Bush Fire Management Committee.

THE HON. STEVE WHAN, MP

Steve Whan lives in the regional city of Queanbeyan in South East NSW, and is married to Cherie with two teenage children. For many years he has been a very active member of the local school, sporting and volunteering communities, and likes keeping fit and spending time with his family.

Steve has an arts degree in Social Sciences majoring in economics and politics from the University of Canberra, as well as a Graduate Certificate in Management from the University of Western Sydney.

Before becoming an MP Steve worked for the Australian Sports Commission, and for various Federal Ministers and MP's in Advisory and Research Assistant roles. In his earlier years Steve worked in a variety of casual and temporary employment including labouring while studying at university, and trolley pushing for Woolworths as a teenager.

Steve was elected to Parliament in the regional seat of Monaro in 2003, an area characterised by its agricultural and tourism-based industries. He has been a

member of the Standing Committee on Broadband in Rural and Regional Communities, and Vice-Chair of the Public Accounts Committee. He has also served as Parliamentary Secretary to the Minister for Primary Industries, Rural Affairs, Regional Development, and Assisting the Minister for Planning.

Steve has a keen interest in representing the needs of non-metropolitan areas of the state in particular, and was a key member of the Rural and Regional Taskforce, which reported directly to the Premier on the challenges currently facing country NSW.

Steve was sworn in as a Member of the Rees Government in January 2009. He is the Minister for Emergency Services and Small Business.

SESSION 1:

CLIMATE CHANGE, FIRE AND FAUNA

PERSPECTIVES ON BUSHFIRE MANAGEMENT DEBATES:

What Does Current Knowledge
Tell Us and What Does the
Future Hold?

Prof. Ross Bradstock,
Director, Centre for Environmental
Risk Management of Bushfires,
University of Wollongong.

Abstract

Debate about fire management is commonly perceived to be about choices among mutually exclusive alternatives. The basis of debate is simple and boils down to assumptions about the degree we can influence fire regimes and the nature of effects on ecosystems. What have we learned through research and what can this tell us about these assumptions? Can these debates now be settled? How will global change shift these debates and what will we need to know in order to understand the responses of fire regimes and key values that will be affected by fire?

CLIMATE CHANGE, FIRE SEVERITY AND BIODIVERSITY

Assoc. Prof. Peter Clarke, PhD
Associate Professor, University of
New England

Biography

Peter Clarke is an Associate Professor at The University of New England in the School of Environmental and Rural Sciences where he teaches plant ecology and has an active research team examining applied and theoretical questions about vegetation dynamics. He is the Deputy Chairperson of the NSW Scientific Committee and is on the board of the prestigious scientific journals Oecologia, Austral Ecology and Australian Journal of Botany. He is recognized as a researcher at the forefront of international efforts to understand the mechanisms of plant persistence and regeneration in relation to fire regimes. Peter has published extensively with over 80 refereed journal articles, one popular reference book, and several book chapters. This research has involved many research students ranging in systems as diverse as Spinifex Dunes, Dry Rainforests and Tropical Savanna. His current research, funded by the Australian Research Council, involves collaboration with NSW DECC to assess the effect of fire severity on vegetation typical of eastern Australia.

Abstract

Climate change modeling holds predictions for a worldwide increase in woody biomass; a shift that is expected to have widespread ecological and economic consequences. Fire regimes for flammable biomes are also predicted to be altered by climate change because of shifting fire weather and the biomass 'fertilization' effect. Currently, fire is promoted as a major regulator of ecosystem distributions but the interactive effects with climate change are multifaceted and difficult to predict. A major unresolved problem is the interactive effect of fire intensity and fire intervals on plant species growth, reproduction and persistence. In particular, the influence of soil fertility, vegetation type and the passage of fire is poorly understood at landscape scales. More importantly, predicting the biological consequences of these interdependencies at landscape scales has limited the ability of conservation managers to make informed decision about hazard reduction. A three-year study, funded by the Australian Research Council and NSW DECC, is examining the impact of fire severity on the ability of plants to persist and reproduce across diverse vegetation types from rainforest to heaths in Northern NSW. Our results show remarkable resilience of populations and communities to high intensity fires within a frequency threshold.

SESSION 1:

CLIMATE CHANGE, FIRE AND FAUNA

WHAT WILL HAPPEN TO THE LITTLE THINGS THAT RUN THE WORLD

Dr. Alan York,
B.Sc (Hons), PhD Zoology
UNSW
Senior Research Fellow, Department of
Forest and Ecosystem Science, Univer-
sity of Melbourne

Biography

Research Leader – Forest and Fire Ecology Group, Department of Forest and Ecosystem Science, University of Melbourne.

Program Leader – Bushfire CRC Project B3.1 Effects of fire on ecosystem processes and biodiversity

Alan is a Senior Research Fellow at the University of Melbourne, leading the Forest and Fire Ecology research group. He coordinates a number of projects concerning fire ecology, primarily dealing with the effects of fire on the maintenance of biodiversity and associated ecosystem processes. The aim is to understand the interaction between fire, vegetation, vertebrates, invertebrates and soil organisms in carbon and nutrient cycling, and how this contributes to biodiversity conservation and ecosystem function. This research will help explain how elements of biodiversity regulate vital ecosystem processes and functions, and how altered fire regimes may impact upon them. By understanding these interactions they provide assistance to land managers in determining the ecological sustainability of current and future fire management practices.

Abstract

Interactions among vegetation, fungi, and litter- and soil-dwelling invertebrates are responsible for regulation of carbon in litter and soil, with these organisms also comprising the bulk of our terrestrial biodiversity. Ed Wilson called the insects ‘the little things that run the world’, but despite their importance in our lives we know very little about them. An understanding of how soil and litter-dwelling organisms are influenced by fire and fire regimes is critical for good management of forests, particularly when future scenarios predict the likelihood of more frequent and intense fires. Recent calls of “No Fuel – No Fire” highlight ignorance in the broader community about the significance of the leaf litter as habitat for many organisms, and the important role that invertebrates play in the litter decomposition process. Soil and litter animals are a sensitive link between plant detritus and the availability of nutrients for plants. Changes to the fire regime, either as a consequence of climate change or through increased use of fire for fuel reduction, have the potential to profoundly influence invertebrate biodiversity and disrupt rates of decomposition and nutrient cycling. This paper outlines recent research that investigates the response of invertebrate communities to fire-induced change, and the implications that this might have for both biodiversity conservation and the maintenance of essential ecosystem processes.

INITIAL SCAN OF RISKS OF CLIMATE CHANGE FOR THE NSW BIOTA

Mr. Andrew McIntyre,
B.Nat.Res. (Hons), Grad.Dip.
Public Policy
Manager, Biodiversity Assessment and
Conservation, North East. Department
of Environment and Climate Change,
NSW.

Biography

Andrew McIntyre grew up in South Australia and studied at the University of New England at Armidale in the mid 1980s. Andrew has worked as field ecologist studying forest fauna in South Australia, Victoria and New South Wales. He has worked on a variety of forest conservation strategies and threatened species conservation. Andrew has been managing the Biodiversity Assessment and Conservation Section in Coffs Harbour for 10 years. Andrew is married and has two teenage children and lives at Moonee Beach north of Coffs Harbour.

Abstract

As part of the NSW Government’s response to the challenge of climate change the Department of Environment and Climate Change undertook an initial exposure scan of the likely impacts of climate change on a range of bio-physical attributes. The process involved describing likely climate changes at a regional level and then using expert panels identifying the potential impacts arising from those predicted changes. The presentation will provide an overview of the results of that assessment for the NSW biota.

SESSION 1:

CLIMATE CHANGE, FIRE AND FAUNA

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Graeme Hamilton
Chief Executive Officer, Birds Aus-
tralia

Biography

XXXX

Abstract

Abstract Pending.

SESSION 2:

ECOSYSTEMS AND ECOSYSTEM SERVICES

SESSION 2:

ECOSYSTEMS AND ECOSYSTEM SERVICES

REDEFINING BUSHFIRE AS A LANDSCAPE PROCESSES

Dr. Kevin Tolhurst
Dip.For.(Cres.), B.For.Sci (Hons.),
PhD
Senior Lecturer, Fire Ecology and
Management, Department of Forest
and Ecosystem Science, University of
Melbourne

Biography

Kevin's initial training was in Forest Science and worked in various fields including forest research, visual landscape assessment, forest harvesting and recreation. Kevin has 34 years of bushfire experience ranging from fire suppression, prescribed burning, fire management and fire research. In 1984, Kevin initiated a multidisciplinary research team investigating the long-term effects of repeated low-intensity fire in the foothill forests of Victoria. Since the late 1980's, Kevin has performed the role of fire behaviour and weather specialist at a number of significant fires including the Sydney fires in 1994 and 2001 and the Great Divide and Alpine fires in Victoria in 2003 and 2007 and the Black Saturday Fires in Victoria 2009. Kevin is a Senior Lecturer at the University of Melbourne and is developing a bushfire risk management model as part of the Bushfire Cooperative Research Centre.

Abstract

The increasing occurrence of severe fires in southeastern Australia in the past decade has magnified the shortcomings of our understanding and management of fires. One of these shortcomings has been to consider fire regimes as pertaining to points in the landscape rather than to landscape units. This has led to concepts about fires that are relevant to small areas such as experimental sites, but does not translate well to sustainable management of biodiversity within the larger landscape. Fire regimes need to be considered at a scale relevant to the species or processes we want to sustain. It is the variability in patterns of fire intensity, seasonality, frequency, size and type that are important. We need to make better use of computer modelling and visualization tools to communicate some of these more complex concepts. Unless we get the scale and pattern of fire impacts right, we will not be able to deal with the challenges of managing fire in a changing environment associated with climate, technological and demographic change.

LOOKING AFTER THE WHOLE KIT AND CABOODLE: FIRE AND BIODIVERSITY IN VICTORIA

Mr. Philip Ingamells
Park Protection Program, Victorian
National Parks Association

Biography

Phil Ingamells has had a long interest in nature conservation in Victoria. He spent many years developing educational materials and visitor information within Victoria's National Parks Service and its successors, and then privately. Since 2003 he has been with the Victorian National Parks Association, working for better protection of the State's natural areas. He headed the VNPA's successful campaign to remove licensed cattle grazing from the Alpine National Park, and currently works on issues related to fire and biodiversity. He is an Honorary Life Member of the VNPA.

Abstract

There are many good aspects to fire management in Victoria's natural areas, but currently we can identify appropriate fire regimes for only a small percentage of native species. With predictions of more frequent and more intense fires already manifesting, we must radically expand our knowledge, and our resources, if we are to give our natural heritage the support it will need.

BIG BAD FIRES THREATEN ROCK OUTCROPS

Dr. Neil Burrows
B.Sc., Ph.D
Director Science Division, Department
of Environment and Conservation
Western, WA

Biography

After graduating from the Australian National University (ANU) in 1977, I worked as an applied fire scientist with the Forests Department of Western Australia and later with the Western Australian Departments of Conservation and Land Management and Environment and Conservation. My research focused on fire behaviour and fire effects in a range of vegetation types including softwood plantations, native forests, banksia woodlands and rock outcrops in south-west WA, and hummock grasslands in the Western Desert. In 1994 I completed a PhD on modelling the behaviour and acute impacts of fire in Jarrah (*Eucalyptus marginata*) forests. I have also worked on threatened fauna restoration projects



SESSION 2:

ECOSYSTEMS AND ECOSYSTEM SERVICES

SESSION 2:

ECOSYSTEMS AND ECOSYSTEM SERVICES

in the arid and semi-arid regions of WA, investigating the role of altered fire regimes and introduced predators in fauna declines. Since 1996 I have been the Director of Science in the Department of Environment and Conservation, but make time to remain involved with fire research, fire policy and fire management.

Abstract

Rock outcrops embedded in flammable forest and heath landscapes of south-west Australia host distinctive assemblages of fauna and flora and can provide refugia for relictual and fire sensitive taxa. The Monadnocks Conservation Park south of Perth has a high concentration of rock outcrops and because of their perceived 'fire sensitivity', a fire exclusion policy was adopted for the Park. In summer 2003 a lightning strike started a fire in the Park and under hot, dry windy conditions, the fire developed quickly, displaying extreme behaviour in the long unburnt forests and heathlands. The fire exclusion policy failed to protect the rock outcrops from long term, and in some cases, irreversible fire damage. The intensity and scale of the fire was such that rock outcrops were unable to function as fire refugia. Fire sensitive vegetation that did not burn, such as moss swards and Borya meadows, was killed by radiated and convected heat. The level of tree mortality was high and there was considerable erosion of the thin mantle of soil that supports life. Following the wildfire, a new fire management guideline was prepared and includes regular prescribed burning of the surrounding flammable and more fire resilient vegetation under mild conditions such that the rock outcrops will not burn. Reducing the flammability of the surrounding vegetation, without threatening its integrity, will enable rock outcrops to function as fire refugia by significantly reducing the intensity and size of future wildfires.

Biography

Jeremy is originally from Sydney and completed a degree in Biology at the University of Wollongong with Honours in fire and landscape ecology.

Jeremy has spent 10 years working for the National Parks Services in New South Wales and Queensland on bushfire research, biodiversity surveys, as a ranger and in management.

He also holds graduate certificates in photography and public sector management.

For the last 10 years, Jeremy has lived in the Wet Tropics of North Queensland, where he is completing a PhD at James Cook University on the impacts of climate change on fire and forest boundaries in the Wet Tropics.

In his spare time he works closely with local conservation groups and likes to make time for bushwalking, camping, exploring, adventuring, photography, spirituality, music and friends.

Abstract

With current climate change, there will be a dramatic increase in bushfire frequency and intensity. The impact of this is potentially catastrophic, both environmentally and socially, as has been recently demonstrated in Victoria.

Fire sensitive vegetation communities, including rainforests and eucalypt forests, are the most at risk ecosystems from climate change, due to their reliance on long fire intervals or a complete absence of fire. Increases in fire incidence, will cause potentially significant contraction of these ecosystems, with implications for biodiversity and threatened species.

This project examines the extent to which climate change will impact the fire risk and vegetation of a biological hotspot, the Wet Tropics bioregion of north-east Queensland. The Wet Tropics region is dominated by rainforest, yet contains the most extreme variation in fire weather in all of Australia. This includes the wettest locations hosting montane rainforest juxtaposed to frequently burnt savanna woodlands, which contain 70% of Australia's total fires.

Vegetation and weather patterns have been measured and analysed across an environmental gradient from montane rainforests through ecotonal eucalypt forests into savanna woodlands. This data is being used to determine climatic niche requirements for each vegetation community and present their Fire Danger characteristics. The landscapes patterns will have implications for similar environmental gradients in eastern and south-eastern Australia.

An ensemble modelling approach will then being used to determine the likely impact of climate change on fire risk and vegetation of the Wet Tropics under future climate scenarios.

Jeremy will be presenting a summary of his research with some preliminary data.

Biography

Trent is a fire ecologist working within the Forest Science Centre of NSW DPI. His work focuses on the impact of forest management practices on the biodiversity values of native forests. Recently this work has examined datasets collected from long term operational experiments.

Abstract

Fire is inextricably linked with the structure and function of Australia's vegetation communities. Developing appropriate fire management practices requires consideration of both the ecological and economic assets.

Long term data sets regarding the long term impact of fire management practices on biodiversity are invaluable. Here we present one such example. In a 20 year study in south-east dry sclerophyll forests understorey vegetation has been recorded in a study site where varying fire regimes have been applied to logged and unlogged forests. Over time there has been a decline in standing species richness and a shift in community structure that has occurred independently of the management regime imposed, with fire and logging having only minor impacts. These changes are consistent with theoretical predictions of the natural changes with increasing time since wildfire. To determine the resilience of these communities we sampled the soil stored seed bank. Logging had a positive impact on the diversity and abundance of seeds in the soil stored seed bank, with fire having a varying effect at the community level.

Frequent fire resulted in a decreased probability of occurrence for eight species and did not increase the probability of occurrence for any species, with logging having a variable effect on six species. While the above ground vegetation communities are showing only minor responses to the anthropogenic disturbances, these changes are more pronounced in the soil seed bank. The absence of wildfire for 35 years from these sites is affecting the visible understorey vegetation communities. In its current form, prescribed fires will not have the same impact on the vegetation as wildfire, and therefore new approaches for ecological burning should be considered.

Biography

Scott is a research scientist with CSIRO Land and Water. He has been based in Townsville for the past 2 years, and prior to that was in Canberra. His research focuses on river basin fluxes of sediments and nutrients and how they are affected by changes in land management, climate and hydrological conditions. Scott has expertise in GIS modeling using the SedNet model, and sediment fingerprinting and tracing.

MANAGING FIRE AND BIODIVERSITY IN DRY SCLEROPHYLL FORESTS.

Dr. Trent Penman
Ph.D (University of Newcastle),
B.Sc (Hons) (UNSW)
Research Scientist, Department of
Primary Industries, NSW

SEDIMENT AND NUTRIENT EROSION AND TRANSPORT FOLLOWING BUSHFIRES- IMPLICATIONS FOR WATER QUALITY AND HABITAT.

Dr. Scott Wilkinson, PhD
Research Scientist, CSIRO Land
and Water

CLIMATE CHANGE IMPACTS ON FIRE RISK AND VEGETATION ACROSS AN ENVIRONMENTAL GRADIENT

Mr. Jeremy Little
PhD candidate
Centre for Tropical Biodiversity and
Climate Change, School of Marine and
Tropical Biology, James Cook University

SESSION 2:

ECOSYSTEMS AND ECOSYSTEM SERVICES

UNITING OUR FIRE RECOVERY RESPONSE IN THE FACE OF UNCERTAINTY

Ms. Joanne Hand
B.Sc (Biological), Grad. Cert.
(Environmental and Business
Management), Grad. Cert.
(River Health).
Bushfire Recovery Co-ordinator,
Melbourne Water

Abstract

Fire can alter sediment sources and transport rates in river basins, changing landforms and degrading downstream aquatic habitats and water quality. While the impact of wildfire on sediment and nutrient transport is variable between environments, between fires, and with time since fire, some common themes are apparent. For several years post-fire, rain storms of sufficient intensity can erode and transport sediment to streams, particularly if fire severity is sufficient to expose the soil surface by removing ground vegetation and litter cover. Following fires in Sydney (2001) and Canberra (2003) water supply catchments, and forest areas of Victoria (2003, 2006), catchment sediment and nutrient yields were significantly elevated, between 10 and 200 times larger than what would have occurred in the absence of fire. Hillslope topsoils can be disproportionately affected by post-fire erosion, which increases the impact of post-fire sediment yields on downstream rivers and water bodies due to the organic and nutrient-rich nature of this material. These findings may help to guide catchment management practises to reduce wildfire impacts on downstream water quality.

Biography

8 years professional experience in the Natural resource Management Industry of Victoria, including:

- Working with pristine rivers in Far East (Gippsland) Victoria;
- River Health Management of waterways in the Port Phillip and Westernport (Melbourne) region of Victoria;
- Developing and Implementing community education and capacity building programs including Waterwatch and the Melbourne Water Incentives program cost sharing program working with landholders to deliver onground outputs
- Working with the Land Development Industry of greater Melbourne to build water quality treatment and drainage infrastructure for new housing estates

Experience in fire recovery includes:

- Strategic and onground fire recovery of waterways impacted by the bushfires in the East Gippsland region in summer of 2002/2003
- Three years experience as an onground fire fighter working within Melbournes water supply catchments area's
- Co-ordination of the Melbourne Water fire recovery response for waterways affected by fires.

Abstract

The 2009 Black Saturday bushfires impacted over 940km's of waterway in the Port Phillip and Westernport region. This presentation will provide an insight into the fire recovery response undertaken by Melbourne Water and challenges faced in undertaking our recovery program. The integration of science and onground recovery actions to date will be explored. This, together with the importance of a sustained and co-ordinated recovery approach between land management agencies, will tell the story of how we are helping the recovery of our natural environments and waterways impacted by fire.

SESSION 3:

MANAGING FIRE FOR BIODIVERSITY



SESSION 3:

MANAGING FIRE FOR BIODIVERSITY

OPENING ADDRESS

Commissioner Shane
Fitzsimmons
NSW Rural Fire Service

Shane Fitzsimmons has 25 years experience with the NSW Rural Fire Service (RFS) serving as both a volunteer and salaried officer. In 1998 he was appointed an Assistant Commissioner with the RFS and has held portfolio responsibilities for Operations, Strategic Development and Regional Management. In 2004 he was appointed the inaugural Australasian Fire Authorities Council (AFAC) Visiting Fellow to the Australian Institute of Police Management (AIPM) for a period of 12months. In September 2007 he was appointed Commissioner of the NSW Rural Fire Service. He is a member of the NSW State Rescue Board and has recently been appointed Chairman. Shane was awarded the National Medal in 1999 and the Australian Fire Service Medal (AFSM) in 2001.

A CONVERSATION ABOUT FIRE

Mr. Cuong Tran
B.Sc (Hons), Ph.D submitted
Lecturer, Griffith University

The SEQ Fire and Biodiversity
Consortium

Biography

Cuong Tran is an academic in the School of Environment, at Griffith University as well as the Coordinator of the SEQ Fire & Biodiversity Consortium, a role he has been passionately involved in since 2003. Cuong's background has been in plant flammability, culminating in a long-awaited PhD research thesis on the topic, and something he will touch on today. Cuong is also keen to see good evidence-based outcomes on the ground, especially when it comes to fire ecology and management, he is also heavily involved in fire planning workshops and facilitating avenues for dissemination of information, from fact-sheets up to internationally-recognised conferences. On the other side of life, Cuong loves reading and bushwalking, and is dad to two lovely kids, 2-year old Nathanael and 2-month old Jessica and welcomes the chance to be out on a school night!

Abstract

A conversation about bushfire... in this presentation, I'd like to reduce the discussion on fire to highlight some of the things that we know and also the things we don't know that we should focus our attention on. I will discuss aspects of prescribed burning, hazard reduction, ecological fire knowledge, climate change and people and how we can handle this complex mix to deliver useful and practical on-ground outcomes.

Biography

Chris Brock has worked in the Northern Territory for 13 years in the

fields of conservation land management, biological survey and vegetation mapping. In the Top End of the Northern Territory he has worked on a range of research projects including threatened species, grazing impacts, ecosystem health and the impacts of fire on vegetation. His most recent work involves formulating fire and weed management strategies using detailed vegetation mapping datasets, as well as facilitating on ground fire management in the southern region of the NT.

Abstract

Fire management has the most important biodiversity implications of any activity that takes place on National Parks in the Northern Territory. The removal or preservation of fuel and vegetation in the landscape drives the biodiversity patterning for flora and hence the fauna communities. While the northern savannas accumulate enough fuel annually to facilitate large landscape-scale fires, the southern desert regions may accumulate such fuel loads only once in 20 years. Although more burning takes place in the Top End, overall, the prescribed still falls short in its ability to mitigate extensive "late" fires. Similarly, the areas burned in the southern desert regions have proven inadequate to stop large landscape scale fires affecting reserves. While the reasons for these shortfalls are multifactorial, it is clear that insufficient knowledge capital plays a large part. High staff turn over and a difficulty in attracting Rangers experienced in fire management to often remote locations contribute to this lack of knowledge and experience.

RECOGNISING THE ROLE OF KNOWLEDGE CAPITAL IN PRESCRIBED BURNING OUTCOMES IN THE NORTHERN TERRITORY.

Mr. Chris Brock
B.Sc. Applied (Hons)
Senior Plant Ecologist. Department of
Natural Resources, Environment, the
Arts and Sport, NT.

SESSION 3:

MANAGING FIRE FOR BIODIVERSITY

THE PREHISTORY OF AUSTRALIAN BIODIVERSITY

Dr. Beth Gott, B.Sc., M.Sc.
(Melb), Ph.D. (London)
Honorary Research Fellow, School of
Biological Sciences, Monash University

Biography

Personal Bio (100-200 words): My initial research was on the developmental physiology of cereals, but after working in Hong Kong and eastern United States, my interest turned to Ethnobotany. After returning to Australia I have specialised in Aboriginal Ethnobotany in Southeastern Australia. I have databases covering New South Wales, Victoria, Tasmania, and South Australia. I have published two small books and a number of papers. The paper which is most relevant to this conference is:

Gott, B. 2005 Aboriginal Fire Management in South-eastern Australia - aims and frequency. Journal of Biogeography 32: 1203-1208.

Abstract

Australian Biodiversity began to be recorded when Europeans encountered the continent. What is not always acknowledged is that the ecosystems they found had many thousands of years of interaction with the original inhabitants. It is useful to look at the way Aborigines used fire and to examine how the long history of burning resulted in the evolution of Australian biodiversity. Modern fire studies which aim to preserve biodiversity can reveal how the Aborigines created that biodiversity, and can enlighten our management of suitable areas.

FAST AND EFFECTIVE OR SLOW AND DEADLY? ECOLOGICAL EFFECTS OF FIRE RETARDANTS

Dr. Tina Bell
PhD (Botany), Dip. Sc,
Dip. Ed., BSc
Senior Research Fellow, University of
Melbourne

Biography

I am a Fire Ecologist who has worked in Victoria at the University of Melbourne for the past seven years. Our fire research group is based in Creswick and we aim to investigate all aspects of the fire regime – time since fire, fire severity, season of burn and fire frequency and the effects these variables have on biodiversity. My research interests include fire response of vegetation, nutrient cycling as a consequence of fire and adaptations of plants to enhance nutrient uptake. Through supervision of postgraduate students I also contribute to diverse research fields such as greenhouse gas emissions from soil, the role of plant functional traits in rehabilitation and plant community structure. I have worked in a range of ecosystems spanning alpine and sub-alpine water catchments, dry sclerophyll forests and woodlands and mediterranean heathlands.

Abstract

Research interest in fire retardants used in fire-fighting has increased in the last few years, particularly in Europe, and a short review of current research will be presented. The effects of a commonly used fire retardant on plant growth and survival, invertebrate communities and soil chemistry in heathlands in Victoria will also be presented. Heathland ecosystems were chosen for the study as they are relatively low in nutrient availability and plants adapted to these conditions are likely to show greater growth response than plants from nutrient-rich ecosystems. Two sites in Victoria were used; Victoria Valley in the Grampian Ranges and Marlo in East Gippsland. Both sites were relatively undisturbed and supported long unburnt heathland vegetation. Plots were subjected to no addition fire retardant ('control' and 'water only' treatments) or single applications of increasing concentrations of retardant (0.5, 1.0 and 1.5 L fire retardant m⁻²). A single application of fire retardant did not significantly change species composition or projected foliage cover of the major life forms of native vegetation. Death of shoots and whole plants of targeted species was recorded after application of fire retardant and was also observed to affect other species. The fire retardant had a 'fertiliser effect' and generally increased shoot growth but did not significantly increase the overall height of target plants. The application of fire retardant appeared to enhance weed invasion, particularly at higher levels of application.

SESSION 3:

MANAGING FIRE FOR BIODIVERSITY

WEEDS, FIRE AND CLIMATE CHANGE:

Do We Need A Better Understanding or Do We Just Need to Get Our Act Together? A Case for Institutional Reform Across Western Sydney.

Mr. Tim Beshara, BSc (Environmental), MA (Development Studies)
Science Manager, Greening Australia

Biography

I have a degree in environmental science with majors in geology and geography. I found the degree wasn't instantly useful to enter a tough environmental jobs market early this decade. So in response I started working for various bush regeneration companies across Sydney pulling out lantana. I also spent a stint building sandstone steps through bush-land reserves. This practical experience combined with TAFE courses provided a solid grounding for my environmental career. In 2004 I joined Greening Australia to manage the impressive Greening Western Sydney project (one of Australasia's top 25 restoration projects according to the Society for Ecological Restoration International). My role as Science Manager covers a broad area of policy advocacy, science and program development. I attend to tasks such as conservation planning, grants writing and policy submissions. I also present to Mayors, Ministers and parliamentary committees. A Master of Arts in the social sciences has helped me polish my skills in this area.

Abstract

Weeds are bad (usually but not always). Fire can be good or bad. Climate change makes everything very confusing and probably much worse. So what to do? Do we commission more studies or just get on with it? Tim will make an argument that we just need to get on with it. There is no silver bullet but we have a pretty good idea of what to do so why can't we just do it. Using Western Sydney as a case study Tim will outline a raft of institutional barriers and inconsistencies that prevent the NRM industry making inroads. He will also present options for reform.

Progress in Prescribed Burn Management in NSW

Dr. Simon Heemstra, B.Sc (Hons), PhD
Manager Community Planning and Environment, NSW Rural Fire Service

Biography

Worked for the RFS for the last 7 years.

Manager Community Planning and Environment section, responsible for state wide policy and implementation for Bush Fire Risk Management Planning, research programmes, prescribed burning, bush fire environment policy. RFS volunteer for 15 yrs and Deputy Captain in Woronora Bush Fire Brigade. Completed a PhD on bush fire patchiness in 2005.

Abstract

There have been several recent advances in prescribed burn management that the RFS has been developing and implementing. This is aimed at improving the quality of hazard reduction completed as well as ensuring that the works are undertaken in areas where they are most needed and conducted as safely and environmentally responsible as possible. Through the new BFRMP process the determination of prioritised treatment is more refined and transparent so that Works programming gives prioritisation of treatments to the extreme and very high risk assets. Enhanced funding has provided improved capability for agencies and brigades to prepare for and undertake burning which has recently included the utilisation of RFS works crews. Prescribed burn policy has been streamlined and improved to produce a practical and workable set of burn planning templates as well as consent and approval processes. These templates are being implemented across all fire management agencies in NSW and prescribed burn planning training and competencies are also being implemented.

SESSION 4:

FIRE, KNOWLEDGE AND VALUES: TRANSLATING THEORY INTO PRACTICE



SESSION 4:

FIRE, KNOWLEDGE AND VALUES: TRANSLATING THEORY INTO PRACTICE

THE BLAME GAME: COMMUNITY PERCEPTIONS OF BUSHFIRE AND FIRE MANAGEMENT BEFORE AND AFTER BLACK SATURDAY

Mr. Gavan McFadzean
Victorian Campaigns Manager The
Wilderness Society

Biography

Gavan McFadzean has almost two decades experience in environmental campaigning and advocacy in Australia and overseas. He has worked on campaigns to protect native forests in four states, as well as the Philippines and the United States. He has also worked on campaigns to protect the natural and cultural values of Cape York, the Daintree and the Great Barrier Reef and now heads up The Wilderness Society's Wild Country program for Victoria, focusing on conservation projects to protect ecological processes at the landscape scale. He is The Wilderness Society's delegate to the Australian Council of the International Union for Conservation and Nature.

Abstract

Gavan's presentation will explain community perceptions and knowledge about the bush-fire phenomenon, based on market research commissioned by The Wilderness Society in Melbourne before and after the Black Saturday fires. Gavan will outline key insights into how environmental NGO's, scientists, academics and other stakeholders should communicate the fire issue to the general public.

REINTRODUCTION OF APPROPRIATE FIRE REGIMES:

One Important Approach by
Willoughby City Council to the
Conservation Management and
Restoration of the Cities Bush-
land Ecosystems.

Mr. Karl Mckillop
Bush Fire Officer, Willoughby City
Council

Abstract

Willoughby City Council is located on the lower north shore of Sydney- approximately 7 minutes by car to the Sydney CBD. The area has two catchments, Middle Harbour Catchment to the east and Lane Cove River Catchments to the West. The bushland reserves of the Willoughby local government area (LGA) are predominately open schlerophyll forests occurring on soils of the Hawkesbury Sydney Sandstone complex bordered by habour foreshore. Other open schlerophyll forests occur on wianamatta shale and represent transitional pockets of bushland throughout the LGA. Much of this bushland is contiguous with larger natural areas to the west and north administered by the NSW National Parks and Wildlife Service (Lane Cove and Garrigal National Parks). Although the system is fragmented and the remaining native vegetation is somewhat damaged (through the impacts of urbanization; lengthened fire regimes, bushland reserve fragmentation, increased water in these areas, weed invasion), the reserves still contain a diverse range of species and faunal habitats. Willoughby City Council's ecologically sound hazard reduction program aims to reintroduce natural fire regime cycles into fragmented and unburnt urban bushland areas- to encourage native plant regeneration and improved biodiversity conservation.

Biography

David is currently employed as a Senior Planner (Legal and Policy Unit) with Wyong Shire Council, on the NSW central coast. David has a background in both development and strategic planning in NSW local government having lived and worked predominantly in peri-urban areas with a range of competing development and environmental priorities including Lithgow, the Blue Mountains and Lake Macquarie. David is also an active member of the RFS and is a deputy captain at Peninsula Rural Fire Brigade. Additionally, David is the NCC bushfire representative on the Lake Macquarie BFMC. David's partner Tracey and their two sons occasionally get him out on Lake Macquarie in the tinny.

Abstract

Climate change requires new models to better manage the bushland/urban interface to protect native vegetation and biodiversity, and to protect urban development from increased bushfire risk. The UIA Model incorporates:

- bushfire protection measures,
- environmental protection measures,
- space for stormwater management, and access.

The UIA Model treats bushfire hazard and protects bushland by providing permanent infrastructure in a multipurpose corridor.

SESSION 4:

FIRE, KNOWLEDGE AND VALUES: TRANSLATING THEORY INTO PRACTICE

MANAGING TENSIONS IN FIRE PRONE COMMUNITIES:

An Interactive Session

Ms. Waminda Parker
B.Sc (Hons) Macquarie University
Project Strategist, Hotspots Fire Project
(NCC)

Biography

Waminda has been part of the Hotspots Fire Project since its inception nearly five years ago. She brings to the project a passion for fire management within an ecological context, and a clear understanding of the need for integration of its various elements. Waminda holds qualifications in resource and biological science, including an honour degree in conservation genetics. She has a particular interest in conservation management outside protected areas and within fragmented and mix-used landscapes. Prior to Hotspots, Waminda was a researcher for WWF and worked in Brazil where she explored changes in plant composition in native vegetation fragments within agricultural dominated landscapes.

Co-presenters:

Judy Lambert (Hotspots Facilitator)

Judy has more than two decades of experience in environment and NRM work. Trained in paramedical, social and environmental sciences and in business administration, Judy has worked as a research scientist, community sector advocate, fulltime consultant to a former Federal Environment Minister, and for the past 16 years as a partner in Community Solutions, a small business specialising in bringing together the diversity of interests needed to achieve sustainable NRM outcomes in both urban and rural communities.

Sally Hunt (Hotspots Coordinator)

Sally Hunt has more than 20 years experience working on various NRM projects in NSW and Victoria as well as in California, USA and the North Island of New Zealand. Sally has undertaken course work in fire ecology and behaviour while studying for her Masters degree in Environmental Science at Monash University, Victoria. Sally has been a firefighter in Victoria and in Northern California and was previously an NCC Representative on the Wyong Bushfire Management Committee. Prior to Hotspots, Sally worked for more than 10 years on water issues with a number of government and NGO organisations.

Abstract

Tensions exist in any fire-prone community. However it is frequently the case that these differences sit side-by-side with many shared values of the landscape. Both our values and the ways in which we 'know' things are determined by and reflective of our experiences in and responses to the world around us. When we come together to share complex and difficult challenges such as the management of fire in a changing climate, understanding the ways in which we each 'know' and value our environment can play an important role in finding shared ways forward.

This participatory session will facilitate discussion on the values people place on the land and how these values affect fire management decisions and actions. Such stories can help us to understand and perhaps develop better solutions to resolve conflicts within communities about how to manage bushland in fire prone landscapes.

Using these principles, the Hotspots Fire Project (Hotspots) has developed and refined a community-based training program which aims to provide landholders with the skills and knowledge needed to actively and collectively participate in regional fire management planning and implementation.

Hotspots works by bringing communities and representatives together – from a wide range of perspectives – including landholders, fire authorities, fire ecologists, Indigenous groups and natural resource managers from all areas. The training program allows for regional information sharing and learning followed up with practical on-ground training to develop and implement cooperative fire management plans cross landscapes. Our approach to fire management demonstrates that communities with different values and priorities can work together towards the common goal of sustainable and practical fire management.



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